October 13, 2023

Ms. Melanie Sandoval, Records Bureau Chief
New Mexico Public Regulation Commission
P.O. Box 1269
Santa Fe, NM 87504-1269

Re: Case No. 23-00073-UT *In the Matter of Southwestern Public Service Company's 2023 Integrated Resource Plan for New Mexico*

Dear Ms. Sandoval:

Pursuant to Section 8(C) of NMAC 17.7.3, Southwestern Public Service Company ("SPS") is pleased to file with the New Mexico Public Regulation Commission ("Commission"), our 2023 New Mexico Integrated Resource Plan ("IRP") for the period 2024 through 2043 (the "Planning Period").

The 2023 IRP is a culmination of a six-month robust and successful facilitated stakeholder process, in which stakeholders across seventy-eight organizations—including many community and customer representatives from our service territory—provided input to modeling efforts, the Statement of Need, and the Action Plan. The 2023 IRP identifies the most cost-effective portfolios to meet our customers' energy and capacity needs over the Planning Period. As load continues to grow in our service territory, it is SPS's privilege to support economic growth in New Mexico and across the area it serves. The 2023 IRP provides multiple pathways to meet that need reliably and affordably, while also reducing carbon emissions.

A copy of this filing is being provided electronically to the Commission's Utility Division Staff, interveners in SPS's most recent general rate case, and participants in SPS's 2021 IRP proceeding. SPS is also providing a copy of the filing on the Xcel Energy IRP website, https://www.xcelenergy.com/company/rates_and_regulations/resource_plans. Certain information is being submitted under seal pursuant to 17.7.3.15(A) NMAC and SPS's pending motion for a Protective Order.

If you have any questions, please contact me or Linda Hudgins, Regulatory Policy Specialist at (806) 378-2709.

Yours very truly,

/s/ Zoë Lees
Zoë Lees,
Regional Vice President, Regulatory Policy

Enclosures

2023

Integrated Resource Plan

Filed in Compliance with 17.7.3 NMAC

Southwestern Public Service Company

October 13, 2023

2023
Integrated Resource Plan
Filed in Compliance with 17.7.3 NMAC

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Safe Harbor Statement

This document contains forward-looking statements that are subject to certain risks, uncertainties and assumptions. Such forward-looking statements are intended to be identified in this document by the words “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “intend,” “goal,” “may,” “objective,” “plan,” “possible,” “potential,” “project,” “proposed,” “should,” “vision,” “will,” “would” and similar expressions. Actual results may vary materially. Forward-looking statements speak only as of the date they are made, and we expressly disclaim any obligation to update any forward-looking information, except to the extent events or circumstances constitute material changes in the Integrated Resource Plan that are required to be reported to the New Mexico Public Regulation Commission pursuant to 17.7.3.8 NMAC. The following factors, in addition to those discussed elsewhere in Xcel Energy Inc.’s and SPS’s Annual Report on Form 10-K for the fiscal year ended December 31, 2022 and subsequent filings with the Securities and Exchange Commission, could cause actual outcomes and results to differ materially from management expectations as suggested by such forward-looking information: operational safety; successful long-term operational planning; commodity risks associated with energy markets and production; rising energy prices and fuel costs; qualified employee workforce and third-party contractor factors; violations of our Codes of Conduct; our ability to recover costs; changes in regulation; reductions in our credit ratings and the cost of maintaining certain contractual relationships; general economic conditions, including recessionary conditions, inflation rates, monetary fluctuations, supply chain constraints, and their impact on capital expenditures and/or the ability of SPS to obtain financing on favorable terms; availability or cost of capital; our customers’ and counterparties’ ability to pay their debts to us; assumptions and costs relating to funding our employee benefit plans and health care benefits; tax laws; uncertainty regarding epidemics, the duration and magnitude of business restrictions including shutdowns (domestically and globally), the potential impact on the workforce, including shortages of employees or third-party contractors due to quarantine policies, vaccination requirements or government restrictions, impacts on the transportation of goods and the generalized impact on the economy; effects of geopolitical events, including war and acts of terrorism; cyber security threats and data security breaches; seasonal weather patterns; changes in environmental laws and regulations; climate change and other weather events; natural disaster and resource depletion, including compliance with any accompanying legislative and regulatory changes; costs of potential regulatory penalties and wildfire damages in excess of liability insurance coverage; regulatory changes and/or limitations related to the use of natural gas as an energy source; challenging labor market conditions and our ability to attract and retain a qualified workforce; and our ability to execute on our strategies or achieve expectations related to environmental, social and governance matters including as a result of evolving legal, regulatory and other standards, processes, and assumptions, the pace of scientific and technological developments, increased costs, the availability of requisite financing, and changes in carbon markets.

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Glossary of Acronyms and Defined Terms

Acronym/Defined Term	Meaning
2023 IRP	2023 Integrated Resource Plan
Action Plan	Defined in the IRP Rule as the proposed process and specific actions the utility shall carry out to implement the integrated resource plan spanning a three-year period following the filing of the utility's integrated resource plan.
Act	New Mexico Renewable Energy Act
Action Plan Period	2024-2026
ATB	Annual Technology Baseline
BESS	Battery Energy Storage System
BYOT	Bring Your Own Thermostat
CC	Combined Cycle
CCN	Certificates of Convenience and Necessity
CO_2	carbon dioxide
Commission	New Mexico Public Regulation Commission
CTG	Combustion Turbine Generator
DISIS	Definitive Interconnection System Impact Study
DSM	Demand-Side Management
EE	Energy Efficiency
EESPs	Energy Efficiency Service Providers
ELCC	Effective Load Carrying Capability

Acronym/Defined Term	Meaning
Electrification Forecast	a stakeholder-driven high load-growth forecast
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
ET	Existing Commercially Available Carbon Free Dispatchable Technology Resources
EUEA	Efficiency Use of Energy Act
Facilitated Stakeholder Process	information exchanged through a series of facilitated stakeholder meetings defined in the IRP Rule as the statutory public advisory process pursuant to Section 62-17-10 NMSA 1978, conducted by a commission appointee to facilitate advisory discussions among stakeholders, including members of the public, to advise the public utility and reach potential agreement in the utility's development of its statement of need and action plan
Financial Forecast	a conservative or low load-growth projection
FOM	Fixed Operations and Maintenance
GCP	Combined Real Gross County Product
GIA	Generation Interconnection Agreement
GWh	gigawatt-hour
GPM	gallons per minute
HC	Gas-to-Hydrogen Conversion

Acronym/Defined Term	**Meaning**
HEI	Home Energy Insight
HER	Home Energy Report
HES	Home Energy Services
HPWH	Heat Pump Water Heaters
HRSG	Heat Recovery Steam Generator
ICO	Interruptible Credit Option
IRP	Integrated Resource Plan
IRP Rule	17.7.3 NMAC
ISO	Independent System Operator
ISP	Integrated System Planning
ITP	Southwest Power Pool Integrated Transmission Plan
kW	kilowatt
kWh	kilowatt-hour
L&R	Loads and Resources
LDS	Long Duration Storage
LED	Light-Emitting Diode
LM	Load Management
LOLE	Loss of Load Expectation
LRE	Load Responsible Entity
MJB	Multi-Jurisdictional Baseline
MMBtu	Million British Thermal Unit
MMU	Southwest Power Pool Market Monitoring Unit
MW	megawatt
MWh	megawatt-hour

Acronym/Defined Term	Meaning
NERC	North American Electric Reliability Corporation
NIMS	National Incident Management System
NOI	Notice of Intent
NREL	National Renewable Energy Laboratory
OATT	Open Access Transmission Tariff
O&M	Operations and Maintenance
Planning Forecast	a mid load-growth projection
Planning Period	2024-2043
Planning Reserve	available capacity above the projected peak demand
PPA	Purchased Power Agreement
PRM	Planning Reserve Margin
PV	photovoltaic
PY	plan year
QF	Qualifying Facility
RFI	Request for Information
RFP	Request for Proposals
RICE	Reciprocating Internal Combustion Engine
RPS	Renewable Portfolio Standard
RTO	Regional Transmission Organization
RTU	Remote Terminal Units
SAWG	Supply Adequacy Working Group

Acronym/Defined Term	Meaning
SMRs	Small Modular Reactors
SPS or the Company	Southwestern Public Service Company, a New Mexico corporation
Staff	Utility Division Staff of the Commission
Statement of Need	description and explanation of the amount and technical characteristics of new resources necessary to reliability meet electricity demand during the Planning Period
STG	Steam Turbine Generator
TAHA	Transmission Asset Health Analytics
TOU	Time of Use
VOM	Variable Operations and Maintenance
VFDs	variable frequency drives
Xcel Energy	Xcel Energy Inc.

Executive Summary

Southwestern Public Service Company[1] ("SPS") is pleased to present our 2023 Integrated Resource Plan ("2023 IRP"), which charts a path for establishing a foundation for reliable and affordable energy to continue to serve the growing economy in our service territory while meeting State and SPS energy policy objectives. It is SPS's privilege to support economic growth in New Mexico and across the area it serves, with this 2023 IRP providing multiple pathways to meet that need reliably and affordably, while also reducing carbon emissions. The 2023 IRP furthers economic achievement of New Mexico's goals. Critically, it is the product of a robust and successful facilitated stakeholder process, which scoped and refined the development of this plan under the new IRP Rule developed by the New Mexico Public Regulation Commission ("Commission").

Combining SPS's work and the robust stakeholder process, this 2023 IRP identifies the most cost-effective portfolios to meet our customers' energy and capacity needs over the 20-year Planning Period ("2024-2043"). These portfolios of resources, based on generic pricing, evaluate three different load forecast potentials and leverage four different technology cost and deployment assumptions as well as include alternative portfolios developed in collaboration with stakeholders. These portfolios build the groundwork for our next Request for Proposals ("RFP") for new generation resources that will facilitate the continued

[1] Southwestern Public Service Company, a New Mexico corporation

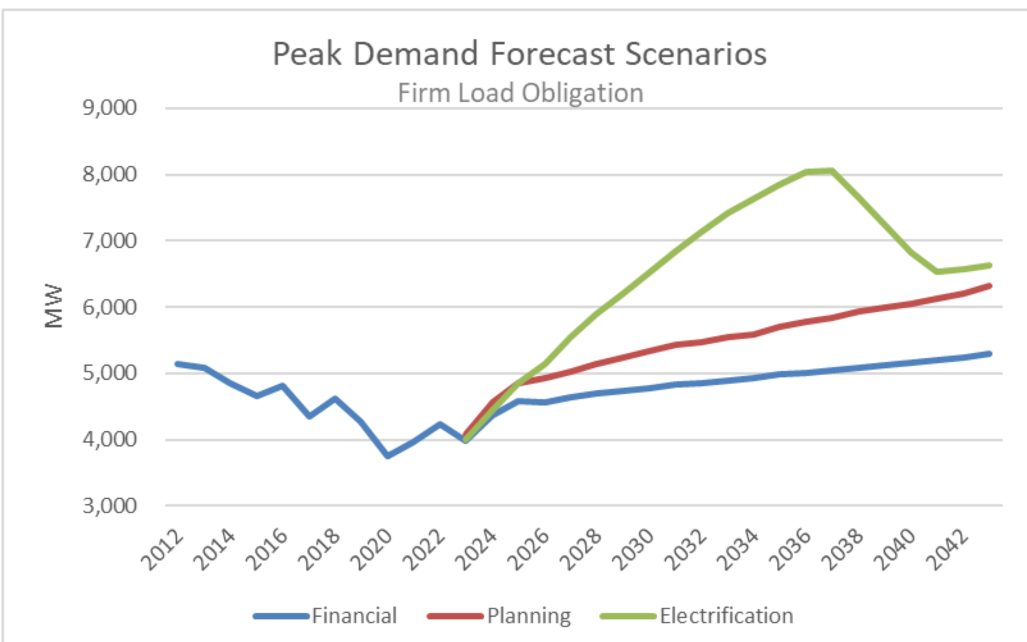
retirement of our aging fleet and coal plants while maintaining reliable and affordable service for our customers.

The IRP continues the progress SPS has made, which is perhaps best demonstrated by SPS's recent application to the Commission for approval to build an additional 418 megawatts ("MW") of cost-effective new solar generation and the addition of our first battery energy storage resources in the region. In addition, this IRP shows that SPS is well-positioned to continue complying with New Mexico's Renewable Portfolio Standard ("RPS") through the Action Plan Period (2024-2026). SPS has also made extraordinary progress in meeting the State's carbon emission reduction goals, reporting that as of last year SPS's carbon emissions had decreased 52% when compared with 2005 levels. Against that backdrop, SPS's objective in the 2023 IRP is to lay the groundwork for a portfolio of resources that:

- Maintains reliability and resiliency;
- Meets the Renewable Portfolio Standard requirements to the best of SPS's ability;
- Supports projected load growth and secures replacement energy and capacity for retiring resources;
- Furthers diverse economic development in the State;
- Meets evolving resource adequacy requirements;
- Prioritizes affordability for all SPS customers, including residential and low-income customers, as the system transitions;

- Provides a just and orderly transition for our workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements; and
- Engages customers to help the utility reliably serve during grid constrained events.

To solve for these goals under different growth scenarios, SPS presents three load forecasts that show: (1) a conservative or low load-growth projection (referred to as the "Financial Forecast"); (2) a mid load-growth projection (the "Planning Forecast"); and (3) a stakeholder-driven high load-growth forecast (the "Electrification Forecast").[2] Based on these forecasts, and as shown below, SPS projects a summer peak demand between 4,771 MW and 6,517 MW by 2030.



[2] The Electrification Forecast reflects substantial input and engagement from key stakeholders, including our customers, with regard to future business and investment plans in the State. We intend to continue engagement with these stakeholders to ensure the Electrification forecast, or high end of the range, reflects the best available information.

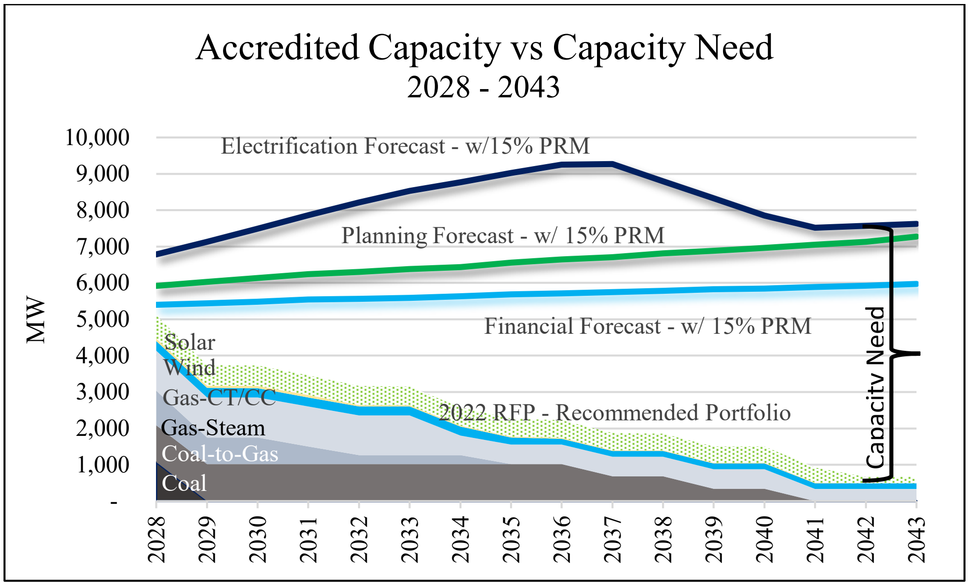
As shown below, these load forecasts—in combination with planned retirements of existing assets, and conclusion of purchased power agreements—drive our capacity need and potential resource acquisitions. Specifically, this IRP establishes that SPS is likely to have a significant generation need in the years 2028-2030 and beyond. In addition to SPS's existing and currently planned resources, including resources added through 2027 as part of the 2021 IRP Action Plan, SPS has a remaining capacity need ranging from 1,760 MW to 3,963 MW by 2028-2030, depending on planning assumptions. SPS will therefore need to acquire between 5,324 MW to 10,211 MW of new resources between 2028 and 2030. Based on generic pricing, SPS has the potential to need the following resources through 2030:

- A range of 4,281 MW to 6,631 MW of new clean energy resources (wind and solar);
- A range of 1,043 MW to 4,290 MW from dispatchable resources (i.e., resources that can be called upon at any time); including
- Dispatchable storage resources ranging from 10 MW to 4,290 MW (depending on planning assumptions).

Looking further out into the future, economic growth and associated load growth are expected to continue, as reflected in the figure below. More specifically, SPS's resource needs are projected to range from 12,595 MW to 23,610 MW of installed capacity through the end of the Planning Period. Based on generic pricing, SPS has the potential to require the following resources to meet this projected need:

- 7,799 MW to 13,859 MW of new clean energy resources;

- 4,470 MW to 11,200 MW of dispatchable resources; including
- Dispatchable storage resources ranging from 130 MW to 11,200 MW.



The primary challenge SPS will face during the Action Plan Period (2024-2026) and through 2030 is meeting the growing needs of customers and the economy in our service territory with generation resources that satisfy RPS requirements while (1) maintaining and protecting the safety, reliable operation and balancing of loads and resources on the electric system; and (2) managing impacts to customer bills. The load growth in SPS's New Mexico service territory continues to increase at a rapid pace due in large part to the anticipated electrification of the oil and gas production industry and siting of other large loads within our territory.

SPS's existing generation portfolio is expected to experience unprecedented changes over the Planning Period, such as:

- **Cessation of coal-fired generation.** SPS intends to entirely cease coal operations by the end of 2028. First, as approved in Case No. 21-00200-UT, SPS's Harrington Generating Units will be converted to operate exclusively on natural gas at the end of 2024. Furthermore, Harrington units 1, 2, and 3 are scheduled to retire in 2036, 2038, and 2040. Second, as requested in Case No. 22-00286-UT[3], SPS's other coal-fired plant, Tolk Station, is scheduled to be retired at the end of 2028.
- **Aging gas steam resources.** Since the 2021 IRP, SPS has retired four aging gas-steam generating units—Plant X Unit 3 was retired in 2022, after 67 years of operation, and Plant X Unit 1, Plant X Unit 2, and Cunningham Unit 1 are planned to retire in 2023 after between 66 and 71 years of service. In addition, SPS's entire remaining 1.4 GW portfolio of existing gas steam generating units are scheduled to retire within the Planning Period.

These changes lead SPS to need to:

- **Capture economic renewable energy resources and federal benefits.** Each of SPS's most cost-effective portfolio of resources and alternative portfolios discussed in this 2023 IRP include a substantial build-out of new renewable energy resources to achieve New Mexico's renewable portfolio standards while meeting projected load growth and replacing the retiring coal and gas-steam units described above. Adding these resources in a timely manner is particularly important because, since SPS filed our last

[3] Under consideration in SPS's current rate case, Case No. 22-00286-UT.

IRP, the federal Inflation Reduction Act was passed, extending and expanding the availability of federal tax credits for such renewable energy resources.

- **Identify viable emerging technologies.** Although SPS's modeling shows a substantial build-out of new renewable energy resources, dispatchable resources are required to maintain system reliability and energy at times when intermittent resources, such as wind and solar, are not available. Currently, lithium-ion battery energy storage is the predominate commercially available, carbon-free, dispatchable technology. However, as SPS works towards New Mexico's 2045 carbon-free goal, it will need emerging alternative dispatchable technologies to achieve that goal while maintaining affordability.
- **Begin planning for upgraded transmission and distribution networks**. The transition of SPS's generation fleet—along with projected load growth and expansion of distributed energy resources—will require upgrades to SPS's transmission and distribution networks to facilitate the deployment of new renewable energy resources. The details of the necessary upgrades will be determined over time, and in collaboration with the Commission, the Public Utility Commission of Texas, Southwest Power Pool, and stakeholders. As relevant to this IRP, SPS will assess the need for any transmission upgrades after receiving generation bids in the RFP process.

The filing of this 2023 IRP is the culmination of a robust and collaborative six-month stakeholder engagement process. But it is just the beginning of the next phase of work for SPS to meet the energy and capacity needs of our customers while achieving State and SPS energy policy objectives and maintaining reliability and affordability. As outlined in our Action Plan, following the conclusion of this IRP process SPS will issue an all-source RFP that will identify and lead to the procurement of the most cost-effective and reliable portfolio of resources to meet the generation need. And, while the six-month stakeholder engagement required by the IRP Rule has concluded, SPS is committed to continuing that engagement throughout the Action Plan Period and beyond.

The discussion that follows in this plan tracks the new IRP Rule from the Commission, culminating in the Statement of Need, presentation of modeled portfolios, and the Action Plan for this 2023 IRP. SPS is proud to present this robust plan to the Commission for review, and thanks the efforts of the stakeholders for their role in creating this plan to buttress and accelerate the economy in New Mexico and beyond.

Section 1. INTRODUCTION

1.01 Overview of SPS and the IRP

SPS is a New Mexico corporation and a wholly-owned electric utility subsidiary of Xcel Energy Inc. ("Xcel Energy"). SPS's total company service territory encompasses approximately 52,000-square-mile area in eastern and southeastern New Mexico, the Texas Panhandle, and the Texas South Plains. SPS's primary business as an electric utility is generating, transmitting, distributing, and selling electric energy. SPS provides retail electric services in New Mexico and Texas and serves approximately 403,400 customers and 96 communities in its two-state system. SPS serves approximately 126,100 customers and 16 communities in New Mexico. SPS's electric system is composed of 24 power plant generating units, eleven of which are located in New Mexico. SPS is a member of the Southwest Power Pool, Inc. Regional Transmission Organization and is synchronously connected to the Eastern Interconnection.

As part of SPS's commitment to providing reliable and affordable service to its growing customer base, SPS, a wholly-owned subsidiary of Xcel Energy presents this 2023 Integrated Resource plan ("2023 IRP") in accordance with the Efficient Use of Energy Act (NMSA 1978, § 62-17-1, et seq., "EUEA") and 17.7.3 NMAC (the "IRP Rule"). SPS's 2023 IRP: (i) provides a description and explanation of the amount and technical characteristics of new resources necessary to reliably meet projected electricity demand ("Statement of Need"); (ii) identifies the most reasonable, cost-effective resource portfolios to meet all applicable regulatory requirements and to supply the energy needs identified in the Statement of Need; and (iii) provides an Action Plan[4] discussing 2023 IRP implementation during the Action Plan Period ("2024-2026").

SPS developed its 2023 IRP by synthesizing studies, forecasts, regulatory predictions, and information exchanged through a series of facilitated stakeholder meetings[5] ("Facilitated Stakeholder Process"), combined with historical data, existing and potential resource capabilities, and generic costs associated with alternative generation resource expansion plans. SPS's analysis considered system operability and reliability, applicable regulatory requirements, and both short- and long-term least-cost impacts to customers, while balancing the ability to deliver the expected level of service. The goal of SPS's 2023 IRP was to develop a reliable, robust, cost-effective, and environmentally focused generation expansion plan.

Most importantly, the resource plan is presented based on the best information available at this time and, in concert with stakeholder input, reasonable assumptions that could be useful in evaluating long-term system resource projects. However, this also means that SPS will have to be flexible in resource plan execution over the Action Plan and Planning Period as new information becomes available and technologies evolve, all while recognizing the inherent uncertainty of long-term forecasting and resource planning. As discussed in the Action Plan in Section 10 below, SPS intends to issue an RFP in 2024, consistent with SPS's

[4] Defined in the IRP Rule as the proposed process and specific actions the utility shall carry out to implement the integrated resource plan spanning a three-year period following the filing of the utility's integrated resource plan.
[5] Defined in the IRP Rule as the statutory public advisory process pursuant to Section 62-17-10 NMSA 1978, conducted by a commission appointee to facilitate advisory discussions among stakeholders, including members of the public, to advise the public utility and reach potential agreement in the utility's development of its statement of need and action plan.

model PPA terms and pricing requirements, for the necessary new generating resources.

1.02 Facilitated Stakeholder Process

The rule amended in 2022 added the requirement of a Facilitated Stakeholder Process (17.7.3.9 NMAC). After SPS filed its Notice of Intent to file its IRP in 2023, the Commission appointed Gridworks as the facilitator for the Facilitated Stakeholder Process. During the Facilitated Stakeholder Process, Gridworks and SPS held eight stakeholder meetings, plus several interim meetings, between May and October of 2023. Seventy-eight organizations were represented in the meetings, including state and county officials from New Mexico and Texas; New Mexico state legislators; private industry; nonprofit groups; federal agencies; and research organizations. Section 11 of this document provides more details regarding the Facilitated Stakeholder Process.

1.03 Organization of the IRP

The remainder of the IRP is organized as follows: (i) Section 2 provides a background; (ii) Section 3 discusses existing supply- and demand-side resources, and reserve margin/reliability requirements, (iii) Section 4 provides SPS's current load forecast; (iv) Section 5 presents SPS's Loads and Resources ("L&R") table for the Planning Period; (v) Section 6 addresses new load and facilities arising from special service agreements, economic development projects, and affiliate transactions; (vi) Section 7 identifies the resource options; (vii) Section 8 presents the Statement of Need; (viii) Section 9 presents a determination of the most cost-effective resource portfolio and alternative portfolios; (ix) Section 10 presents

SPS's Action Plan; and (x) Section 11 discusses the Facilitated Stakeholder Process.

Appendix N provides a "roadmap" of the IRP Rule requirements and where SPS addresses each item in this filing.[6]

[6] SPS filed a Motion for Protective Order on September 21, 2023. When a Protective Order is issued, SPS will submit any confidential information supporting this 2023 IRP under the terms of that order. Confidential information will be provided to the Commission's Records Department and will be provided to parties executing a non-disclosure agreement upon the granting of a Protective Order.

Section 2. IRP RULE REQUIREMENTS AND PROCESS

This section describes the Commission's IRP rules and processes that govern SPS's IRP filing and the facilitated stakeholder process that SPS has conducted since the filing of its Notice of Intent on March 1, 2023.

2.01 IRP Content Rule Requirements

The rule governing the IRP and the IRP process—NMAC 17.7.3—was amended in 2022. Under that rule, the objective of the IRP is to identify the most cost-effective portfolio of resources to supply the energy needs of customers consistent with the Commission's statutory obligations to ensure fair, just, and reasonable rates. In proposing cost-effective resources, utilities shall prioritize those that best comply with the state's requirements for reducing carbon dioxide emissions, fostering equitable clean energy development, and grid modernization (17.7.3.6 NMAC).

Specifically, the IRP Rule requires that affected utilities provide the following details (17.7.3.8(B) NMAC):

(1) description of existing electric supply-side and demand-side resources;

(2) current load forecasts;

(3) load and resources tables;

(4) new load and facilities arising from special service agreements, economic development projects, and affiliate transactions;

(5) identification of resource options;

(6) statement of need;

(7) determination of the resource portfolio; and

(8) action plan.

2.02 Facilitated Stakeholder Process Rule Requirements

The 2022 amendments to the IRP Rule added the requirement of a Facilitated Stakeholder Process (17.7.3.9 NMAC). Specifically, the IRP Rule requires that the utility notify the Commission, members of the public, the New Mexico attorney general, and all parties to its most recent base rate case and most recent IRP case of its intent to file an IRP. The Commission, upon notification, shall initiate a facilitated process for the utility, Commission utility division staff, and stakeholders to reach a potential agreement on a proposed statement of need pursuant to 17.7.3.10 NMAC and an action plan pursuant to 17.7.3.11 NMAC.

The rule describes the process for the Commission's selection of facilitator, funding for the facilitator and modeling software access.

Not later than six months after the facilitated stakeholder process commences, the utility shall file the IRP with the Commission, explaining all resolved and unresolved issues resulting from the facilitated process.

(1) Written public comments may be filed within 30 days of the utility's filing of the IRP.

  (a) Written public comments may include the commenter's own draft statement of need and action plan for commission review.

  (b) Written public comments shall be made part of the utility's IRP as addendums.

(2) The utility shall file, within 60 days of the utility's filing of the IRP, a written response to all timely filed written public comments, stating whether it adopts any of the written comments as amending the IRP and the reasons why or why not.

(3) The Commission's utility division staff shall consider the filed written public comments and the utility's written responses and shall file a statement with the Commission within 90 days of utility's filing of the IRP as to whether the statement of need and action plan comply with the policies and procedures of this rule.

(4) If the Commission has not acted within 120 days of the filing of the IRP, the statement of need and action plan are deemed accepted as compliant with this rule. If the Commission determines that the statement of need or action plan do not comply with the requirements of this rule, the Commission shall identify the deficiencies and return it to the utility with instructions for re-filing.

Section 3. DESCRIPTION OF EXISTING RESOURCES

This section provides a description of SPS's existing generation, transmission, and distribution resources and assets, including SPS-owned generation facilities, qualifying facilities, purchase power agreements, distributed generation, energy storage, reserve margin and reliability requirements, transmission and distribution capabilities, environmental impacts, back-up fuel options, and critical infrastructure and extreme weather preparedness.

3.01 Categories of Resources (Load Modifying, Renewable Load Serving, Conventional Load Serving, Grid Balancing)

The mandate of the Energy Transition Act to incorporate 80% renewable energy onto the grid by 2040[7] requires utilities operating in New Mexico to develop flexible management of grid resources. Utilities may categorize resources into the following four functional groups to reflect their role in serving this need:

(1) load modifying resources – includes but not limited to energy efficiency, distributed generation, and time of use tariffs;

(2) renewable load serving resources – includes both utility scale solar and wind technologies;

(3) conventional load serving resources – includes coal, nuclear, and gas technologies; and

(4) grid balancing resources – includes demand response, storage technologies, natural gas combustion engines, and reciprocating engines.[8]

[7] No later than January 1, 2040, renewable energy resources shall supply no less than eighty percent of all retail sales of electricity in New Mexico; provided that compliance with this standard until December 31, 2047, shall not require the public utility to displace zero carbon resources in the utility's generation portfolio on the effective date of this 2019 act. NMSA 1978 § 62-16-4(A)(5).

[8] See 17.7.3 NMAC, Appendix A, Description of Existing Resources, Section A.

SPS describes existing resources for the categories in the subsections below: (1) load modifying resources in subsections 3.06 (energy efficiency and demand-side management), 3.07 (distributed generation) and 7.01 (time of use tariffs), (2) renewable load serving resources in subsections 3.02 and 3.03, (3) conventional load serving resources in subsection 3.02, and (4) grid balancing resources in subsections 3.02 and 3.03.

3.02 Description of Existing SPS-Owned Load-Serving Resources

SPS serves load on its integrated system in both New Mexico and Texas with supply-side thermal and renewable generating resources located in each state. SPS's supply-side thermal resources had a 2022 summer generation capacity of 4,282 MW. In addition, as shown in Table 3-1 (next page), SPS owns and operates two wind generating facilities with a total installed capacity of 1,000 MW.

The names, locations, rated capacities (MW), fuel types, heat rates (Btu/kWh[9]), annual capacity factors, and availability factors projected are provided in Table 3-1 (next page). Table 3-1 also contains cost information including capital costs (gross plant balance), Fixed and Variable Operation and Maintenance costs ("FOM" and "VOM"), and fuel costs[10] as well as currently scheduled retirement dates.

[9] British Thermal Unit / kilo-watt hour

[10] See 17.7.3 NMAC, Appendix A, Description of Existing Resources, Section B(1-4). There are no purchased power costs for SPS-owned resources as contemplated by 17.7.3 NMAC, Appendix A, Description of Existing Resources, Section B(4).

Table 3-1: Location, Rated Capacity, Retirement Date, Cost Data, Heat Rate, Capacity Factor, and Projected Availability Factor for all Owned Generating Units

Southwestern Public Service Company
Location, Rated Capacity, Retirement Date, Cost Data, Heat Rate and Capacity Factor for all Owned Generating Units

Unit Name	Location	Rated Capacity (MW)	Expected Retirement Date	Capital $ (Gross plant) 2022	O&M $ 2022	Fuel $ 2022	Net Unit Heat Rate (Btu/kWh)	Net Capacity Factor	Availability Factors Projected
Renewable Load Serving Resources:									
Wind									
Hale	Hale Co, TX	478	2044	$ 685,983,275	$ 6,359,493	$ -	N/A	51%	50%
Sagamore	Roosevelt Co, NM	522	2045	$ 808,237,655	$ 11,925,981	$ -	N/A	46%	48%
Conventional Load Serving Resources:									
Coal									
Tolk Unit 1*+	Bailey Co., TX	532	2028	$ 330,393,576	$ 18,614,552	$ 58,156,464	10,964	23%	43%
Tolk Unit 2*+	Bailey Co., TX	537	2028	$ 369,861,921			10,509	32%	43%
Coal to Gas Conversions									
Harrington Unit 1	Potter Co., TX	340	2036	$ 176,191,932	$ 25,141,113	$ 89,328,440	10,771	42%	88%
Harrington Unit 2	Potter Co., TX	355	2038	$ 184,667,317			10,906	47%	88%
Harrington Unit 3	Potter Co., TX	355	2040	$ 202,757,261			10,655	59%	87%
Gas									
Cunningham Unit 1*	Lea Co., NM	0	2023	$ 17,969,412	$ 5,759,998	$ 38,618,624	12,896	4%	
Cunningham Unit 2	Lea Co., NM	183	2027	$ 45,151,922			10,423	40%	77%
Jones Unit 1	Lubbock Co., TX	243	2031	$ 59,143,245	$ 9,272,913	$ 73,986,461	11,089	22%	89%
Jones Unit 2	Lubbock Co., TX	243	2034	$ 49,227,503			11,165	25%	85%
Maddox Unit 1	Lea Co., NM	112	2028	$ 53,564,529	$ 3,811,297	$ 14,612,420	10,193	23%	80%
Nichols Unit 1*	Potter Co., TX	107	2028	$ 26,226,301	$ 11,348,946	$ 59,478,062	11,661	24%	93%
Nichols Unit 2*	Potter Co., TX	106	2027	$ 27,809,280			11,622	25%	94%
Nichols Unit 3	Potter Co., TX	244	2030	$ 67,314,335			12,195	12%	86%
Plant X Unit 1*	Lamb Co., TX	0	2023	$ 13,603,574	$ 7,141,298	$ 34,190,363	17,971	2%	
Plant X Unit 2*	Lamb Co., TX	0	2023	$ 24,651,774			13,413	3%	
Plant X Unit 4	Lamb Co., TX	189	2027	$ 46,542,175			11,103	29%	88%
Fuel Oil									
Quay	Quay Co., NM	17/23	2034	$ 26,520,416	$ 248,251	$ 81,393	17,819	0.08%	
Grid Balancing Resources:									
Cunningham Unit 3	Lea Co., NM	106	2040	$ 46,738,170	$ 570,985	$ 34,167,507	12,259	18%	88%
Cunningham Unit 4	Lea Co., NM	101	2040	$ 43,756,728			12,140	33%	84%
Jones Unit 3	Lubbock Co., TX	166	2056	$ 88,465,938	$ 792,532	$ 37,883,028	10,999	18%	92%
Jones Unit 4	Lubbock Co., TX	170	2058	$ 83,827,120			10,807	19%	92%
Maddox Unit 2	Lea Co., NM	62	2028	$ 24,854,870	$ 312,347	$ 8,161,559	13,733	20%	78%

Note (1) The O&M $ are reported by plant
Note (2) Fuel $ is measured at the plant level
Note (3) SPS plans on converting the Harrington Units to operate on natural gas end of year 2024
Note (4) Hale 2022 O&M total includes $4,175,272 in Liquidated Damage credits
Note (5) Sagamore 2022 O&M total includes $1,618,989 in Liquidated Damage credits
* Retirement dates align with SPS's requests in 22-00286-UT
+ Availability Factors Projected based on 4,000GWh limit

3.03 Purchased Power Agreements – Capacity, Fuel Type, Contract Duration

In addition to SPS's owned generation, SPS currently has long-term Purchased Power Agreements ("PPA") totaling 2,421 MW of nameplate capacity and associated energy. SPS purchases 778 MW of conventional load serving resources and 1,643 MW of renewable load serving resources. These resources serve SPS's entire system. Table 3-2 lists the nameplate capacity, commercial operation date, expiration date, and fuel type for each long-term PPA under which SPS currently purchases capacity and/or energy. Cost information for PPAs can be found in Appendix A.

Table 3-2: PPA Capacity, COD, Expiration Date and Fuel Type

Name	Nameplate Capacity (MW)	Commercial Operation Date	Expiration Date	Fuel Type
Conventional Load Serving Resource				
Blackhawk Station Simple Cycle Combustion Turbines	220	1999	2026	Gas
Lea Power Partners Combined Cycle	558	2008	2033	Gas
Grid Balancing Subtotal	778			
Renewable Load Serving Resource				
Caprock Wind	80	2004	2024	
San Juan (Padoma) Wind	120	2005	2025	
Wildorado Wind	161	2007	2027	
Spinning Spur Wind	161	2012	2027	
Mammoth Wind	199	2014	2034	
Palo Duro Wind	250	2014	2034	
Roosevelt Wind	250	2015	2035	
Lorenzo Wind (Bonita I)	80	2018	2048	
Wildcat Wind (Bonita II)	150	2018	2048	
Sun Edison Solar	50	2011	2031	
Chaves Solar	70	2016	2041	
Roswell Solar	70	2016	2041	
SoCore Clovis 1 LLC[1]	1.98	2021	2041	
Renewable Load Serving Subtotal	1,643			
Total Firm (PPAs)	2,421			

[1] The SoCore Facility is utilized for SPS's Voluntary Renewable Energy Program in New Mexico, referred to as Solar*Connect.

Additionally, SPS plans to file for PPA approval for the following projects in the fourth quarter:

(1) A 20-year LTPPA with Borger Energy for 230 MW of power from the Blackhawk station; and

(2) A 15-year LTPPA for access to a 48-MW battery.

Table 3-3: CCN PPA Capacity, COD, Expiration Date and Fuel Type

Name	Nameplate Capacity (MW)	Commercial Operation Date	Contract Term (Years)	Fuel Type
Conventional Load Serving Resource				
Blackhawk Station Simple Cycle Combustion Turbines	230	1999	20	Gas
Grid Balancing Subtotal	230			
Renewable Load Serving Resource				
LTPPA BESS	48	2026	15	
Renewable Load Serving Subtotal	48			
Total Firm (PPAs)	278			

Figure 3F.1 below provides a regional map of the SPS generation resources that are greater than 2 MW (owned and PPAs). A regional map of SPS's transmission system is also provided in Appendix D.

Figure 3F.1: SPS Existing Generation Fleet (Owned and PPAs)

3.03 (a) SPS Qualifying Facilities

In addition to SPS's owned and long-term PPAs, SPS also purchases energy from five Qualifying Facilities ("QF"), with a total nameplate capacity of 106 MW, that are put to SPS under the Public Utility Regulatory Policy Act of 1978. Per SPS's New Mexico Rate No. 4 or the Texas Electric Tariff Sheet No. IV-117 (Rev. No. 4) a QF that chooses to sell energy to SPS under these Rates/Tariffs, must execute the standard Purchase Agreement. See Table 3-4 below for a list of SPS QF Wind facilities.

Table 3-4: QF Wind

QF Wind	Nameplate Capacity (MW)	Commercial Operation Date
Ralls Wind	10	07/20/2011
Cirrus Wind	61.2	12/12/2012
Pantex Wind	11.5	06/20/2014
Pleasant Hills Wind	19.8	06/04/2014
West Texas A&M	3.51	11/11/2013

In addition, SPS historic cost (calendar year 2022) information regarding each of the long-term PPAs and QFs is provided in Appendix A.

3.04 Estimated In-Service Dates for Owned Generation Facilities for Which Certificates of Convenience and Necessity Have Been Granted but Which are Not In-Service

Currently, SPS has no new generating resources under construction for which Certificates of Convenience and Necessity ("CCN") have been granted. However, in pending Case No. 23-00252-UT, SPS has filed for CCN approval for the following projects:

Table 3-5: Company Owned Filed CCN Projects

Resource	Structure	Resource Type	Maximum Capability	Location	Estimated ISD
Plant X Solar Project	Self-build	Solar	150 MW	Lamb County, Texas	April 2026
Cunningham 1 Solar Project	Self-build	Solar	72 MW	Lea County, New Mexico	April 2026
Cunningham 2 Solar Project	Self-build	Solar	196 MW	Lea County, New Mexico	April 2027
Cunningham 1 Battery Project	Self-build	BESS *	36 MW	Lea County, New Mexico	April 2026

* Battery Energy Storage System

3.05 Amount of Capacity and Energy Purchased Via Regional Energy Markets

SPS is a member of the Southwest Power Pool, Inc. Southwest Power Pool is one of nine Independent System Operators ("ISO") and Regional Transmission Organizations ("RTO") in North America. Southwest Power Pool's Integrated Marketplace is the mechanism through which it facilitates the sale and purchase of electricity to ensure cost-effective electric reliability throughout a 14-state region in the Eastern Interconnect. As a Balancing Authority, Southwest Power Pool balances electric supply and demand, ensuring there is adequate generation to meet the demand. Southwest Power Pool is responsible for generation unit commitment and dispatch across the Southwest Power Pool footprint. Additionally, Southwest Power Pool administers the day-ahead and real-time balancing market, including incorporation of a price-based operating reserve market (i.e., regulation up/down and spin/supplemental reserves). SPS has a market import capability limit of approximately 1,950 MW from the Southwest Power Pool, minus its largest single contingency. In 2022, in addition to the production from SPS's own generating units and purchased power agreements, SPS purchased an additional 3,162,114 MWh from other entities within the Southwest Power Pool, to meet its native load. SPS does not currently purchase any capacity from other entities within the Southwest Power Pool.

3.06 Existing Demand-Side Resources - Deployed at Time of IRP Filing and Approved by Commission but Not Yet Deployed

The IRP Rule specifically requests that the utilities detail their existing demand-side resources in their IRP filing.[11] Demand-side resources are defined in the IRP Rule as storage, responsive distributed generation, and loads engaged in demand response programs that can support the grid by responding to market signals or direct load control.[12] Appendix A to the IRP Rule describes load modifying resources as including but not limited to energy efficiency, distributed generation, and time of use tariffs. Energy efficiency and demand-side management are discussed in this section. Distributed generation is discussed in Section 3.07 and time of use tariffs are discussed in Section 7.01. SPS does not have any demand-side resources approved but not yet deployed.

In this section, SPS refers to energy efficiency and load management programs as Demand-Side Management ("DSM") resources. Energy efficiency ("EE") is defined in the IRP Rule as "measures, including energy conservation measures, or programs that target consumer behavior, equipment or devices to result in a decrease in consumption of electricity without reducing the amount or quality of energy services."[13] Load Management ("LM") is defined as "measures or programs that target equipment or devices to decrease peak electricity demand

[11] See 17.7.3 NMAC, Appendix A, Description of Existing Resources, Section B (9).
[12] Rule 17.7.3.7.D NMAC
[13] Rule 17.7.3.7.E NMAC.

or shift demand from peak to off-peak periods.*”*[14] SPS offers DSM resources in both New Mexico and Texas in accordance with state-specific- rules and laws.[15]

New Mexico DSM

SPS must annually report the energy and demand saved for the previous calendar year and receive approval of its forward looking plans every three years to continue towards its statutory goals. SPS’s 2022 EE Triennial Plan approving Plan Years 2023-2025 was approved in Case No. 22-00124-UT on March 8, 2023.[16] SPS will continue its approved Triennial Plan through Plan Year 2025. Previous plans were approved for calendar years 2011 – 2025 in Case Nos. 11-00400-UT, 13-00286-UT, 15-00119-UT, 16-00110-UT, 17-00159-UT, 18-00139-UT, 19-00140-UT, and 22-00124-UT respectively. Table 3-6 below describes SPS’s EE first-year incremental energy and demand savings (achievements) under the EUEA. That is, the table reflects only the savings achieved during the first year of customer participation in a program.

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[14] Rule 17.7.3.7.L NMAC.

[15] DSM costs are directly assigned by jurisdiction.

[16] *In the Matter of Southwestern Public Service Company’s Triennial Energy Efficiency Plan Application Requesting Approval of: (1) SPS’s 2023-2025 Energy Efficiency Plan and Associated Programs; (2) A Financial Incentive for Plan Year 2023; and (3) Continuation of SPS’s Energy Efficiency Tariff Rider to Recover Its Annual Program Costs and Incentives*, Case No. 22-00124-UT, Final Order Adopting Recommended Decision (Mar 8, 2023).

Table 3-6: New Mexico EE Achievements for Plan Years 2013-2022

Year	Customer kW[17] Saved	Customer kWh Saved
2013	8,056	37,674,221
2014	8,873	30,492,802
2015	10,716	35,225,196
2016	8,486	34,384,659
2017	8,476	33,191,039
2018	7,539	42,841,455
2019	9,415	39,420,766
2020	7,404	46,980,168
2021	17,730	50,209,534
2022	8,792	61,560,890

At the time of this IRP filing, SPS is offering the following approved DSM programs to its New Mexico customers (designated by "EE" for energy efficiency and "LM" for load management).

Residential Segment:

- Home Energy Insight ("HEI") (EE) – Previously known as Energy Feedback, HEI is a free service offered to SPS residential customers designed to help them save energy and money by providing targeted Home Energy Reports ("HERs"). The report compares a customer's energy consumption to similar nearby households for benchmarking an individual household's performance. HEI provides personalized tips to demonstrate how much customers can save by changing their behavior. Participants receive free monthly emails or quarterly printed reports. Customers also can log on to the My Energy website where they can take a home audit, customize an action plan and get energy efficiency tips. To administer the HEI program, SPS works with a third-party implementer that helps utilities meet their efficiency goals through effective customer engagement. The average effective useful life for the HEI program is 1 year.

- Residential HVAC (Residential and Low-Income) (EE) – The Residential HVAC[18] program, previously known as Residential Cooling, provides a rebate to SPS residential and low-income customers who purchase qualifying evaporative cooling and heating, ventilation, and air conditioning

[17] kilowatt.
[18] Heating, ventilation, and air conditioning.

equipment for residential use. This program will also work with multi-family complexes to replace older inefficient equipment with new HVAC equipment, with an emphasis on serving the low-income units through direct installation where possible. Low Income multi-family complexes are those where the majority of the residents receive government support, receive funds from the Section 8 voucher program or make less than 200% of the poverty guideline. This program strives to increase energy efficiency in homes and apartments by encouraging consumers to purchase high efficiency evaporative coolers, central air conditioning and other HVAC equipment. The average effective useful life for the Residential HVAC program is 15 years.

- Home Energy Services (Residential and Low-Income) ("HES") (EE) – The HES program provides incentives to Energy Efficiency Service Providers ("EESPs" or "contractors") for the installation of a range of upgrades that save energy and reduce costs for existing residential and low-income households. Low-income households are those where the majority of the residents receive government support, receive funds from the Section 8 voucher program or make less than 200% of the poverty guideline. Residential and low-income customers can receive a combination of energy-efficiency and weatherization measures such as insulation, air infiltration reduction, duct leakage repairs, pipe-insulation, energy efficient showerheads, aerators, LED[19] bulbs, and advanced power strips. Additionally, low-income customers will receive an offer through various marketing channels such as email, direct mail, or text message informing them of their eligibility to receive a free Energy Savings Kit. A customer is automatically qualified if they receive energy assistance through a federal program including Low-Income Home Energy Assistance Program (LIHEAP). If the customer chooses to receive a kit, they will send their response to the third-party implementer. Customers will receive a kit within six to eight weeks. The average effective useful life for the Home Energy Services program is 16 years.

- Home Lighting (EE) – This program provides resources for customers to purchase energy-efficient light bulbs and to dispose of fluorescent light bulbs in an environmentally friendly manner. Using energy-efficient bulbs is an easy and inexpensive way for customers to save electricity. The Company provides an avenue for customers to purchase discounted energy-efficient bulbs through local retailers. Customers can also recycle fluorescent bulbs free of charge at various hardware stores. The average effective useful life for the Home Lighting program is 13 years.

[19] Light-emitting Diode

- Heat Pump Water Heaters ("HPWH") (EE) – This program is designed to encourage SPS customers to purchase and install an eligible energy efficient electric HPWH for residential use. HPWHs are the most efficient electric fuel option for customers. The incentive will be available for self-install or professional installation through an HVAC contractor. Following installation, a completed rebate application form and invoice are submitted to SPS. Customers can expect to receive a rebate six to eight weeks after submitting an application. The average effective useful life for the Heat Pump Water Heater program is 10 years.

- School Education Kits (EE) – School Education Kits is a turnkey educational program that combines energy efficiency curriculum for teachers with easy-to-install energy efficiency and water-saving measures for students to install at home. SPS provides the program at no cost and targets its primary product to fifth grade students in its New Mexico service area with this annual program. Beginning in 2023, the Innovation Kits for high school students will include the advanced power strip. The Company added the Innovation Kit to the program in 2022 without the advanced power strip. In addition, the Company will claim savings for nightlights. In the past, the kits included night lights without claiming savings. The average effective useful life for the School Education Kits program is 15 years.

- Residential Thermostat Rewards (EE & LM) – Residential Thermostat Rewards, previously known as Smart Thermostats, enables customers to receive both an energy efficiency rebate for a smart thermostat as well as demand response incentives in the form of bill credits if the customer enrolls in the cooling and/or heating rewards program. In exchange for joining the Residential Thermostat Rewards program, customers allow SPS to call cooling and/or heating demand response events and measure the capacity savings of such events. The Residential Thermostat Rewards offering allows customers to enroll through two channels:

  1) Bring Your Own Thermostat ("BYOT") – customers that already have a qualifying thermostat installed at their residence can enroll it at a Company provided portal or through the thermostat manufacturer's app. BYOT participants receive a one-time enrollment incentive in the form of a bill credit upon joining Residential Thermostat Rewards.

  2) Direct Install – for customers not comfortable installing their own device, the Company can provide and install an ENERGY STAR rated thermostat free of charge.

Customers will also receive an annual bill credit for participating in the program. The average effective useful life for the Residential Thermostat Rewards program is 1 year.

- Residential Codes and Standards (EE) – The Residential Codes and Standards program will pro-actively encourage and support jurisdictions to ensure compliance with the latest state-wide building codes for residential, commercial, and industrial customers. Communities will be given tools and resources to help them realize the economic and energy performance benefits of energy efficient buildings. Support will be designed to meet each jurisdiction where they are in the code adoption and implementation cycle and bring resources to assist with limited code staff time and information on how to ensure compliance as well as resources to address external barriers to increasing code compliance such as misinformation about the costs and benefits and homebuilder awareness and knowledge about how to meet the new codes efficiently and cost effectively. The average effective useful life for the Residential Codes and Standards program is 20 years.

Business Segment:

- Business Comprehensive Program, which is made up of the following components:

  - Cooling Efficiency (EE) – encourages SPS business customers to choose the most efficient air conditioning, refrigeration, or foodservice equipment to meet their needs. The product offers rebates in both new construction and retrofit applications. Rebates reflect a significant portion of the cost of selecting high efficiency measures over standard efficiency measures.

  - Custom Efficiency (EE) – designed to provide SPS's business customers rebates on a wide variety of unique or unusual equipment and process improvements that are not covered by the prescriptive products, including combined heat and power projects. Rebates are offered for measures that exceed the standard efficiency options. The rebate is intended to reduce the incremental project cost of the higher efficiency option, thereby encouraging customers to choose the more energy efficient option. Since energy applications and building system complexity can vary greatly by customer type, it is important for customers to have a customized energy efficiency option to help them implement cost-effective energy efficiency measures.

  - Large Customer Self-Direct (EE) – provides the opportunity for qualifying large customers to either self-direct their own EE projects or opt-out of the EE tariff rider if they can prove they have completed all cost-effective conservation. Self-direct participants of this program are also eligible for the other Business Segment programs.

- Lighting Efficiency (EE) – offers rebates to customers who purchase and install qualifying energy efficient lighting products in existing or new construction buildings. Rebates are offered to encourage customers to purchase energy efficient lighting by lowering the upfront premium costs associated with this equipment. Common lighting retrofit projects include replacing high intensity discharge or fluorescent fixtures with LED fixtures. Retrofit rebates also include networked lighting controls, standalone control rebates for occupancy sensors and photocells which are used for daylight harvesting, and rebates for indoor agricultural lighting projects.

- Motor & Drive Efficiency (EE) – The Motor & Drive Efficiency product is designed to reduce the barriers that prevent customers from purchasing high efficiency motors, variable frequency drives ("VFDs"), motor controls, or compressed air equipment. To overcome these barriers, SPS offers rebates to customers who install:

    - motors that meet the Department of Energy (DOE) efficiency standards for motors;

    - VFDs to vary the speed of motors;

    - motor controllers to reduce the energy consumption of motors that must operate at a constant speed;

    - Pump-Off Controllers on oil wells; or

    - energy efficient compressed air equipment including cycling dryers, dryer purge demand controls, mist eliminators, no loss air drains, and VFD compressors.

- Building Tune-up (EE) – is a study/implementation option designed to assist smaller business customers to improve the efficiency of existing building operations by identifying existing functional systems that can be "tuned up" to run as efficiently as possible through low- or no-cost improvements.

The average effective useful life for the Business Comprehensive program is 16 years.

EE Goals from 2020-2025

The Efficient Use of Energy Act, NMSA 1978, Sections 62-17-1 through 62-17-11 ("EUEA"), as amended in 2019, requires public utilities to develop or obtain cost-effective and achievable EE and load management ("EE/LM") resources in order to reach established energy savings goals. In particular, the amendment requires not less than 5% of SPS's 2020 total retail kWh sales for customer classes that have the opportunity to participate in 2025 (based on energy EE/LM programs implemented in 2021-2025). On July 15, 2021, SPS filed its application in Case No. 21-00186-UT presenting the findings of its EE Potential Study, requesting approval of associated modifications to its approved 2019 Triennial Plan, and approval of revised EE savings goals for plan years ("PYs") 2021 through 2025. SPS proposed a revised EUEA goal for 2025 based on an adjustment to SPS's 2020 total kWh retail sales used to determine the goal. The adjustment excludes kWh sales to certain customers for which there is no corresponding recovery of costs to fund EE programs due to the application of the EUEA's $75,000 per customer EE program cost-recovery cap. Based on the adjusted 2020 kWh retail sales, SPS proposed a revised EUEA energy savings goal for 2025 of 269,769 MWh to be achieved over the period of 2021 through 2025. On March 9, 2022, the Commission issued its Final Order Adopting the Recommended Decision, which approved the Recommended Decision in its entirety.

Table 3-7 below shows SPS's energy savings obligations under the EUEA and the EE Rule as a percent of SPS's adjusted 2020 sales, along with SPS's verified achievements (through 2022), and forecasted savings (2023-2025).

Table 3-7: New Mexico Actual and Forecasted Savings Provided by the 2021-2025 EE Programs

Year	Annual Net Customer Achievement (kWh)	Cumulative Net Customer Achievement (kWh)	Cumulative % of SPS's Goal Requirement
2021 Actual	50,209,534	50,209,534	19%
2022 Actual	61,560,890	111,770,424	41%
2023 Forecast	55,862,105	167,632,529	62%
2024 Forecast	55,390,332	223,022,861	83%
2025 Forecast	55,237,706	278,260,567	103%

EE Goals through 2043

Under the 2019 amendment of the EUEA, SPS is required to achieve no less than savings of 5% of 2020 total retail kWh sales as a result of EE and LM programs implemented in years 2021 through 2025. Note that the EUEA neither requires nor establishes annual goals. Thus, the goals in Table 3-8 below are preliminary and subject to change in SPS's upcoming re-filing of PY 2024 and 2025, Triennial Filing covering PY 2026-2028, and future Triennial Filings covering years 2029-2043.

Table 3-8: Filed and Forecasted New Mexico DSM Goals at the Customer Level for the Planning Period

Year	Demand Savings (kW)	Energy Savings (kWh)
2024	9,535	55,390,332
2025	10,916	55,237,706
2026-2043	10,916	55,237,706

Texas DSM Requirements

SPS offers DSM programs in its Texas service territory pursuant to the Public Utility Regulatory Act and 16 Tex. Admin. Code § 25.181. These programs include standard offer and market-transformation programs for commercial and industrial, LM, residential, and low-income customers limited to customers receiving service at 69 kilovolts or less and all government customers. Table 3-9 below shows SPS's historic demand savings (in MW) and energy savings (in GWh) in its Texas service territory.

Table 3-9: SPS's EE and LM Achievements – 2012 to 2022 in Texas

Year	Customer Demand Savings (MW)	Customer Energy Savings (GWh)
2012	5.30	9.077
2013	5.10	7.950
2014	5.02	11.900
2015	8.17	14.537
2016	8.19	14.451
2017	7.80	16.871
2018	9.57	18.908
2019	9.57	23.328
2020	11.672	25.663
2021	10.057	25.410
2022	8.704	20.367

In addition, SPS offers residential Saver's Switch and Interruptible Credit Option ("ICO") LM programs in Texas (the savings are not included in the table above).

3.07 Existing Distributed Generation

SPS pays incentives under several DG REC purchase tariffs that were originally proposed in Case No. 08-00222-UT to implement five tailored programs:

1. Rate No. 52 (Small Solar Distributed Generation Program)
2. Rate No. 53 (Medium Solar Distributed Generation Program)
3. Rate No. 54 (Large Solar Distributed Generation Program)
4. Rate No. 57 (Small SDG-REC Purchase Program)
5. Rate No. 58 (Medium SDG-REC Purchase Program)
6. Rate No. 62 (3rd Party Small Solar Distributed Generation Program)
7. Rate No. 63 (3rd Party Medium Solar Distributed Generation Program)
8. Rate No. 64 (3rd Party Large Solar Distributed Generation Program)
9. Rate No. 65 (3rd Party Small Biomass Distributed Generation Program)
10. Rate No. 66 (3rd Party Medium Biomass Distributed Generation Program)

Incentive rates and terms have changed over time under revised versions of tariffs. The following summarizes the current tariffs.

Rate No. 52, which applies to small solar systems, offers three incentive payments based on the combined nameplate rating of applications received by SPS for small systems. Under tier 1, customers receive a 13¢ per kWh incentive payment for 12 years until applications received reach a combined nameplate rating of 100 kW. Under tier 2, customers receive a 10¢ per kWh incentive payment for

12 years until applications received reach a combined nameplate rating of 200 kW. Under tier 3, customers receive an 8¢ per kWh incentive payment for 12 years until applications received reach a combined nameplate rating of 300 kW. All three tiers are fully subscribed; SPS pays no incentive to customers who have installed small solar systems after the tiers became fully subscribed.

Rate No. 53, which applies to medium solar systems, offers two incentive payments based on the combined nameplate rating of applications received by SPS for medium systems. Under tier 4, customers receive a 5¢ per kWh incentive payment for 10 years until applications received reach a combined nameplate rating of 500 kW. Under tier 5, customers receive a 4¢ per kWh incentive payment for 10 years until applications reach a combined nameplate capacity of 1,000 kW. Both tiers are fully subscribed; SPS pays no incentive to customers who have installed medium solar systems after the tiers became fully subscribed.

Rate No. 54 applies to large solar systems greater than 100 kW up to 2 MW.

Rate No. 62, which applies to small solar systems owned by a party other than a Customer ("3rd Party"), offers three incentive payments to the 3rd Party based on the combined nameplate rating of applications received by SPS for small 3rd Party systems. Under tier 1, customers receive a 13¢ per kWh incentive payment for 12 years, until applications received reach a combined nameplate rating of 100 kW. Under tier 2, customers receive a 10¢ per kWh incentive payment for 12 years until applications reach a combined nameplate capacity of 200 kW. Under tier 3, customers receive an 8¢ per kWh incentive payment for 12 years until applications received reach a combined nameplate rating of 300 kW.

Rate No. 63, which applies to medium solar systems owned by a party other than a Customer ("3rd Party"), offers three incentive payments to the 3rd Party based on the combined nameplate rating of applications received by SPS for small 3rd Party systems. Under tier 1, customers receive a 13¢ per kWh incentive payment for 10 years, until applications received reach a combined nameplate rating of 500 kW. Under tier 2, customers receive a 10¢ per kWh incentive payment for 10 years until applications reach a combined nameplate capacity of 1,000 kW. Under tier 3, customers receive an 8¢ per kWh incentive payment for 10 years until applications received reach a combined nameplate rating of 1,500 kW.

Rate No. 64 applies to large solar systems greater than 100 kW up to 2 MW.

Rate Nos. 65 and 66 apply to 3rd Party Small and Medium Biomass Distributed Generation Programs. There are no customers under these programs.

The following table shows the number of customers participating in SPS's solar REC purchase programs in 2022:

Table 3-10:Number of Customers Participating in SPS's Solar REC Purchase Programs in 2022

Program	**Customer Count**
Small Solar	52
Medium Solar	45
Large Solar	1
Total	**98**

In addition to these programs, SPS has many DG customers who receive payment for metered amounts of excess generation based on avoided costs, linked to its Qualifying Facilities tariff, Rate No. 4.

3.08 Existing Energy Storage Resources

Currently, SPS has no existing or approved energy storage resources. However, as discussed earlier, in Case No. 23-00252-UT, SPS filed for CCN approval for the Cunningham 1 Battery Project. SPS also expects to file for approval of a battery project PPA as well.

3.09 Reserve Margin and Reserve Reliability Requirements, Calculation Methodology

Planning and Operating Reserves

Each load responsible entity with the Southwest Power Pool must preserve an adequate supply of firm electric generation that will meet the maximum demand of its customers (i.e., the "peak" demand) and provide for unforeseen events (e.g., transmission line outages, generating unit outages, and potential increase in actual load, etc.). To accomplish these objectives, electric utilities acquire (through direct ownership or PPAs) and operate more generation capacity than is needed to meet peak demand. The available capacity above the projected peak demand is typically referred to as the "reserve margin" (i.e., "Planning Reserves"). Generally, there are two basic types of reserves: (i) Planning Reserves, which are the amount of installed capacity required above annual firm peak demand, and (ii) Operating Reserves, which are the amount of generation capacity required in real-time, either with units carrying regulation and/or spinning reserves; or units offline but in warm standby and capable of providing additional electric supply in order to meet real-time changes in load/demand and any unforeseen contingencies (e.g., transmission outage, generator forced outage, gas supply disruption, etc.).

Southwest Power Pool Capacity Reserve Requirements

The Planning Reserve Margin ("PRM") for capacity is set forth in Section 4 of the Southwest Power Pool Planning Criteria.[20] Southwest Power Pool *currently* requires each Load Responsible Entity ("LRE"), such as SPS, to have a PRM of at least 15% of its peak demand forecast (the planning reserve requirement is a minimum requirement, not a maximum or a target). Determination of the PRM is described in Attachment AA[21] of the Southwest Power Pool Open Access Transmission Tariff ("OATT") and is supported by a probabilistic Loss of Load Expectation ("LOLE") Study, which analyzes the ability of the Transmission Provider to reliably serve the Southwest Power Pool Balancing Authority Area's forecasted peak demand. The LOLE Study is performed biennially, and Southwest Power Pool studies the PRM such that the LOLE for the applicable planning year does not exceed one day in ten years, or 0.1 day per year. The Southwest Power Pool has indicated the planning reserve margin may need to increase further to maintain the one day in ten-year reliability metric. Although the Southwest Power Pool has yet to make a formal recommendation, as described in Section 9, SPS conducted sensitivity analyses assuming an 18% summer PRM requirement and a 20% winter PRM requirement.

[20] https://spp.org/Documents/58638/spp%20planning%20criteria%20v2.4.pdf
[21] https://spp.org/Documents/58597/Attachment%20AA%20Tariff.pdf

3.10 Existing Transmission Capabilities

Transmission Facilities

SPS has transmission facilities located in Kansas, New Mexico, Oklahoma, and Texas. SPS owns and operates over 7,900 miles of transmission lines and approximately 260 transmission substations in its service territory. The nominal transmission operating voltages span from 345 kV to 69 kV. A map of SPS's transmission system, including existing transmission facilities 69 kV and up, is provided as Appendix D. Additionally, a map of the SPS transmission system including all associated switching stations, interchanges, and substations, which contains confidential information, is provided as Appendix D-1. Confidential information will be provided to the Commission's Records Department and will be provided to parties executing a non-disclosure agreement upon the granting of a Protective Order.

Annually, SPS hosts a Subregional Planning meeting and reviews recently completed and identified upcoming transmission projects to be built by SPS. The presentation is posted publicly on the Xcel Energy website and is provided as Appendix B. The presentation materials do not cover an exhaustive list of all projects planned for the SPS area in the five-year capital budget; instead, they provide the highest cost or most impactful projects from a customer perspective.

Transfer Capabilities and Capability Limitations

Due to the location of the SPS service area on the edge of the Eastern Interconnect, SPS has set limitations on the ability to import or export power to other regions. SPS has nine individual tie-lines that connect SPS to the rest of the transmission system within the Southwest Power Pool. A limitation, or flowgate, is identified across these ties, and the Southwest Power Pool limits the amount of energy that SPS can import to serve SPS load. SPS's imports are limited to a total of 1,950 MW minus the single largest generation contingency in the SPS area. Additional limitations to the import capability may be applied by the Southwest Power Pool depending on different scenarios including generation outages in the SPS service area and transmission line outages on the tie-lines. This flowgate will limit the amount of generation SPS can reasonably add outside its service territory and use to serve SPS load without additional tie-lines being installed first, which may be quite expensive.

Additionally, the Southwest Power Pool monitors the major SPS owned transmission lines connecting SPS's service territories in Texas to southeast New Mexico and restricts the amount of power flowing on those lines due to voltage concerns in southeast New Mexico. The purpose of this monitored flowgate, with a limit of 890 MWs, is to encourage more generation to be dispatched in southeast New Mexico to alleviate reliability concerns that stem from not having locally sourced generation near the load pocket or additional low impedance transmission lines to import the power. A new transmission line, the Crossroads to Hobbs to Roadrunner double circuit 345 kV line was identified through the 2021 Integrated Transmission Planning ("ITP") assessment at the Southwest Power Pool to help alleviate some of those reliability concerns, as well as to address other reliability and economic concerns. However, significant local load growth is projected in the area and additional transmission facilities and/or local generation will be necessary to address reliability concerns in the future.

Additionally, SPS monitors limitations on the ability to transfer energy from north to south across the SPS region. The limitation, or flowgate, is identified across three 230 kV and two 115 kV transmission lines located in the area south of Amarillo, Texas. The north-south flowgate is limited to a total of 1,645 MW system intact, with limitations to the transferred energy depending on different scenarios including generation dispatch, generation outages, or transmission line outages in the SPS service area. This limitation has been less constraining in the past few years due to renewable generation additions to the southern portion of the system as well as new transmission projects installed that have increased the capacity in this area.

Finally, SPS has three High-Voltage Direct Current (HVDC) connections to utilities that operate on the Western Interconnection. These HVDC connection are rated at approximately 200 MVA each:

- Lamar HVDC: connection between SPS and Public Service Company of Colorado, located near Lamar, CO.
- Blackwater HVDC: connection between SPS and Public Service Company of New Mexico, located near Clovis, NM.
- Eddy County HVDC: connection between SPS and El Paso Electric Company, located near Artesia, NM.

Transmission Congestion

Congestion is driven by a transmission constraint observed when the available generation facilities participating in the Southwest Power Pool are dispatched on an economic basis and create an overload scenario on a particular transmission line. Congestion costs occur when the Southwest Power Pool needs to call upon certain generators to either cut back or increase production to address the constraint. Typically, congestion is seen on a day-ahead and real time basis; however, Production Cost modeling software such as PROMOD can attempt to simulate the occurrence rate and financial impacts of congestion on an annual basis. Solutions to congestion can be as simple as addressing a clearance violation on a transmission line span or upgrading some substation equipment that is causing the overall transmission line to be rated at a value lower than its capability. Additionally, upgrading some substation equipment may also address the rating issues. More expensive solutions to address congestion can be reconductoring or rebuilding a transmission line to a higher thermal rating or building a completely new line.

SPS is aware of the cost impacts to customers due to congestion on the transmission system and has been actively working to reduce the number of hours that impact the SPS transmission system. The Southwest Power Pool has an independent body within its framework called the Market Monitoring Unit ("MMU") that serves to monitor the Southwest Power Pool energy market. The MMU organization is responsible for assessing the behavior of the market, the behavior of the Market Participants, and the rules within the market to ensure it is working fairly and efficiently. The MMU annually publishes the study of "Frequently Constrained Areas," which identifies areas within the Southwest Power Pool system that have transmission constraints that are binding for a significant number of hours. The study is posted publicly on the Southwest Power Pool website and is provided as Appendix C-1. The MMU also publishes an annual "State of the Market" report, which identifies market performance and observations. The report is posted publicly on the Southwest Power Pool website and is provided as Appendix C-2. Although SPS is still subject to congestion based on generation patterns, load changes, line ratings, and line outages, the SPS region has not been identified as a Frequently Constrained Area in the annual report since 2018 due primarily to transmission network upgrades in the area that increased the capacity on the transmission network.

Transmission Planning

Xcel Energy has an Integrated System Planning ("ISP") organization within the company that has consolidated all the transmission, distribution, and resource planning functions under a single leadership structure to enhance collaboration, communication, and coordination across the planning groups. The Transmission Planning South department is focused on the transmission planning activities in the SPS area and is responsible for coordinating with the Southwest Power Pool on transmission planning related items.

The Southwest Power Pool membership is comprised of electric cooperatives, federal agencies, independent power producers, independent electric transmission companies, investor-owned electric utilities, marketers, municipal utilities, state authorities, contract participants, and more. The Southwest Power Pool provides several transmission planning functions that SPS engages in, including:

- model building;
- transmission expansion planning;
- generation interconnection studies;
- tariff administration;
- compliance; and
- outage coordination.

Annually, the ITP study is completed by Southwest Power Pool in conjunction with stakeholders. Through the ITP, system wide transmission models are created and then used to assess reliability and economic needs on the entire transmission system under the Southwest Power Pool's oversight. Once the needs are identified, the Southwest Power Pool approves construction of transmission projects to address the reliability violations or deliver on the calculated economic benefits. The 2022 ITP Assessment Report can be found publicly available on the Southwest Power Pool website.[22] The report is also provided as Appendix C.

Generation Interconnections

The Southwest Power Pool is responsible for managing the generation interconnection queue called the Definitive Interconnection System Impact Study ("DISIS") process. The DISIS is a series of analyses conducted by Southwest

[22] https://www.spp.org/documents/68410/2022%20itp%20report%20v1.pdf

Power Pool to evaluate the impact of proposed generation projects on the Southwest Power Pool transmission system, identify transmission network upgrades needed for the proposed generation projects to interconnect, and grant injection rights. Southwest Power Pool studies projects in "clusters"—a group of all generation interconnect proposals submitted within a specific time period. This study process includes performing the necessary steady-state, dynamic, and short circuit studies, and identifying the upgrades necessary to reliably interconnect the proposed generation to the grid. The DISIS process is outlined in Attachment V of the Southwest Power Pool Open Access Transmission Tariff[23] ("OATT"). In addition to adding new generation through the DISIS, utilities can add new generation to their systems by utilizing the Generation Facility Replacement Process or the Surplus Interconnection process.

The Generation Facility Replacement Process is also outlined in Attachment V of the Southwest Power Pool OATT and allows utilities to retire an existing generator and replace it at the same point of interconnection with a new generator. The replacement generator does not need to be the same type of resource as the retiring generator(s), but the total allowable output of the replacement generator must be less than or equal in capability to the output stated in the Generation Interconnection Agreement ("GIA") of the retiring generator(s). Additionally, when the Southwest Power Pool performs the studies, the replacement generation must not have a material adverse impact on the transmission system when

[23] https://spp.etariff.biz:8443/ViewerDocLibrary/MasterTariffs//5FullTariff.pdf

compared to the existing generator. If material adverse impacts are observed, the request for replacement is rejected.

The Surplus Interconnection process is also outlined in Attachment V of the Southwest Power Pool OATT and is when an entity with a GIA allows itself, an affiliate, or a third party to utilize the unused portion of the interconnection service granted in the GIA. For example, a 100 MW wind farm would likely have a GIA permitting it to inject up to 100 MW into the transmission system. However, it would only inject the full 100 MW during periods of high wind. During other periods, it would have unused interconnection service available. If the wind farm were to permit another generation facility to share its interconnection, the other facility could use the unused interconnection service so long as the instantaneous output of the two generation facilities does not exceed the 100 MW interconnection service.

The benefits of utilizing the Generation Facility Replacement Process or the Surplus Interconnection process are they are faster to complete and the resulting additional generation will likely be lower cost. These two processes only take approximately six months to complete, while the DISIS is currently backlogged and is finally completing studies for generators that were submitted in 2017. Additionally, since both of these studies utilize existing interconnection rights, the requesting generators will not be assigned transmission network upgrade costs like the DISIS generators, thus lowering their overall cost.

Generators that utilize the Generation Facility Replacement Process are not subject to transmission network upgrade costs, however, in order to avoid having a material adverse impact on the transmission system when compared to the existing generator, the proposed replacement generator may need to include additional transmission elements to mitigate any concerns in the dynamic or short-circuit planning assessments. These additional facilities, which can include but are not exclusive to capacitor banks, reactors, static-var compensators and synchronous condensers, must be included as part of the initial request submittal into the Generation Facility Replacement Process. On the SPS system, which has been traditionally comprised of a large number of thermal based resources, this rejection would not be very common. However, as the SPS generation fleet transitions to more and more renewables, this concern will need to be considered when comparing costs and benefits of the proposals.

Transmission Planning Coordination

In addition to being a member of Southwest Power Pool and participating in several technical groups and committees, SPS is also a member of the North American Transmission Forum and partners with the Electric Power Research Institute ("EPRI"). SPS also coordinates within Xcel Energy with its peer transmission planning groups that primarily support the company-owned transmission systems in Colorado, Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin.

3.11 Existing Distribution Capabilities

Distribution Facilities

SPS has distribution facilities located in New Mexico and Texas. SPS owns and operates around 15,800 miles of overhead and underground primary distribution lines and approximately 430 distribution substations in its service territory. The nominal distribution operating voltages span from 34.5 kV to 2,400 volts. A map of SPS's transmission system with the interconnected SPS distribution substations is provided as Appendix D-1, which contains confidential information. Confidential information will be provided to the Commission's Records Division and will be provided to parties executing a non-disclosure agreement upon the granting of a Protective Order. Appendix D-2 summarizes the existing distribution facilities on the SPS system, highlighting every distribution substation, distribution feeder line, the voltage on each feeder, and the mileage of each feeder. SPS does not have a single database or summary of every single distribution asset, but will work with the Commission as necessary to provide any additional information necessary for the purposes of this IRP.

Distribution Capability Limitations

All limitations for interconnections related to load or distributed energy resources ("DER") are identified by studies performed on a case-by-case basis when the interconnection request is submitted. SPS does offer an optional pre-application screening assessment for specific locations for DER customers in New Mexico who want to have sites reviewed prior to submitting a formal application for a new interconnection. The pre-application screening assessment helps identify thermal or backfeeding issues that could result in costs and/or timeline impacts to the DER customer. When siting DER on the SPS Distribution system, no two feeder systems are alike and the full interconnection study is performed to identify any thermal, voltage, backfeeding, or short-circuit issues associated with the interconnection at the proposed location identified on the application.

SPS is working toward having the New Mexico Interconnection Portal available by fourth quarter of 2023. SPS does not publish a hosting capacity analysis map or a known capacity constraint list. All generation interconnections greater than 1 MW require a meter to be installed to provide real time data back to SPS Transmission Operations.

This information is consistent with recent SPS filings in interconnection cases and Community Solar Program cases, including Case Nos. 22-00020-UT, 23-00071-UT, and 23-00203-UT.

Distribution Planning Coordination

SPS coordinates within Xcel Energy with its peer distribution planning groups that support the company-owned distribution systems in Colorado, Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin. As a collective, the Xcel Energy distribution planning organization also partners with EPRI on a number of initiatives including DER integration and electric transportation.

3.12 Details of Planned or Anticipated Transmission and Distribution Network Upgrades

The Transmission Planning and Distribution Planning departments within SPS are constantly assessing and reassessing their systems to identify any reliability concerns and then addressing the issues with appropriate solutions. The transmission system is also assessed for economic solutions through the annual ITP studies performed by Southwest Power Pool to address congestion.

As covered in Section 3.10, SPS's Subregional Planning meeting materials (Appendix B) highlight planned Transmission and Distribution Network Upgrades. This presentation is not the exhaustive list of all projects SPS has planned to build in the five-year capital budget period, but it identifies a large number of the more costly transmission upgrades and the new distribution substations planned to be completed in the near future. New connections for customers, substation and feeder expansions, new transmission lines, line rebuilds and reconductors, end of life replacements, spare equipment additions, communication upgrades, compliance, storm response, and network upgrades for generation interconnections are just some of the anticipated transmission and distribution work that SPS will perform. Appendix D-3 identifies the planned or anticipated network upgrades on the SPS transmission and distribution systems that are expected to go in-service between 2024 and 2026. The projects specifically included in the distribution list are discrete projects that are either associated with a distribution substation project or exceed $250,000 for distribution line work. SPS has a large number of additional distribution capital projects that do not exceed the $250,000 threshold and are captured in blankets like pole replacements, overhead line extensions, overhead line rebuilds, and underground line extensions. At this threshold, however, more substantial network upgrades are captured and included.

Load Growth

As covered in detail in Section 4 of this filing, SPS is experiencing a significant amount of load growth in its service territory. The growth will exceed the current transmission and distribution infrastructure in certain areas and upgrades, or new facilities, will be necessary to connect and reliably serve SPS customers. The anticipated work will rely on collaboration and communication with the customers in the affected areas. SPS will actively engage with the Southwest Power Pool and leverage the transmission planning processes to get facilities identified in a timely manner to allow SPS to build the new transmission to serve the load and keep the overall grid reliable. Transmission projects to support the growing load in the SPS system will generally be identified through the annual ITP study process or the new load interconnection process outlined in Attachment AQ of the Southwest Power Pool OATT. New distribution projects will be identified following studies performed for the specific load requests looking to interconnect to the distribution system.

The location of new generation will also impact the amount of new transmission that will be required to support the projected load growth. If the generation is located remote from the large load growth areas, more transmission lines will be required to transport the power from the generator(s) to the customers and reactive devices, such as capacitor banks, static-var compensators, or synchronous condensers, may be necessary to help regulate the voltage to keep the system within limits. Additionally, losses on the transmission system will be larger. Generation sited closer to a load pocket will be able to provide energy directly to the area as well as supply the reactive support to help control voltages. This helps reduce the amount of new transmission lines and reactive support necessary to maintain system reliability.

Generation Transition and Additions

As older thermal generation sources are taken off-line, the characteristics of the grid will be fundamentally different in the future as new generation sources come online. Even if SPS leverages the Generation Facility Replacement Process, the replacement generation may be a different technology type and, therefore, could require additional grid supporting technologies for interconnection to maintain adequate voltage. Additionally, neither the DISIS process, Generation Facility Replacement Process, nor the Surplus Interconnection process perform an economic analysis. Therefore, once the new generation facilities are approved and/or are included in the transmission planning models, additional transmission may be identified to more economically connect the generation to load.

Transmission and Distribution Sustainability

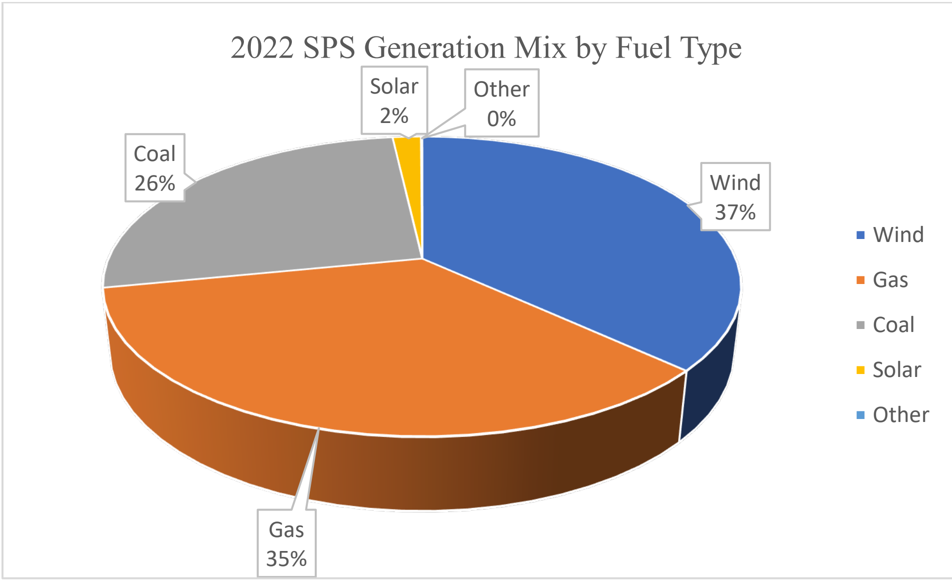
SPS is aware that its electrical infrastructure is aging and is working to find innovative ways to replace critical assets at the right time and ways of prolonging the life of other assets, if it can safely do so. The Transmission organization created a new tool called Transmission Asset Health Analytics ("TAHA") that will leverage machine learning and analytics and apply it to the significant amounts of data that SPS collects from the different equipment in the field and site visits to help determine when certain pieces of equipment need to be replaced. The goal is to reduce unplanned outages, decrease the amount of emergency repairs and replacements, improve productivity by properly prioritizing work, reducing the need for site visits, and focusing expenditures on the right assets at the right time. In order to prioritize future projects and eliminate obsolescence in the system, SPS has implemented the following End of Life Replacement programs in the capital budgets that this data will help prioritize:

1. Transformers
2. Circuit Breakers
3. System Protection Relays and Communication
4. Substation Switches
5. Remote Terminal Units ("RTU")
6. Major Line Rebuilds
7. Major Line Refurbishments

3.13 Environmental Impacts of Existing Supply-Side Resources Percentage of MWh Generated

The percentages of MWh generated by each fuel type used by SPS for Calendar Year 2022 are provided in Figure 3F.2 below.

Figure 3F.2: Percentage of MWh Generated in 2022 by Fuel Type



SPS Emissions Information

The emission rates for SPS-owned generation resources are shown in Table 3-11 below. All emission rates are expressed in pounds per kWh.

Water Consumption Rates

Average water consumption rates, by plant, are expressed in gallons per kWh (H_2O Consumption) and also shown in Table 3-11 below.

Table 3-11:Emission and Water Consumption Rates

2022 SPS Emission Rates of Criteria Pollutants plus Mercury and Carbon Dioxide expressed In Pounds per Megawatt-Hour (lb/MWh) and Water Consumption expressed In Gallons per KWh											
Plant	Unit	Year	SO2 Lbs/MWh	NOx Lbs/MWh	PM Lbs/MWh	CO2 Lbs/MWh	Hg Lbs/MWh	CO Lbs/MWh	Pb Lbs/MWh	VOC Lbs/MWh	H2O Consumption Plant Average
Hale County Wind Farm	EXIS	2022	0.000	0.000	0.0000	0	0.0000000	0.0000	0.0000000	0.0000	0
Sagamore Wind Farm	1	2022	0.000	0.000	0.0000	0	0.0000000	0.0000	0.0000000	0.0000	0
Cunningham	1	2022	0.008	2.159	0.1010	1,627	0.0000040	0.0031	0.0000066	0.0734	0.476
Cunningham	2	2022	0.006	1.555	0.0780	1,247	0.0000030	0.0399	0.0000052	0.0206	
Cunningham	3	2022	0.007	0.670	0.0560	1,381	0.0000030	0.0465	0.0000000	0.0244	
Cunningham	4	2022	0.007	0.693	0.0560	1,390	0.0000030	0.0468	0.0000000	0.0246	
Harrington	1	2022	7.621	1.831	0.5030	2,430	0.0000100	1.0711	0.0000589	0.0365	0.662
Harrington	2	2022	7.081	1.694	0.1230	2,305	0.0000090	1.1465	0.0000191	0.0371	
Harrington	3	2022	6.665	2.091	0.1450	2,282	0.0000080	1.1212	0.0000217	0.0362	
Jones	1	2022	0.007	1.318	0.0840	1,317	0.0000030	0.0001	0.0000060	0.0596	0.430
Jones	2	2022	0.007	1.115	0.0870	1,367	0.0000030	0.2720	0.0000060	0.0621	
Jones	3	2022	0.006	0.326	0.0500	1,270	0.0000030	0.3717	0.0000000	0.0032	
Jones	4	2022	0.006	0.342	0.0450	1,276	0.0000030	0.2602	0.0000000	0.0032	
Maddox	1	2022	0.007	1.514	0.0820	1,296	0.0000030	0.1145	0.0000054	0.0591	0.867
Maddox	2	2022	0.005	3.332	0.0910	1,601	0.0000040	0.1236	0.0000067	0.0288	
Maddox	3	2022	0.008	8.187	0.1730	3,029	0.0000070	0.5899	0.0000127	0.0576	
Nichols	1	2022	0.007	1.257	0.0830	1,334	0.0000030	0.2631	0.0000052	0.0603	0.889
Nichols	2	2022	0.008	1.624	0.0910	1,462	0.0000030	0.2885	0.0000059	0.0661	
Nichols	3	2022	0.007	1.848	0.0920	1,480	0.0000030	0.2913	0.0000064	0.0668	
Plant X	1	2022	0.010	9.315	0.1300	2,088	0.0000440	1.4388	0.0000000	0.0942	1.087
Plant X	2	2022	0.008	1.281	0.0970	1,558	0.0000040	0.5999	0.0000098	0.0704	
Plant X	4	2022	0.007	1.303	0.0820	1,317	0.0000040	0.2602	0.0000054	0.0596	
Tolk	1	2022	6.653	2.330	0.0740	2,350	0.0000100	1.1195	0.0000134	0.0065	0.57
Tolk	2	2022	6.7340	1.661	0.1160	2,295	0.0000080	1.0177	0.0000189	0.0073	
Quay County	1	2022	0.1070	15.300	0.2820	2,899	0.0000280	0.1882	0.0002359	6.7059	

3.14 Back-Up Fuel Capabilities and Options

Harrington

SPS has multiple gas suppliers that provide service to its generating facilities. Harrington Station has startup gas and currently limited main gas for the coal plant facility. However, ONEOK (current supplier to the site of startup gas) will soon have a 24” line that will provide all gas requirements to reach full load on all three units when the units are converted from coal to gas in 2025. This new pipeline will have two interconnections from El Paso Natural Gas Co. and National Gas Pipeline

Co. that originate from Kinder Morgan and will supply 100% of the gas needs for Harrington Station. The current gas supply from ONEOK will continue to be available for the Harrington units and may supply partial back up to the units.

Nichols

Nichols Station has two gas supply pipelines. The supply from ONEOK is used for pressure control, and the Kinder Morgan supply is used in a flow control configuration. Neither pipeline can support full-load generation from the plant. The two pipeline flows are coordinated in a manner to allow unit swings from full load to minimum load and to prevent over pressuring either pipeline.

Jones

Jones Station has three pipelines that supply gas to the facility. ONEOK Westex and Northern Natural Gas Powertex supply gas at low pressures and are mainly used for the supply to Jones 1 and 2. When Jones 1 and 2 are fully loaded, the Northern Natural Gas Powertex pipeline cannot supply the total gas flow, and the ONEOK Westex pipeline is used to supply the remaining requirement for fuel to the two steam units. The ONEOK Red River pipeline supplies high pressure gas to the two combustion turbines (Jones 3 and 4). The ONEOK Red River pipeline can supply enough flow to support full load on Jones 3 and 4 combined. A fuel gas compressor is installed for operating Jones 3 and 4 from the low pressure Powertex supply if the need arises.

Plant X

Plant X has a flow control gas system that is served by El Paso Natural Gas (Kinder Morgan) and a second supply of ONEOK Westex for pressure control. Both suppliers at Plant X can support the flow requirements with Plant X Unit 4 at full load.

Cunningham, Maddox, Hobbs

Cunningham Station, Maddox Station, and the Hobbs plant are supplied with fuel gas from the Branch Energy pipeline system. Northern Natural Gas and El Paso are the two suppliers into the Branch Energy pipeline system. Neither El Paso nor Northern Natural Gas have enough capacity to supply gas flow to all three plants, so the two supplies are operated in a manner to fully cover the gas flow requirements for the three plants. If the Hobbs plant is off, either supplier could cover the needs for the Cunningham and Maddox plants.

Fuel Oil

SPS has options for fuel at two of the gas plants that have fuel oil capabilities. Plant X Unit 4 can operate at full load while burning 213 gallons per minute ("GPM") of fuel oil and a small amount of natural gas to keep the flame stable. Plant X has two fuel oil tanks that will hold up to 800,000 gallons of fuel in case of emergency needs. Plant X will only keep up to 800,000 gallons to make sure it has enough room in storage if the tank develops a tank leak. This allows around 62.6 hours, or 2.6 days, of emergency fuel backup at full load. Jones Station Units 1 and 2 have a similar set up with 1.8 million gallons of fuel on site. That site is permitted for throughput throughout the year. For example, Jones 1 is limited to 18.5 million MMBtu[24] fuel oil burned per year. The average BTU/gal is 136,700, that would allow us to burn 135,332,186 gallons per year. Jones 1 can operate at a maximum dispatchable rate of 180 MW, 140 GPM of fuel oil with 69% oil and 31% gas flow. Jones 2 can operate at a maximum dispatchable rate of 190 MW with 170 GPM with 72.5% oil and 27.5% gas flow. Quay County is the backup for Tucumcari and the only fuel source is fuel oil. The facility has a 200,000-gallon fuel oil tank that supplies the combustion turbine.

During the Winter Storm Uri weather event, the Southwest Power Pool limited the storms' reliability impacts to just two periods of controlled outages. The winter storm produced extremely cold temperatures across the entire Southwest Power Pool service territory. The storm led to increased electricity use at the same time its generation resources were limited in their capacity to produce energy. A shortage of natural gas created a need to utilize the fleet's fuel oil capacity. During the event, Jones Station burned 628,925 gallons of fuel oil, Plant X4 burned 587,727 gallons of fuel oil, Plant X2 burned about 25,000 gallons of fuel oil, and the Quay County gas turbine was operated and burned 116,182 gallons of fuel oil to maintain reliable system operations while navigating challenges due to natural gas shortages in the region and beyond.

Under certain circumstances, SPS's renewable fleet can be used as an additional option/energy source and contribute to the overall resiliency of the

[24] Million British Thermal Unit

system. SPS renewable options for generation backup include SPS-owned facilities and purchased power. SPS owns the Hale (478 MW) and Sagamore (522 MW) wind farms that utilize the region's wind generation capacities. Long term purchased power includes the following wind facilities: Mammoth Plains, Palo Duro, Wildorado, Spinning Spur, Caprock, Roosevelt, San Juan, Wildcat Ranch and Lorenzo. Solar long-term purchased power for the New Mexico area include Roswell, Chaves and SunEdison. Also, SPS owns four small scale solar generation sites located in Clovis: freshman high school academy campus, Roswell ENMU, Hobbs Service Center and Carlsbad Leyva middle school campus. These small solar projects total approximately 150 kW. During the Winter Storm Uri weather event, these renewable resources provided system support but had some limitation due to icing and wind cutouts. The limits on wind generation occur when wind speed reaches above 43 miles per hour. At a five-minute average, the blades automatically turn to prevent catching the wind and will stay offline until the wind speed drops below 43 miles per hour for an average of five minutes. When icing occurs, the weight of the blades will slow the blade speed down until it stops producing power. Once the ice melts, the wind turbine will begin turning and produce power once it is above 5 meters per second.

3.15 Assessment of Critical Facilities Susceptible to Supply-Source Disruptions, Extreme Weather Events or Other Failures

SPS takes system reliability seriously and devotes significant resources to protecting the electric grid from multiple types of risks. The SPS transmission system is planned and designed for single contingency or N-1 standards, and therefore has the ability to sustain overall grid reliability in the face of various types of generator and transmission contingencies. In addition, SPS is compliant with the applicable NERC[25] reliability standards, which require that assets critical to operation of the bulk electric system be identified and special protections for those facilities implemented. For safety and reliability, SPS considers any lists or descriptions of these critical assets as highly confidential and does not make them available in the public domain. Furthermore, SPS's owned generation units have redundant fuel supplies, mitigating the risk of supply-source failures. Additionally, purchases from the Southwest Power Pool market would typically address any deficiencies in SPS resources.

Emergency Operation Plan

The SPS Emergency Operations Plan ("EOP") is a procedure that prescribes methods to respond to unexpected events that are beyond the normal operations of the power system.[26] The cause of these events may be the loss of generation, loss of fuel supplies, severe weather-related transmission interruption, or other events whereby generation or transmission facilities become limited such that the ability to serve the total system demand is in question. SPS reviews and updates the EOP on an annual basis.

SPS's EOP, among other items, includes specific operational plans for addressing weather related hazards which could impact either the generation or

[25] North American Electric Reliability Corporation
[26] SPS develops its EOP in compliance with Public Utility Commission of Texas substantive rule requirements, including requirements for annual updates.

transmission system. In particular, SPS maintains a checklist for use by personnel responding to cold weather emergencies, a checklist for use by personnel responding to hot weather emergencies, a staffing and supplies procedure for weather emergencies, and a procedure for the threat of wildfires. Appendices to the EOP address in further detail SPS's approach to several different natural disasters and weather-related events.

SPS's EOP also includes plans and procedures to address threats to the system which could arise from a pandemic, a cyber security threat, a physical security threat, or a water shortage which would threaten generation supply. The plan also addresses standardized interactions with local government, first responders, as well as state and federal agencies that would be engaged in the event of issues facing the SPS system outside of natural disasters.

SPS conducts multiple drills each year to test the effectiveness of the EOP. After each drill a review of the EOP is conducted and revisions to improve response are noted. SPS Management and external facing personnel have received extensive training through the National Incident Management System ("NIMS") provided by FEMA to ensure that in emergency scenarios communications with first responders, incident managers, and recovery processes align with federally established practices.

Critical Natural Gas Facilities

Appendix A to the IRP Rule requires "an assessment of the critical facilities susceptible to supply-source disruptions, extreme weather events, or other failures."

To that end, SPS provides service to critical natural gas supply customers in compliance with applicable regulatory requirements. For example, the Public Utility Commission of Texas along with the Railroad Commission of Texas have implemented standards regarding the critical nature of natural gas supply customers in response to the supply disruptions, which impacted electric generation during Winter Storm Uri. A facility designated as a critical natural gas supply customer by the Railroad Commission of Texas must provide critical customer information to the utility from which the critical natural gas supply facility receives electric delivery service. In situations of emergency operations, the utility supplying electric service to the critical natural gas supply facility must prioritize the critical natural gas facility for continued power delivery during an emergency and must, at its discretion, prioritize power delivery and power restoration among critical natural gas facilities and other critical loads on its system, as circumstances require. While the utility must prioritize the service of critical natural gas supply customers, compliance with directives of a regional transmission organization have overruling authority.

Section 4. CURRENT LOAD FORECAST

This section provides SPS's projections of future energy sales and coincident peak demand based on different forecast scenarios. Included in the discussion in this section are a description of SPS's forecast methodologies and the changes to the forecasts from SPS's last IRP.

4.01 Forecast Overview

Projections of future energy sales and coincident peak demand are fundamental inputs into SPS's resource need assessment. As required by the IRP Rule, SPS has prepared three scenario forecasts with varying growth outlooks (17.7.3.8(B)(2), Appendix A, Section "Current Load Forecast" (C) NMAC). These forecasts are referred to in ascending order as the Financial Forecast, the Planning Forecast, and the Electrification Forecast. While prior filings have used a low and high forecast around the Financial Forecast as a base, SPS's Financial Forecast is an inherently conservative outlook, making it a reasonable low case.

Each forecast shows growth over the Planning Period, which contrasts to the -2.8% historical annual average load decline and -1.0% historical annual average energy decline over the 10 years ending 2022. Load and energy decreases were driven primarily by the decline of wholesale load due to expiration of the New Mexico cooperatives' wholesale contracts and contractual changes within existing wholesale contracts.

SPS's Financial Forecast projects its electric firm obligation load (firm retail and firm wholesale requirements customers) to increase at a compound annual growth rate of 1.0% or an average of 67 MW per year through the Planning Period. We are forecasting this level of growth notwithstanding the loss of wholesale sales recently because we forecast that growth in retail demand will more than offset the impact of losing wholesale customers through the forecast period.[27] SPS's Financial Forecast energy sales are forecasted to increase at a compound annual growth rate of 1.3% or an average growth rate of 381 GWh per year during the same period. The Financial Forecast peak demand assumes economic growth based on projections from IHS Markit[28] and normal summer peak weather conditions. SPS estimates a 50% probability that the actual peak demands and energy sales will fall above the Financial Forecast scenario based on uncertainty inherent in underlying model variables. SPS expects a greater than 50% probability that actuals land above the Financial Forecast based on current load requests in the region, with this probability making the Financial Forecast a conservative, or low, view of growth during the period covered by the load forecast.

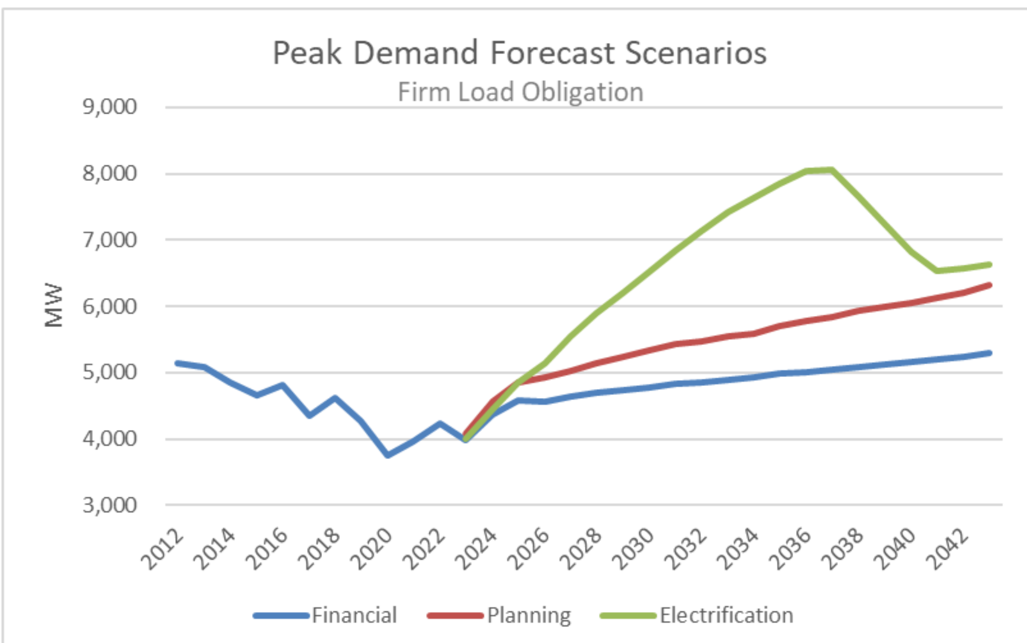
SPS's Planning Forecast includes a firm load compound annual growth rate of 1.7% through the Planning Period, while the Electrification Forecast expects a firm load growth rate of 2.1% through the Planning Period. While the growth rates

[27] SPS's wholesale sales have steadily declined in recent years as a result of agreements that SPS entered into with its wholesale customers during the period from 2007 through 2010, in accordance with agreement approved in Case Nos. 04-00426-UT and 05-00341-UT as well as Case No. 10-00074-UT.

[28] As discussed below, IHS Markit is a trusted data source for forecasting professionals that SPS uses for economic and demographic data and forecasts.

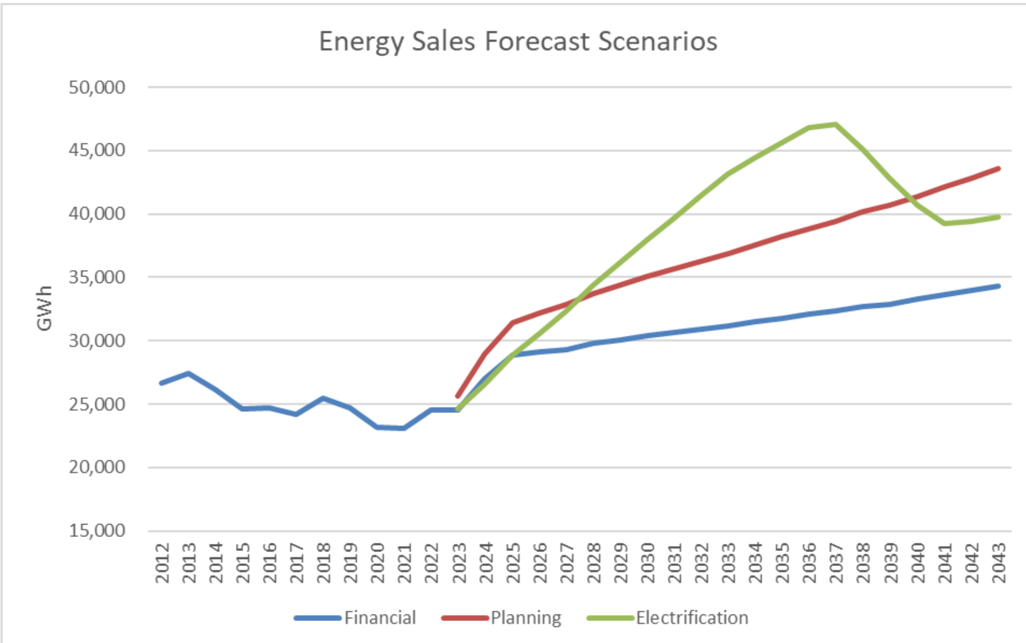
for these two scenarios appear similar over the full Planning Period, they are markedly different during the 2030s; the two later converge due to declining oil and gas activity in the outer years of the Planning Period in the Electrification Forecast. The Electrification Forecast includes a firm load growth rate of 5.1% from 2024 to 2036, which drops to a -2.7% rate from 2036 to 2043. Figure 4F.1 below contains a graphical representation of the Financial, Planning, and Electrification Forecast scenarios of coincident peak demand.

Figure 4F.1: Coincident Peak Demand Forecasts



SPS's Planning Forecast annual energy increases at a compound annual growth rate of 2.2% through the Planning Period, while the Electrification Forecast sees a net annual energy growth rate of 2.1% through the Planning Period. Similar to the discussion of firm load above, the Electrification Forecast reports a growth rate of 4.8% from 2024 to 2036, which declines to -2.3% from 2036 to 2043. Figure 4F.2 below contains a graphical representation of the Financial, Planning, and Electrification forecast scenarios of annual energy.

Figure 4F.2: Energy Sales Forecasts



Figures 4F.1 and 4F.2 (above) show the Financial, Planning, and Electrification Forecasts for firm coincident peak demand and annual energy sales graphically. Appendix E (Tables D-10 and D-11) provides the data supporting the charts. Appendix E (Table D-11) also shows the SPS forecast for its total annual energy sales with eleven years of history starting in 2012, and it shows annual growth and compounded growth to/from 2022. The bold line across the table delineates historical from projected information.

4.02 Peak Demand Discussion

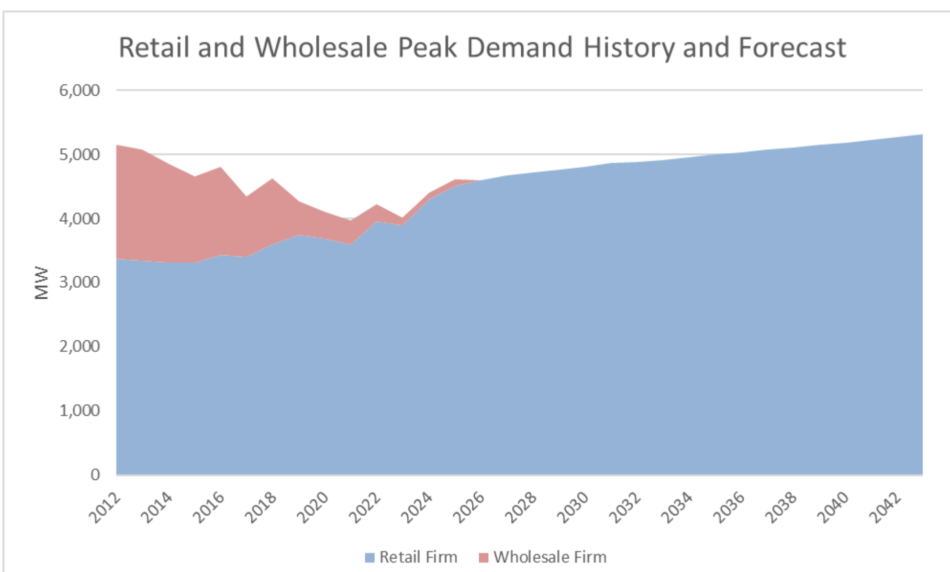
Due to decreased demand from wholesale customers, firm peak demand in the SPS service territory has declined over the last 10 years (through 2022). However, the decline is not expected to continue. SPS's firm peak demand decreased by -1,250 MW or -25%, from 2012 to 2022. The decline resulted from decreased demand from wholesale customers due to changes in contracted load, rather than declining overall demand within the region. In the 10-year period ending 2022, the population and economic activity in the SPS service territory decreased only slightly, averaging compound annual growth rate of -0.05% for population and -0.03% for Combined Real Gross County Product ("GCP"). During this same period, SPS gained about 20,140 residential customers across all jurisdictions, for a compound annual growth rate of 0.7%.

The peak demand forecast compound annual growth rate for the Planning Period through 2043 is 1.0%. This is stronger growth than seen over the prior ten years, which averaged annual declines of 2.8%. Retail peak demand for the Planning Period increases at a compound annual growth rate of 1.1%, compared to the ten-year period ending 2022 compound annual growth rate of 1.6%. Retail peak demand growth is driven by population and economic growth in the service territory, continued expansion of the oil and gas industry in southeastern New Mexico, and adoption of electric vehicles, offset in part by increasing adoption of behind-the-meter solar generation. Wholesale peak demand for the Planning Period gradually decreases as contracts expire and is zero starting in 2026. SPS assumes that expiring wholesale contracts will not be renewed after their known expiration dates.

SPS service territory real GCP and population growth are expected to average 0.2% through 2043, both notably higher than the prior 10 years. SPS projects residential customer growth will average annual increases of 0.7% through 2043 in the Financial Forecast, in line with recent history.

Table D-4 in Appendix E (Electric Energy and Demand Forecast) shows the SPS coincident peak demand by retail and wholesale customer categories. Figure 4F.3 shows the SPS coincident peak demand by retail and wholesale customers graphically.

Figure 4F.3: Peak Demand History and Forecast, Retail and Wholesale

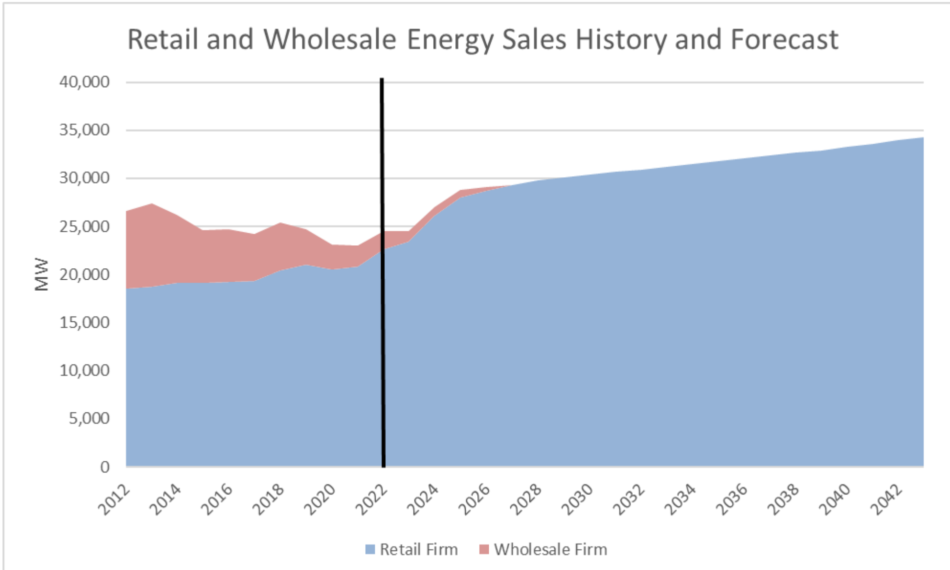


4.03 Annual Energy Discussion

SPS is anticipating energy sales to average a compound annual growth rate of 1.3% over the Planning Period in the Financial Forecast. The declines in wholesale energy sales corresponding to the termination or reduction of sales to specific wholesale customers will partially offset growth in the retail sector.

During the past ten years SPS has also experienced declines in firm energy sales driven by significant shifts between firm and non-firm wholesale sales. Weather-normalized firm energy sales decreased by 2,441 GWh, or -9.2%, from 2012 to 2022. The energy sales forecast's compound annual growth rate for the Planning Period through 2043 is 1.3%, with retail energy sales more than offsetting the declines in wholesale. Retail energy sales for the Planning Period increase at a compound annual growth rate of 1.5%, somewhat below the 10-year period ending 2022 growth rate of 2.0%. Retail energy sales are expected to continue to see strong growth from the New Mexico commercial and industrial sector, which is heavily dependent on the oil and natural gas industries, and the adoption of electric vehicles. Financial Forecast wholesale energy sales are forecasted to decline steadily before reaching zero in 2027. Figure 4F.4 shows SPS's energy sales by retail and wholesale customer class graphically.

Figure 4F.4: Energy Sales History and Forecast, Retail and Wholesale



4.04 Electric Vehicles

SPS has developed a projection of electric vehicle adoption in its service territory. SPS expects to have 436,850 electric vehicles in its service territory by 2043. These vehicles are expected to contribute 3,904 GWh to annual energy sales and 449 MW to coincident summer peak demand.

4.05 Planning and Electrification Forecasts

Development and use of different energy sales and demand forecasts for planning future resources is an important aspect of the planning process. Alternative high case scenarios to the Financial Forecast were developed for the 2023 IRP. The Planning Forecast scenario is based on a Monte Carlo simulation for energy sales and peak demand forecasts with probabilistic inputs for the economic, energy, and weather drivers of the forecast models and for model error. The Planning Forecast scenario represents a one standard deviation increase from the Monte Carlo simulation over the Financial Forecast. Because the Monte Carlo simulation is calibrated to the Financial Forecast, there is a 50% probability that actual energy sales and coincident peak demand fall above the Financial Forecast.

At the request of multiple stakeholders through the Facilitated Stakeholder Process, the Electrification Forecast scenario uses the December 2022 S&P Global report “Electrifying the Permian Basin” as the basis for future Large Commercial & Industrial load growth, replacing the outlook provided through SPS’s internal processes. Forecasted oil and gas loads for the Planning Period are estimated using a simple interpolation between load values provided within the report, including the ultimate decline in demand in the later 2030s. Given the centrality of SPS’s service territory to New Mexico Permian Basin development, the full load additions over the Planning Period are attributed to SPS, but Texas SPS loads remained unchanged. SPS included the full electrification requirements, exclusive of any behind-the-meter generation, due to uncertainty about the nature of these projects and their ultimate impact on peak demand, as well as the intention of this scenario as a higher growth outlook.

Appendix E (Table D-10 and Table D-11) provides a summary of the Financial, Planning, and Electrification Forecasts peak demand and energy forecasts.

Typical Historic Day Load Patterns

Please refer to Appendix F for the typical day load patterns on a system-wide basis for each customer class provided for: peak day, average day, and representative off-peak days for each calendar month.

4.06 Forecasting Methodologies

The following discussion describes the methods used to forecast energy sales and coincident peak demand for each of its various customer classes in SPS.

SPS forecasts retail energy sales and customers by class for each jurisdiction. Retail coincident peak demand is forecasted in aggregate at the total SPS level. The wholesale energy sales and coincident peak demand forecasts are developed at the individual customer level of detail. SPS models its forecasts at a monthly frequency and uses monthly historical data to develop the customers, energy sales, and coincident peak demand forecasts. Annual energy sales are an aggregation of the monthly energy sales estimates. Energy sales are forecasted at the delivery point and peak demand is forecasted at the generating source. The annual coincident peak demand occurs in August throughout the Planning Period.

IHS Markit, a trusted data source for forecasting professionals, provides economic and demographic data and forecasts. SPS assumes normal weather for the forecast period. Normal weather is based on a 30-year rolling average of historical weather data for the energy sales and retail coincident peak forecasts.

4.07 Energy Sales Forecasts

SPS's retail customer counts and retail energy sales forecasts are developed using econometric models and trend models. An econometric model is a widely accepted modeling approach involving linear regression analysis. Linear regression analysis is a statistical technique that attempts to understand the movement of the dependent variable, for example, energy sales, as a function of movements in a set of independent variables, such as economic and demographic concepts, customers, price, trend, and weather, through the quantification of a single equation. Other variables used in the econometric models may include autoregressive correction terms and binary variables. Binary variables are used in models to account for non-weather-related seasonal factors and unusual billing activity. The autoregressive correction term is used to aid in eliminating bias found in time-series models. After developing and testing the econometric models to identify the relationship between the dependent and independent variables, forecasts of the independent variables are used to predict future energy sales and customer counts.

SPS's econometric models are evaluated through examining the model statistics output and tests results. Each variable coefficient in the models is checked for the correct theoretical signs and statistical significance. The coefficient of determination (R squared) test statistic is a measure to verify the quality of the model's fit to the historical data. The models are also tested for correlation of errors from one period to the next. The absence of correlation between the residual errors is an important indicator that the model is performing adequately. Graphical inspection of a model's error term helps identify if a model suffers from autocorrelation (i.e., error terms are not random and are correlated between periods) or heteroscedasticity (i.e., inconstant variance of errors over the sample period). A model with autocorrelation may indicate model misspecification.

The output from the econometric models for the retail energy sales is adjusted to reflect the expected incremental impact of DSM programs and behind-the-meter solar additions in New Mexico. The model output is also adjusted for electric vehicle impacts. SPS developed a base, low, and high scenario of estimated sales due to electric vehicles. The forecast assumes the base sales scenario. The model output may also be adjusted with information from SPS's Managed Account Sales group regarding SPS's largest commercial and industrial customers. The Managed Account Sales group provides information about known events that can impact energy sales that would not be captured in the historical data. Such events might include a scheduled increase in load for a specific customer due to a plant expansion, or a reduction in load stemming from a plant shutdown. The final adjusted output from the econometric models becomes part of the base case energy sales forecast.

Energy sales forecasts for SPS's partial requirement wholesale customers are developed based on historical consumption patterns or econometric models as described above, subject to contractual agreement with the customer.

4.08 Peak Demand Forecasts

SPS develops an econometric model, as described above, to forecast the monthly retail coincident peak demand. Total retail coincident peak demand is forecasted in aggregate at the source for the total SPS company level. The exogenous variables in the retail coincident peak demand model include weather, binary and trend variables, and retail energy sales. Retail energy sales are not adjusted for DSM savings, behind-the-meter solar, electric vehicle increases, or load increases or decreases as identified by the Managed Account Sales group prior to being used in the model. Instead, such adjustments are made to the output from the retail peak demand model.

The partial requirement wholesale customer coincident peak demand forecasts are determined by individual customer contractual agreement.

4.09 Monte Carlo Simulations

SPS has developed two higher forecast scenarios to the Financial Forecast: the Planning Forecast and the Electrification Forecast. The Planning Forecast is derived from Monte Carlo simulations of energy sales and coincident peak demand.

Monte Carlo simulation is a modeling technique that ascribes probabilistic characteristics to selected inputs and the output of a model. The Monte Carlo simulations are based on econometric models used to forecast energy sales and coincident peak demand. In particular, energy sales and coincident peak demand are modeled at the combined retail level of aggregation.

In these models, probability distributions are defined for exogenous variables with inherent uncertainty associated with their forecast values. Probability distributions are a realistic way of describing uncertainty in variables. An example of a variable with inherent uncertainty is the peak day average temperature in the coincident peak demand model. While SPS assumes the value will be 83.9 degrees Fahrenheit for each August during the forecast period, it is unlikely that each year the actual peak day maximum temperature will be 83.9 degrees Fahrenheit. The probability distributions contain the possible values for variables with inherent uncertainty over the forecast period, based on characteristics of the data set for each variable. The weather, economic and energy variables, and the model error are assumed to have inherent uncertainty in the models used to develop the Planning Forecast energy sales and coincident peak demand forecast scenario.

For each simulation run of these forecasting models, the values for the exogenous variables with inherent uncertainty are randomly selected from respective probability distribution. By using probability distributions, variables can have different probabilities of different outcomes occurring. Monte Carlo simulations calculate the model results over and over, each time using a different set of random values from the probability functions. The output from the Monte Carlo simulation models is then calibrated so that the 50% probability forecast is equal to the respective energy sales and coincident peak demand from the Financial Forecast.

The Electrification Scenario does not use the Monte Carlo simulation, despite being a high case scenario, as it is intended to highlight the upside risk of a specific industry trend rather than broader economic uncertainties. This difference in approach is responsible for the diverging trajectories in the latter years, as Monte Carlo simulations will typically result in a widening band of uncertainty over time. In the case of the Planning Scenario, this amplifies the relatively stable long-term growth trend from the Financial Forecast, as opposed to the more discrete risks being addressed in the Electrification Forecast.

4.10 Weather Adjustments

SPS incorporates several different weather variables in its forecasting models. For the energy sales models, SPS may include monthly heating degree days, cooling degree days, and precipitation. The heating degree days and the cooling degree days are calculated on a base of 65 degrees Fahrenheit for each day and then totaled by month.

Heating Degree Days = Max (65 - Average Daily Temperature, 0)

Cooling Degree Days = Max (Average Daily Temperature - 65, 0)

The coincident peak demand models include a peak day cooling degree day variable.

Weather during the forecast period is assumed to be normal. Normal weather is defined as a rolling 30-year average for heating degree days, cooling degree days, precipitation, maximum temperature, minimum temperature, and average temperature. The energy sales and coincident peak demand forecasts do not have any other weather normalization adjustments.

For historical periods, SPS weather normalizes historical energy sales and coincident peak demand data for variance analysis purposes. This weather normalization process involves subtracting weather-impacted energy sales or peak demand from actual sales or peak demand. Weather-impacted sales or peak demand is calculated by multiplying the forecast model weather variable coefficients by the variance of actual weather from normal weather.

Weather-Impacted Energy Sales =

Weather Coefficient * (Actual Weather-Normal Weather)

Weather Impacted Peak Demand =

Weather Coefficient * (Actual Weather-Normal Weather)

4.11 Demand-Side Management

SPS promotes DSM programs that help its customers reduce energy sales and peak demand through energy efficiency and education. Xcel Energy's DSM Regulatory Strategy and Planning group develops the projections of future and embedded DSM program savings.

SPS adjusts its retail energy sales and coincident peak demand forecasts with projected incremental DSM program savings. The incremental DSM program savings are calculated by subtracting DSM savings embedded in historical data from future DSM savings.

Incremental DSM Savings = Future DSM Savings – Embedded DSM Savings

SPS does not directly adjust its forecast models or model output for naturally occurring DSM savings that could be attributed to actions other than those of SPS. However, theoretically, the historical energy sales and coincident peak demand data used in SPS's forecast modeling process does have naturally occurring DSM savings embedded. Therefore, the forecast models and model output do account indirectly, through the historical data, for naturally occurring DSM savings. Naturally occurring DSM energy and peak demand savings do not impact SPS's sponsored DSM resources.

4.12 Demand Response, Energy Efficiency, and Behind-the-Meter Generation

The historical energy sales data used in SPS's forecast modeling process is net of behind-the-meter generation and demand response energy sales. Therefore, the forecast models and model output indirectly account, through the historical data, for behind-the-meter and demand response energy sales. The historical peak demand data used in the forecasting process has not been adjusted to account for behind-the-meter generation and demand response. Incremental residential and small commercial behind-the-meter solar generation has been removed from both energy sales and peak demand for New Mexico customers.

4.13 Changes From the Prior Filing

SPS significantly increased its outlook for both demand and energy since the filing of the last IRP, in large part due to the faster than expected expansion in oil and gas activity. The current Planning Forecast corresponds methodologically with the 2021 High Case scenario. See Figures 4F.5 and 4F.6 and Appendix E, Tables D-18 and D-19.

Figure 4F.5: Current and Prior IRP Forecast Comparison with Actual Firm Load Obligation Peak Demand

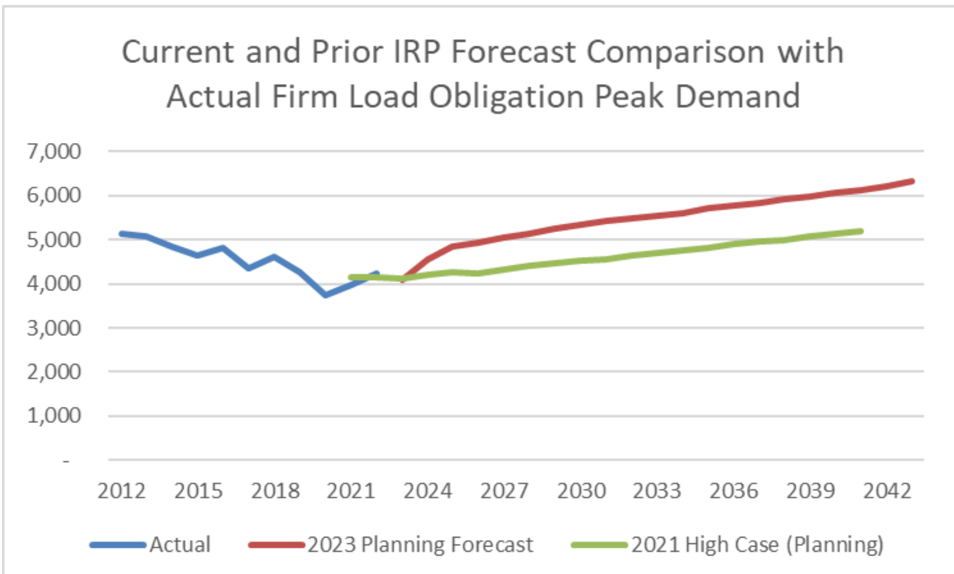
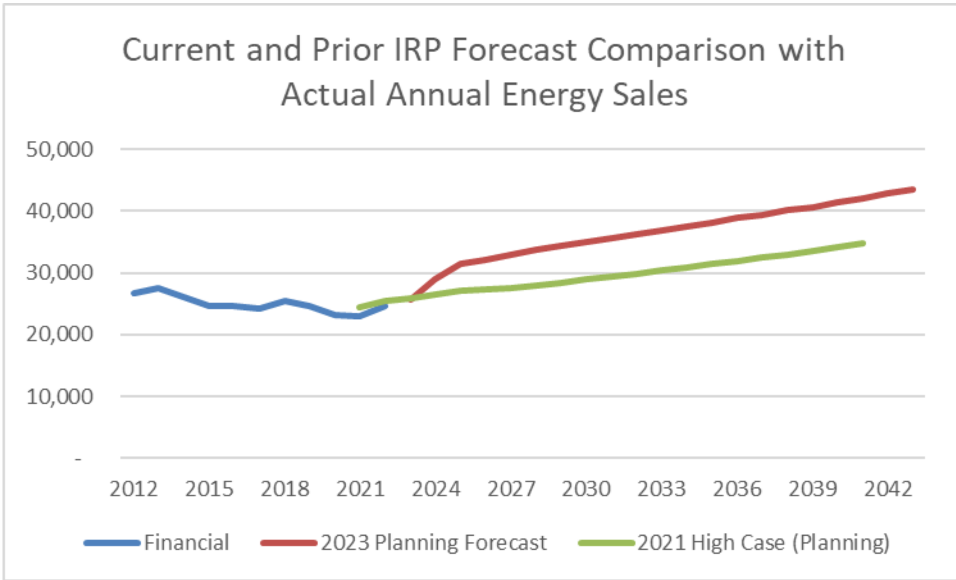


Figure 4F.6: Current and Prior IRP Forecast Comparison with Actual Annual Energy Sales



4.14 Forecast Accuracy

SPS reviews its demand and energy forecasts for accuracy annually. Appendix E (Table D-12 through Table D-17) provides a comparison of the actual energy sales and firm load obligation demand forecasts to the forecasted sales and firm load obligation demands, as required by the IRP Rule. Firm load obligation equals actual load less available interruptible load. See Figures 4F.7 and 4F.8. Note that recent energy forecasts have declined with the economic impacts driven by the COVID-19 pandemic. However, demand in 2022 still exceeded any of our most recent forecasts.

Figure 4F.7: Forecast Comparison with Actual Energy Sales

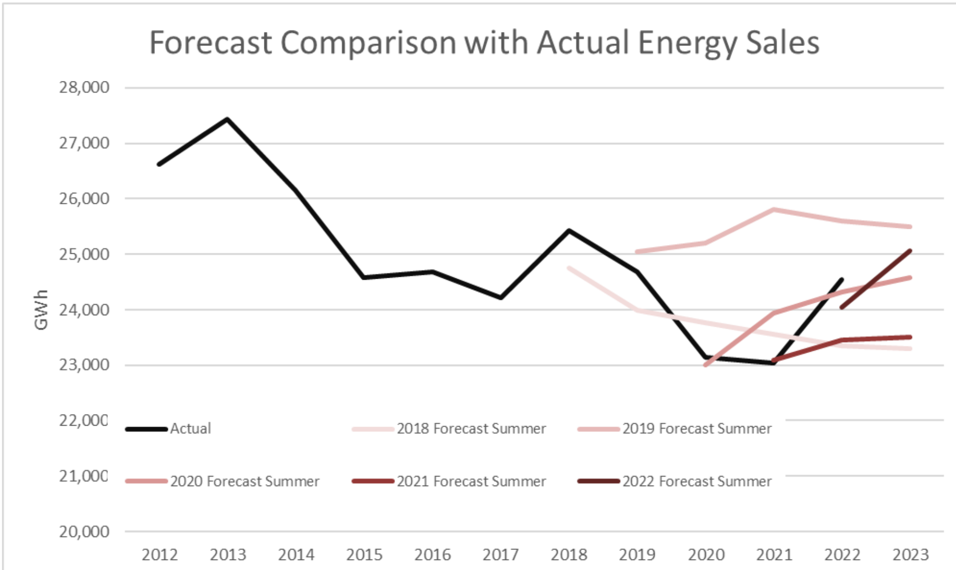
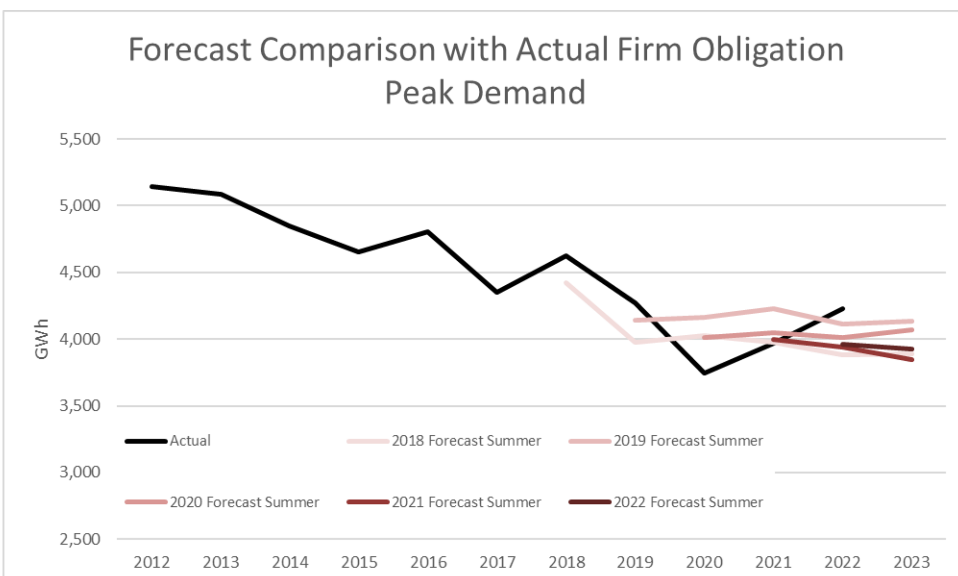


Figure 4F.8: Forecast Comparison with Actual Firm Load Obligation Peak



4.15 Econometric Model Parameters

Please refer to Appendix G, which provides the parameters associated with SPS's econometric forecasting model.

Section 5. LOAD AND RESOURCES TABLE

This section provides the Load and Resources ("L&R") table of existing loads and resources required by the IRP Rule, which specifically includes: (1) utility-owned generation; (2) energy storage resources; (3) existing and future contracted-for purchased power including QF purchases, (4) purchases through net metering programs, as appropriate, (5) demand-side resources, as appropriate, and (6) any other resources relied upon by the utility, such as pooling, wheeling, or coordination agreements effective at the time the IRP is filed.

Resource planners use a range of approaches to help identify the amounts, timing, and types of generation resources that should be added to meet increasing customer demand for electric power, including L&R tables. The function of an L&R table is to provide a comparison between the amount of electric generating supply and the peak load of a system. In years when load plus the planning reserve margin exceeds accredited capacity, additional generation is needed. As discussed in Section 4, SPS is presenting three different load forecasts. Tables 5-1, 5-2, and 5-3 provide summarized L&R tables under the Financial Forecast, Planning Forecast, and Electrification Forecast, respectively.

The Summarized L&R tables below provides foresight into the amounts and timing of future generation resource needs. As shown below in the summarized L&R Table 5-1, assuming SPS's recommended portfolio from its 2022 RFP is approved, SPS has sufficient supply-side resources to meet its planning reserve margin requirements during the Action Plan under the Financial Forecast and, therefore, does not require any new generating resources in that scenario and timeframe.

Table 5-1: Summarized Financial Forecast L&R Table

		2024 (MW)	2025 (MW)	2026 (MW)	2027 (MW)
(a)	Owned Generating Capacity	4,331	4,331	4,331	4,148
(b)	Purchased Power Capacity	1,087	1,080	1,119	1,108
(c)	Total Generation Capacity	5,418	5,411	5,625	5,560
(d)	Firm Load Obligation	4,375	4,581	4,566	4,645
(e)	Planning Reserve Margin (15%)	656	687	685	697
(f)	Total Firm Load + Reserve	5,031	5,268	5,251	5,342
(g)	Resources Position Long/(Short)	387	142	374	218

However, as shown below in Table 5-2, under the Planning Forecast, during the action period; SPS has a capacity shortfall in 2025 which would decrease in 2026 when two of the proposed new solar resources and battery energy storage resource are in-serviced. Due to the time required, it is extremely challenging to acquire new generating resources to meet this potential shortfall. Therefore, SPS is currently evaluating alternative means to address this potential need. For example, SPS has proposed new demand response programs in both Texas and New Mexico that could alleviate this need and, as described in more detail in Section 10, will also be advancing its efforts to add renewable resources through renewable energy customer programs like Renewable*Connect, filed in August 2023 and docketed as Case No. 23-00271-UT. Furthermore, prior to issuing the RFP next year, SPS will update its load forecast, and if necessary, will seek additional resources with an in-service date of 2027 (or earlier).

Table 5-2: Summarized Planning Forecast L&R Table

		2024 (MW)	2025 (MW)	2026 (MW)	2027 (MW)
(a)	Owned Generating Capacity	4,331	4,331	4,331	4,148
(b)	Purchased Power Capacity	1,087	1,080	1,119	1,108
(c)	Total Generation Capacity	5,418	5,411	5,625	5,560
(d)	Firm Load Obligation	4,559	4,845	4,925	5,033
(e)	Planning Reserve Margin (15%)	684	727	739	755
(f)	Total Firm Load + Reserve	5,243	5,572	5,664	5,788
(g)	Resources Position Long/(Short)	175	(161)	(38)	(229)

Finally, as shown below in Table 5-3, under the stakeholder-initiated Electrification Forecast, SPS has a growing capacity need beginning in 2026. Again, due to the time required to acquire needed generating resources, SPS will seek to resolve the capacity need through the alternatives means described above. However, due to the size of the capacity need in 2027 in this scenario, SPS's 2024 RFP will require generating resources with a 2027 in-service date.

Table 5-3: Summarized Electrification Forecast L&R Table

		2024 (MW)	2025 (MW)	2026 (MW)	2027 (MW)
(a)	Owned Generating Capacity	4,331	4,331	4,331	4,148
(b)	Purchased Power Capacity	1,087	1,080	1,119	1,108
(c)	Total Generation Capacity	5,418	5,411	5,625	5,560
(d)	Firm Load Obligation	4,444	4,848	5,141	5,543
(e)	Planning Reserve Margin (15%)	667	727	771	831
(f)	Total Firm Load + Reserve	5,111	5,575	5,913	6,375
(g)	Resources Position Long/(Short)	307	(164)	(287)	(815)

Table 5-4a:Summary of SPS Financial Forecast (2024-2033) L&R Table

SPS Load and Resources	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing Resources										
Owned - Thermal Resources	4,114	4,114	4,114	3,931	3,636	2,289	2,289	2,045	1,802	1,802
Owned - Renewable Resources	217	217	369	496	412	401	389	374	359	347
Owned - Storage Resources	0	0	24	24	24	25	25	25	26	27
Purchased Power - Thermal Resources	778	778	778	788	788	788	788	788	788	788
Purchased Power - Renewable Resources	308	302	293	273	199	194	189	183	149	148
Purchased Power - Storage Resources	0	0	48	47	47	47	46	45	44	43
Total Accredited Capacity (MW)	**5,418**	**5,411**	**5,625**	**5,560**	**5,106**	**3,743**	**3,726**	**3,461**	**3,168**	**3,154**
Load										
Retail	4,303	4,511	4,597	4,678	4,729	4,764	4,808	4,862	4,878	4,907
Firm Wholesale	0	0	0	0	0	0	0	7	8	0
Firm PR Load	100	100	0	0	0	0	0	0	0	0
DSM/Interruptible	(28)	(30)	(31)	(32)	(34)	(36)	(37)	(39)	(41)	(43)
Firm Load Obligation	**4,375**	**4,581**	**4,566**	**4,645**	**4,695**	**4,728**	**4,771**	**4,829**	**4,845**	**4,864**
Reserves										
Planning Reserve Margin (15%)	656	687	685	697	704	709	716	723	726	730
Total Planning Reserve Margin	**656**	**687**	**685**	**697**	**704**	**709**	**716**	**723**	**726**	**730**
Capacity Requirement	5,031	5,268	5,251	5,342	5,399	5,438	5,487	5,546	5,562	5,593
Resource Position (MW): Long/(Short)	**387**	**142**	**374**	**218**	**(292)**	**(1,695)**	**(1,760)**	**(2,085)**	**(2,394)**	**(2,440)**

Table 5-4b: Summary of SPS Financial Forecast (2034-2043) L&R Table

SPS Load and Resources	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Existing Resources	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Owned - Thermal Resources	1,802	1,559	1,559	1,220	1,220	881	881	334	334	334
Owned - Renewable Resources	335	323	310	298	288	278	278	278	278	127
Owned - Storage Resources	27	28	28	29	29	28	28	27	27	0
Purchased Power - Thermal Resources	230	230	230	230	230	230	230	230	0	0
Purchased Power - Renewable Resources	146	87	54	52	51	50	50	50	29	29
Purchased Power - Storage Resources	41	40	40	39	38	38	37	36	36	0
Total Accredited Capacity (MW)	**2,581**	**2,267**	**2,221**	**1,868**	**1,856**	**1,505**	**1,504**	**955**	**704**	**490**
Load										
Retail	4,944	4,990	5,018	5,048	5,080	5,118	5,143	5,181	5,216	5,262
Firm Wholesale	0	0	0	0	0	0	0	0	0	0
Firm PR Load	0	0	0	0	0	0	0	0	0	0
DSM/Interruptible	(46)	(47)	(48)	(50)	(52)	(55)	(58)	(61)	(65)	(68)
Firm Load Obligation	**4,899**	**4,943**	**4,970**	**4,998**	**5,028**	**5,063**	**5,085**	**5,120**	**5,151**	**5,193**
Reserves										
Planning Reserve Margin (15%)	735	742	745	750	754	759	763	768	773	779
Total Planning Reserve Margin	**735**	**742**	**745**	**750**	**754**	**759**	**763**	**768**	**773**	**779**
Capacity Requirement	5,634	5,685	5,715	5,748	5,782	5,822	5,848	5,887	5,924	5,972
Resource Position (MW): Long/(Short)	**(3,052)**	**(3,418)**	**(3,494)**	**(3,879)**	**(3,926)**	**(4,318)**	**(4,344)**	**(4,932)**	**(5,220)**	**(5,482)**

Table 5-5a:Summary of SPS Planning Forecast (2024-2033) L&R Table

SPS Load and Resources	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing Resources										
Owned - Thermal Resources	4,114	4,114	4,114	3,931	3,636	2,289	2,289	2,045	1,802	1,802
Owned - Renewable Resources	217	217	369	496	412	401	389	374	359	347
Owned - Storage Resources	0	0	24	24	24	25	25	25	26	27
Purchased Power - Thermal Resources	778	778	778	788	788	788	788	788	788	788
Purchased Power - Renewable Resources	308	302	293	273	199	194	189	183	149	148
Purchased Power - Storage Resources	0	0	48	47	47	47	46	45	44	43
Total Accredited Capacity (MW)	**5,418**	**5,411**	**5,625**	**5,560**	**5,106**	**3,743**	**3,726**	**3,461**	**3,168**	**3,154**
Load										
Retail	4,487	4,774	4,956	5,066	5,180	5,278	5,375	5,464	5,518	5,591
Firm Wholesale	0	0	0	0	0	0	0	0	0	0
Firm PR Load	100	100	0	0	0	0	0	0	0	0
DSM/Interruptible	(28)	(30)	(31)	(32)	(34)	(36)	(37)	(39)	(41)	(43)
Firm Load Obligation	**4,559**	**4,845**	**4,925**	**5,033**	**5,146**	**5,242**	**5,338**	**5,425**	**5,477**	**5,548**
Reserves										
Planning Reserve Margin (15%)	684	727	739	755	772	786	801	814	822	832
Total Planning Reserve Margin	**684**	**727**	**739**	**755**	**772**	**786**	**801**	**814**	**822**	**832**
Capacity Requirement	5,243	5,572	5,664	5,788	5,918	6,029	6,138	6,239	6,299	6,380
Resource Position (MW): Long/(Short)	**175**	**(161)**	**(38)**	**(229)**	**(812)**	**(2,286)**	**(2,412)**	**(2,778)**	**(3,131)**	**(3,226)**

Table 5-5b: Summary of SPS Planning Forecast (2034-2043) L&R Table

SPS Load and Resources	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Existing Resources										
Owned - Thermal Resources	1,802	1,559	1,559	1,220	1,220	881	881	334	334	334
Owned - Renewable Resources	335	323	310	298	288	278	278	278	278	127
Owned - Storage Resources	27	28	28	29	29	28	28	27	27	0
Purchased Power - Thermal Resources	230	230	230	230	230	230	230	230	0	0
Purchased Power - Renewable Resources	146	87	54	52	51	50	50	50	29	29
Purchased Power - Storage Resources	41	40	40	39	38	38	37	36	36	0
Total Accredited Capacity (MW)	**2,581**	**2,267**	**2,221**	**1,868**	**1,856**	**1,505**	**1,504**	**955**	**704**	**490**
Load										
Retail	5,641	5,750	5,829	5,883	5,979	6,044	6,106	6,189	6,269	6,393
Firm Wholesale	0	0	0	0	0	0	0	0	0	0
Firm PR Load	0	0	0	0	0	0	0	0	0	0
DSM/Interruptible	(46)	(47)	(48)	(50)	(52)	(55)	(53)	(56)	(71)	(68)
Firm Load Obligation	**5,595**	**5,703**	**5,780**	**5,833**	**5,927**	**5,989**	**6,053**	**6,133**	**6,198**	**6,325**
Reserves										
Planning Reserve Margin (15%)	839	855	867	875	889	898	908	920	930	949
Total Planning Reserve Margin	**839**	**855**	**867**	**875**	**889**	**898**	**908**	**920**	**930**	**949**
Capacity Requirement	6,435	6,559	6,647	6,708	6,816	6,887	6,961	7,053	7,128	7,274
Resource Position (MW): Long/(Short)	**(3,854)**	**(4,292)**	**(4,426)**	**(4,840)**	**(4,960)**	**(5,383)**	**(5,457)**	**(6,098)**	**(6,424)**	**(6,784)**

Table 5-6a:Summary of SPS Electrification Forecast (2024-2033) L&R Table

SPS Load and Resources	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing Resources										
Owned - Thermal Resources	4,114	4,114	4,114	3,931	3,636	2,289	2,289	2,045	1,802	1,802
Owned - Renewable Resources	217	217	369	496	412	401	389	374	359	347
Owned - Storage Resources	0	0	24	24	24	25	25	25	26	27
Purchased Power - Thermal Resources	778	778	778	788	788	788	788	788	788	788
Purchased Power - Renewable Resources	308	302	293	273	199	194	189	183	149	148
Purchased Power - Storage Resources	0	0	48	47	47	47	46	45	44	43
Total Accredited Capacity (MW)	**5,418**	**5,411**	**5,625**	**5,560**	**5,106**	**3,743**	**3,726**	**3,461**	**3,168**	**3,154**
Load										
Retail	4,372	4,777	5,172	5,576	5,934	6,238	6,554	6,875	7,182	7,463
Firm Wholesale	0	0	0	0	0	0	0	0	0	0
Firm PR Load	100	100	0	0	0	0	0	0	0	0
DSM/Interruptible	(28)	(30)	(31)	(32)	(34)	(36)	(37)	(39)	(41)	(43)
Firm Load Obligation	**4,444**	**4,848**	**5,141**	**5,543**	**5,900**	**6,202**	**6,517**	**6,836**	**7,141**	**7,420**
Reserves										
Planning Reserve Margin (15%)	667	727	771	831	885	930	977	1,025	1,071	1,113
Total Planning Reserve Margin	**667**	**727**	**771**	**831**	**885**	**930**	**977**	**1,025**	**1,071**	**1,113**
Capacity Requirement	5,111	5,575	5,913	6,375	6,785	7,133	7,494	7,861	8,212	8,533
Resource Position (MW): Long/(Short)	**307**	**(164)**	**(287)**	**(815)**	**(1,678)**	**(3,390)**	**(3,768)**	**(4,400)**	**(5,044)**	**(5,379)**

Table 5-6b: Summary of SPS Electrification Forecast (2034-2043) L&R Table

SPS Load and Resources	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Existing Resources										
Owned - Thermal Resources	1,802	1,559	1,559	1,220	1,220	881	881	334	334	334
Owned - Renewable Resources	335	323	310	298	288	278	278	278	278	127
Owned - Storage Resources	27	28	28	29	29	28	28	27	27	0
Purchased Power - Thermal Resources	230	230	230	230	230	230	230	230	0	0
Purchased Power - Renewable Resources	146	87	54	52	51	50	50	50	29	29
Purchased Power - Storage Resources	41	40	40	39	38	38	37	36	36	0
Total Accredited Capacity (MW)	**2,581**	**2,267**	**2,221**	**1,868**	**1,856**	**1,505**	**1,504**	**955**	**704**	**490**
Load										
Retail	7,674	7,893	8,094	8,110	7,698	7,298	6,878	6,596	6,650	6,698
Firm Wholesale	0	0	0	0	0	0	0	0	0	0
Firm PR Load	0	0	0	0	0	0	0	0	0	0
DSM/Interruptible	(46)	(47)	(48)	(50)	(52)	(55)	(53)	(56)	(71)	(68)
Firm Load Obligation	**7,628**	**7,846**	**8,046**	**8,060**	**7,646**	**7,243**	**6,825**	**6,540**	**6,579**	**6,630**
Reserves										
Planning Reserve Margin (15%)	1,144	1,177	1,207	1,209	1,147	1,087	1,024	981	987	994
Total Planning Reserve Margin	**1,144**	**1,177**	**1,207**	**1,209**	**1,147**	**1,087**	**1,024**	**981**	**987**	**994**
Capacity Requirement	8,772	9,023	9,253	9,269	8,792	8,330	7,848	7,521	7,566	7,624
Resource Position (MW): Long/(Short)	**(6,191)**	**(6,757)**	**(7,032)**	**(7,401)**	**(6,937)**	**(6,825)**	**(6,345)**	**(6,565)**	**(6,862)**	**(7,134)**

Section 6. NEW LOAD AND FACILITIES ARISING FROM SPECIAL SERVICE AGREEMENTS, ECONOMIC DEVELOPMENT PROJECTS AND AFFILIATE TRANSACTIONS

SPS does not currently have projects or expected projects that meet these criteria.

Section 7. IDENTIFICATION OF RESOURCE OPTIONS

This section discusses the types of generic resources evaluated by SPS to fill its future resource needs as part of this IRP. This section describes the various supply-side and demand-side resources, as well as assumptions about the costs of those resources. It also discusses transmission upgrades costs and the accredited capacity assigned to different resource types. The selection from among these resource options is discussed in Section 9.

In evaluating the most cost-effective portfolio of resources described in Section 9, SPS incorporated several different resources, including supply-side generating resources, energy storage, and demand-side resources in its production cost modeling. These resources play distinct roles in meeting an electric utility's demand and energy requirements. Supply-side resources provide generation capacity to serve load, whereas demand side resources act to reduce the level of customer demand for electric power so fewer supply side resources are required. Supply-side resources generally fall into two categories: dispatchable or variable energy resources. Dispatchable resources include traditional supply-side resources such as fossil fuel-based generation and battery energy storage. Each of these resources can be dispatched as the demand (or need) for power changes (increases or decreases) throughout the day. Variable energy resources, on the other hand, are intermittent supply-side “as available” generation resources, effectively the energy produced is a function of the timing and force created by the wind blowing or the solar radiation intensity and conversion of photons of light to electrical voltage (e.g., photovoltaic “PV”). Variable Energy resources are typically must-take resources, which at times can create operational issues related to their integration into the electrical power grid. Energy storage is typically achieved through Battery Energy Storage System (“BESS”), which are electrochemical devices that store energy for use when needed. Battery chemistries vary in technical characteristics; however, lithium-ion chemistries are currently the most widely utilized in the U.S. The supply-side resources SPS considered in its EnCompass analysis are described in more detail below:

Examples of Supply Side Resources

- Combustion Turbine Generator (“CTG”) – CTGs are typically referred to as simple-cycles because they operate on a single thermodynamic cycle known as the Brayton Cycle. CTGs can operate on several fuel sources but currently are typically fired with natural gas which turns a turbine coupled with an electric generator to generate electricity. Recent CTG technological advancements have enabled operation, for both new and retrofitted CTGs, to utilize carbon-free hydrogen as an alternative fuel source. CTGs are available in a wide range of sizes (4 MW to over 400 MW) and are typically inexpensive to build but are relatively inefficient sources of generation. As such, they are often considered “peaking” units, which are utilized during times of high electric demand. CTGs also provide extremely fast start capabilities and ramp rates, providing the capability to follow demand and intermittent renewable generation, such as wind and solar.

- Combined Cycle ("CC") facilities utilize single or multiple CTGs in conjunction with Heat Recovery Steam Generators ("HRSG") and a Steam Turbine Generator ("STG") to generate electricity. These facilities are known as CCs because they combine the Brayton Cycle (mentioned above in the CTG section) with the Rankine Cycle (the thermodynamic cycle in HRSGs and STGs). In the Rankine Cycle, the waste heat from the CTG's exhaust gas is ducted through a HRSG which generates steam to turn a steam turbine coupled with an electric generator which produces additional electric power along with the CTGs. CCs can operate in multiple configurations, i.e., 1-on-1, 2-on-1, or 3-on-1, with the first number being the number of CTGs and HRSGs and the second number being the steam turbine, which is appropriately sized to efficiently utilize the total CTG waste heat. For example, a 2-on-1 CC consists of two CTGs and HRSGs and one STG. CCs can also operate on various fuel sources, including hydrogen, since the base motive drivers are the CTGs mentioned in the CTG section above. CC units come in a variety of sizes near 100 MW to over 1,600 MW depending on the specific configuration of the facility. CC units have higher installed costs than CTG units, but better efficiency and operating costs, thus CCs offer more expensive capacity but lower cost energy when compared to simple cycle CTGs.

- Reciprocating Internal Combustion Engine ("RICE") – RICE are internal combustion engines that use reciprocating motion to convert heat energy from traditional fossil fuels into mechanical work, RICE resources are typically smaller than CTGs and provide fast start and ramp times, therefore providing excellent peaking and load following capabilities.
- Small Modular Reactor ("SMR") - SMRs are a type of nuclear reactor that are generally much smaller than traditional nuclear reactors. Their physical footprint is smaller than traditional nuclear reactors and more modular, making it possible to be factory assembled and delivered as a unit. These types of units can be more cost effective and quicker to construct than traditional nuclear reactors. SMRs provide carbon-free, dispatchable generation.
- Energy Storage – Lithium-ion battery storage has become increasingly popular due to declining costs. These battery storage devices typically range in size from 10 MW to over 250 MW and vary in duration from 2 – 10 hours. For short duration requirements, battery storage can bring about frequency control and stability, and, for longer duration requirements, they can bring about energy management or reserves.
- Solar – Solar generation resources convert the sun's energy (photons of light) into electricity. Solar generation has several forms, such as PV, concentrating PV, or concentrating solar power. Solar generation is intermittent, like other variable energy resources. In SPS's service territory, solar generation capacity factors typically range from 30% - 35%. Solar

generation is only available during the daytime and its output is coincident with the time of the day (i.e., as the sun rises and falls, so does the solar generation output).

- Wind – Wind generation typically consists of large, three-bladed turbines mounted atop towers over 250 feet tall arranged over several thousand acres of land. Wind generation consists of multiple Wind Turbine Generators with aggregated capacities up to hundreds of MW. Because the wind drives the turbines, the generation from a wind turbine is considered intermittent and can be difficult to predict. Wind generation units in New Mexico and Texas typically have an annual capacity factor in the 45-55% range, depending on the specific location within these regions. As maximum wind generation output is variable and often noncoincidental to peak system loads, wind generation has a low-capacity value when compared to other generating resource (including solar generation).

Demand Side Resources

- Demand side resources act to reduce the demand for electric power and include a variety of measures such as EE, energy conservation, LM, and demand response. There are two basic types of demand-side resources: peak shavers and energy savers. Peak shavers are used to reduce a customer's demand and energy requirements during periods of high demand. Examples of peak shaver DSM options include ICO and the Saver's Switch programs. Energy savers are used to reduce energy over all periods of the year. An example of an energy saver would be replacement of incandescent light bulbs with more energy efficient LED bulbs to reduce energy consumption throughout the year.

Transmission Upgrades

- Investments in transmission can be used as an alternative for investments in new generating facilities or demand-side resources, where transmission upgrades are used to access existing generation within other transmission-constrained areas.

7.01 Supply-Side Resource Options Considered

In addition to the five existing commercially available supply-side resource options described above, (i.e., CTG, CC, BESS, Solar, and Wind), SPS's 2023 IRP considered emerging technologies, such as long-duration energy storage, and the conversion of thermal generation to operate on clean alternative fuel (e.g., hydrogen), and incorporated stakeholder requests to evaluate SMRs and RICE resources. SPS used generic cost and characteristics assumptions such as asset life, capital costs, fixed and variable operating and maintenance costs, fuel type (when applicable), heat rates (when applicable), and carbon dioxide ("CO_2") emissions. These general generic characteristics are carried through each year of the Planning Period and costs are escalated where stated.

7.02 Generic Resources

Generic characteristics were developed either "in-house" utilizing SPS's experience with these technologies and leveraging market relationships to validate any characteristic assumptions, or through external sources, such as the National Renewable Energy Laboratory's ("NREL") 2023 Annual Technology Baseline ("ATB"). The resource characteristics were then included in the EnCompass production cost model to represent how these various technologies would integrate with the existing SPS electric system to serve future customer load projections. The cost and technical characteristic assumptions for each supply-side resource are described in more detail below.

Thermal Resources Assumptions

The modeling input assumptions for new CTGs and CCs were developed in-house by Xcel Energy, whereas the modeling input assumptions for new RICE resources were provided by original equipment manufacturer, Wartsila. The modeling input assumptions are summarized below in Table 7-1, with cost assumptions presented in 2028 dollars and escalated at 2% per year thereafter. Although SPS did not incorporate mercury emissions for new generic gas resources into its EnCompass analysis, SPS expects mercury emissions will align with Jones Units 3 and 4 in Table 3-11 for CTGs.

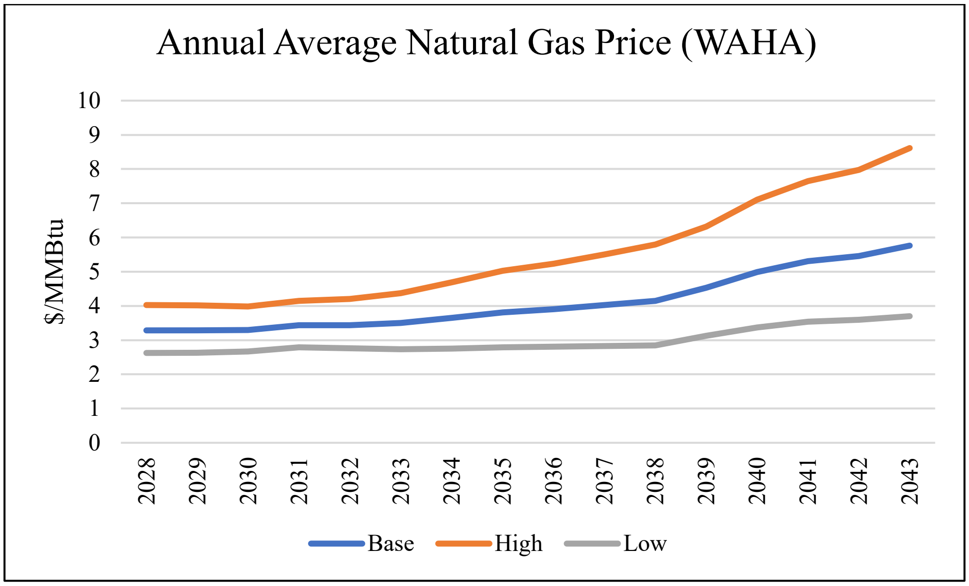
Note: None of the costs shown in Table 7-1 include transmission network upgrade costs.

Table 7-1: Thermal Resource Assumptions

Tech	Tech. Desc.	Summer Peak Capacity (MW)	Capital Cost (2028$/KW)	Fixed O&M (2028$/kW)	Variable O&M (2028$/MWh)	Summer Heat Rate (Btu/kWh)	Availability (%)	Life (yr)	CO_2 release rate (lb/kWh)
CTG	7F.05 w/SCR	200.9	$782	$6.93	$0.00	9,017	95.78	40	1.05
CC	2x1 7F.05	771	$1,116	$7.89	$1.37	6,258	95.78	40	0.77
RICE	3x Wartsila 18V50SG	56.4	$1,504	$15.46	$5.52	8,128	95.78	40	1.07

The cost of natural gas is an important consideration when evaluating new thermal supply-side resources. SPS evaluated three different natural gas price forecasts, which are summarized below in Figure 7F.1 and the underlying data is included in Appendix H. The total fuel cost will vary based on efficiency of each generator and the output (i.e., capacity factor) and changes on an annual basis.

Figure 7F.1: Annual Average Natural Gas Price



Energy Storage Assumptions

SPS relied upon NREL 2023 ATB cost data as the basis for annual cost assumptions for BESS resources. The maximum and minimum capacity options in the model, maximum capacity factor, and service life for 4-, 6-, and 8-hour BESS resources are summarized below in Table 7-2, with the capital cost and fixed Operations and Maintenance ("O&M") cost assumptions summarized in Table 7-3 and 7-4.

Note: None of the costs shown in Tables 7-3 and 7-4 include transmission network upgrade costs.

Table 7-2: BESS Assumptions

Technology	Max Capacity option (MW/yr.)	Min Capacity option (MW/yr.)	Max. Capacity Factor (%)	Life (yr.)	CO_2 Released Rate(lb./MMBtu)
BESS - 4hr	1,000	10	16.7%	20	N/A
BESS - 6hr	1,000	10	25.0%	20	N/A
BESS - 8hr	1,000	10	33.3%	20	N/A

Table 7-3: Battery Energy Storage Annual Capital Costs

Capital Cost ($/kW)[29]			
EOY	**Battery – 4hr**	**Battery – 6hr**	**Battery – 8hr**
2028	$1,079.03	$1,497.35	$1,915.66
2029	$1,066.38	$1,474.81	$1,883.25
2030	$1,052.41	$1,450.16	$1,847.91
2031	$1,062.08	$1,462.35	$1,862.62
2032	$1,071.58	$1,474.25	$1,876.92
2033	$1,080.89	$1,485.84	$1,890.80
2034	$1,090.00	$1,497.10	$1,904.21
2035	$1,098.89	$1,508.01	$1,917.13
2036	$1,107.54	$1,518.53	$1,929.52
2037	$1,115.94	$1,528.64	$1,941.35
2038	$1,124.06	$1,538.33	$1,952.59
2039	$1,131.90	$1,547.55	$1,963.21
2040	$1,261.51	$1,723.04	$2,184.57
2041	$1,392.33	$1,899.76	$2,407.20
2042	$1,483.03	$2,021.38	$2,559.73
2043	$1,491.35	$2,030.50	$2,569.66

[29] 30% ITC was considered.

Table 7-4: Battery Energy Storage Annual Fixed Operation and Maintenance Cost

Fixed Operation and Maintenance Cost ($/kW-yr.)			
EOY	**Battery - 4hr**	**Battery - 6hr**	**Battery - 8hr**
2028	$38.54	$53.48	$68.42
2029	$38.08	$52.67	$67.26
2030	$37.59	$51.79	$66.00
2031	$37.93	$52.23	$66.52
2032	$38.27	$52.65	$67.03
2033	$38.60	$53.07	$67.53
2034	$38.93	$53.47	$68.01
2035	$39.25	$53.86	$68.47
2036	$39.55	$54.23	$68.91
2037	$39.85	$54.59	$69.33
2038	$40.15	$54.94	$69.74
2039	$40.42	$55.27	$70.11
2040	$40.69	$55.58	$70.47
2041	$40.95	$55.88	$70.80
2042	$41.20	$56.15	$71.10
2043	$41.43	$56.40	$71.38

Solar and Wind Assumptions

SPS also relied upon NREL 2023 ATB cost data as a baseline for estimating annual costs for wind and solar generating resources. The maximum and minimum capacity options in the model, projected capacity factor, and service life for new wind and solar resources are summarized below in Table 7-5, with the projected annual Capital Cost, Fixed Operation and Maintenance Cost and levelized cost of energy in Tables 7-6, 7-7 and 7-8 respectively.

Note: None of the costs shown in Tables 7-6, 7-7, and 7-8 include transmission network upgrade costs.

Table 7-5: Renewable Resources Assumptions

Technology	Max Capacity option (MW/yr.)	Min Capacity option (MW/yr.)	Capacity Factor (%)	Life (yr.)	CO_2 Released Rate(lb./MMBtu)
Utility Scaled Solar (Single-Axis tracking)	No Limit	10	32%	30	N/A
Wind (Onshore)	1000	10	52%	30	N/A

Table 7-6: Renewable Resources Capital Costs

Capital Cost ($/kW)		
EOY	**Wind**	**Solar**
2028	$1,423.25	$1,333.86
2029	$1,430.00	$1,316.22
2030	$1,436.19	$1,296.86
2031	$1,457.60	$1,275.72
2032	$1,479.19	$1,252.71
2033	$1,500.94	$1,227.75
2034	$1,522.85	$1,200.76
2035	$1,544.92	$1,171.65
2036	$1,567.14	$1,181.95
2037	$1,589.51	$1,192.02
2038	$1,612.02	$1,201.87
2039	$1,634.66	$1,211.46
2040	$1,657.43	$1,220.78
2041	$1,680.31	$1,229.80
2042	$1,703.30	$1,238.52
2043	$1,726.38	$1,246.90

Table 7-7: Renewable Resources Fixed Operations and Maintenance Costs

Fixed Operation and Maintenance Cost ($/kW-yr.)		
EOY	**Wind**	**Solar**
2028	$32.97	$22.56
2029	$33.34	$22.52
2030	$33.72	$22.46
2031	$34.33	$22.38
2032	$34.94	$22.30
2033	$35.57	$22.19
2034	$36.20	$22.07
2035	$36.84	$21.93
2036	$37.50	$22.28
2037	$38.16	$22.64
2038	$38.83	$23.00
2039	$39.51	$23.36
2040	$40.21	$23.73
2041	$40.91	$24.10
2042	$41.62	$24.48
2043	$42.34	$24.86

Table 7-8: Renewable Resources Levelized Cost of Energy ("LCOE")

Levelized Cost by In-Service Year ($/MWh)		
EOY	**Wind**	**Solar**
2028	$9.00	$18.86
2029	$8.49	$17.87
2030	$7.95	$16.83
2031	$7.86	$15.73
2032	$7.76	$14.57
2033	$7.65	$13.35
2034	$7.53	$12.06
2035	$7.39	$10.70
2036	$7.25	$10.44
2037	$7.09	$10.16
2038	$6.93	$9.86
2039	$6.74	$9.54
2040	$6.55	$9.20
2041	$6.34	$8.84
2042	$6.12	$8.45
2043	$5.88	$8.03

Transmission Network Upgrade Costs

Connecting new generating resources such as solar, wind and combined cycle generation to the transmission system often requires upgrades to existing transmission infrastructure, such as new breakers, transformers, and transmission lines. The Southwest Power Pool is responsible for assessing the need and assigning the costs of transmission network upgrades. Any costs are then directly assigned to the new generating resource. As described in Section 9, SPS evaluated two different levels of transmission network upgrade costs: $400/kW and $600/kW. SPS assigned these costs to new wind generating resources, solar generating resources, and combined cycle generation. SPS did not assign any transmission network upgrade costs to CTGs, BESS, Long Duration Storage ("LDS"), RICE, and SMRs on the assumption these dispatchable resources would be either co-located at facilities that did receive transmission network upgrade costs (i.e., wind, solar, or CC) or they would replace retiring thermal generation. SPS did allow 500 MW of surplus wind to be constructed at Tolk and 1,021MW of solar generation to be constructed at the site of retiring gas-steam generators without incurring the transmission network upgrade costs through 2030, increasing to 2,769MW by 2043. Figures 7F.2 and 7F.3 illustrate how the additional transmission network upgrade costs impact Solar and Wind LCOEs.

Figure 7F.2: Wind LCOE with and without Transmission Network Upgrade Costs

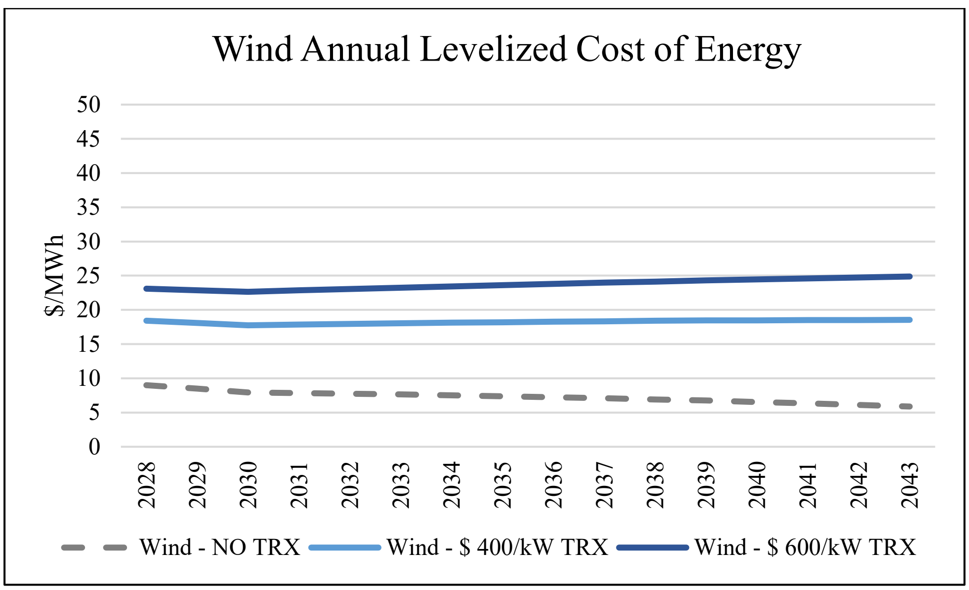
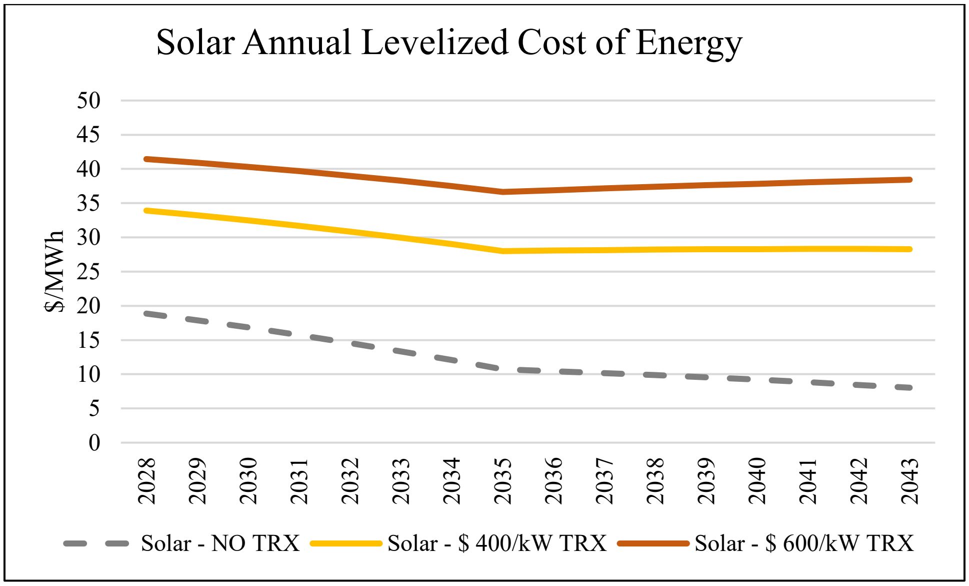


Figure 7F.3: Solar LCOE with and without Transmission Network Upgrade Costs



Accredited Capacity - Planning Reserve Margin

Each of the supply-side resource technologies described above contributes capacity to SPS's planning reserve margin requirements. Thermal resources, such as CTGs, CCs, and RICE can be dispatched when needed and currently provide 100% of their tested capacity towards SPS's planning reserve margin. Variable energy resources, such as wind generation and solar generation and limited duration energy storage resources, contribute less than their full nameplate generating capacity toward meeting SPS's planning reserve margin requirement. The Southwest Power Pool determines the methodology that is used to determine the amount of renewable capacity and limited duration energy storage that can be applied to SPS's planning reserve requirement. The Southwest Power Pool proposes to replace the current renewable and energy storage accreditation methodology with the Effective Load Carrying Capability ("ELCC") methodology, effective Summer 2026. The ELCC methodology will result in decreasing accreditation of renewable resources and energy storage resources as the penetration of those resources increase across the Southwest Power Pool Balancing Authority Area. When evaluating the most cost-effective portfolio of resources, SPS utilized the projected ELCC values for the accredited capacity of solar, wind and 4-, 6- and 8- hour energy storage resources. The projected summer and winter accredited capacity values are summarized below in Figures 7F.4 and 7F.5.

Figure 7F.4: Projected ELCC Values – Summer

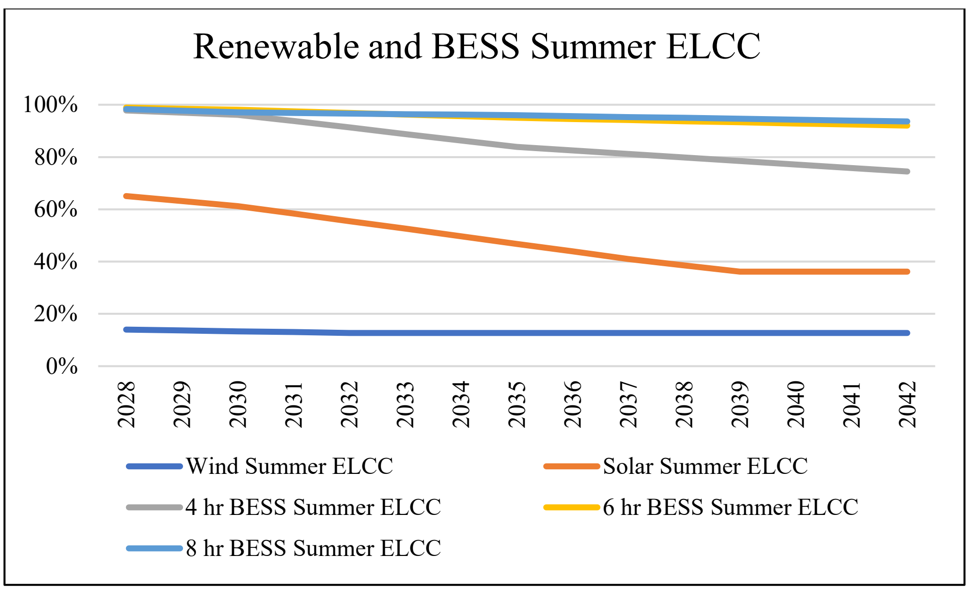
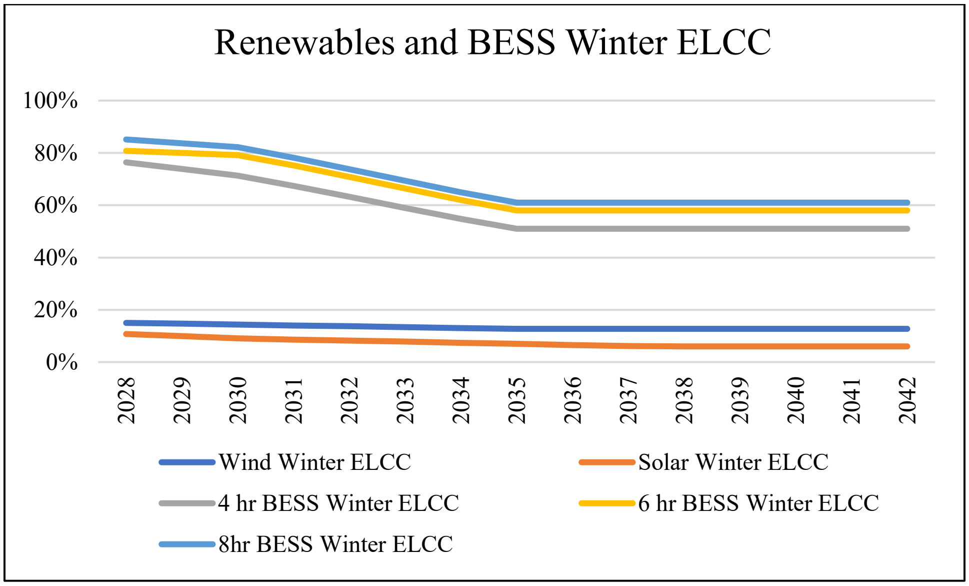


Figure 7F.5: Projected ELCC Values – Winter



Market Energy Purchases (and sales)

As described in Section 3.05, SPS is a member of the Southwest Power Pool integrated market. In addition to the supply-side resource options discussed above, SPS's modeling includes the option to buy and sell energy into the SPS market. Figures 7F.6 and 7F.7 show the annual average on- and off- peak market energy prices used in SPS's EnCompass Analysis. As shown in the figures below, SPS modeled a base, low, and high market energy price forecast.

Figure 7F.6: Annual Average On-Peak Market Energy Price Forecast

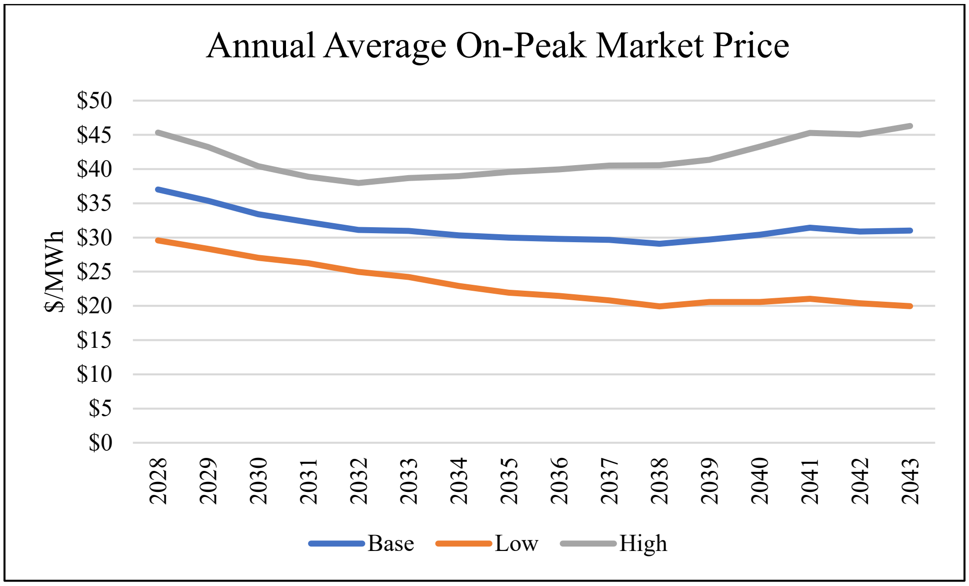
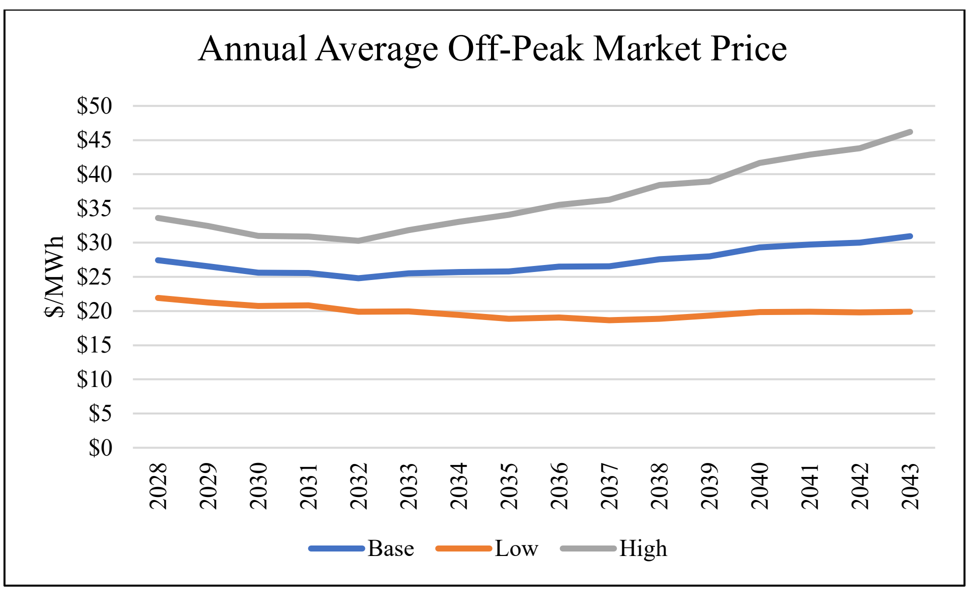


Figure 7F.7: Annual Average Off-Peak Market Price



Emerging Technologies

As discussed in Section 9, in addition to commercially available supply side resources, such as wind, solar, and CTGs, SPS considered several sensitivity studies including emerging technologies such as long-term energy storage, traditional thermal generation converted to operate on clean fuels, and SMRs. These emerging technologies were made available to the model in certain scenarios, as explained in more detail in Section 9.

Long Duration Storage

Unlike current commercially available lithium-ion BESS resources, Long Duration Storage ("LDS") can store energy for multiple days, or even weeks. Energy storage can be achieved through different approaches, including mechanical, thermal, electrochemical or chemical storage. Although LDS is not currently commercially available, Xcel Energy does have initial pilot programs in progress. For the purposes of its EnCompass modeling, SPS assumed 100-hour LDS resources and relied upon a 2021 McKinsey and Company study[30] for annual costs assumptions. The characteristic of the LDS was modeled by SPS and is summarized in Table 7-9. Also, Table 7-10 represents capital costs and fixed operation and maintenance costs of the modeled LDS.

[30] Bettoli, A., et al. "Net-zero power: Long-duration energy storage for a renewable grid." *McKinsey & Company, November* 22 (2021).

Table 7-9: LDS Assumptions

Technology	Duration (hr.)	Max Capacity option (MW/yr.)	Min Capacity option (MW/yr.)	Capacity Factor (%)	Life (yr.)	CO_2 Released Rate(lb./MMBtu)
Long Duration Storage	100	1000	10	14.8	15	NA

Table 7-10:LDS Capital and Fixed Operation and Maintenance Costs

EOY	Capital Cost ($/kW)	FOM ($/kW-yr.)
2028	$2,164.00	$3.31
2029	$2,005.00	$2.25
2030	$1,838.00	$2.25
2031	$1,769.00	$2.25
2032	$1,697.00	$2.25
2033	$1,621.00	$2.25
2034	$1,542.00	$2.25
2035	$1,458.00	$2.25
2036	$1,449.00	$2.25
2037	$1,438.00	$2.25
2038	$1,427.00	$2.25
2039	$1,414.00	$2.25
2040	$1,400.00	$2.25
2041	$1,400.00	$2.25
2042	$1,400.00	$2.25
2043	$1,400.00	$2.25

Traditional Thermal Generation with Hydrogen Capability

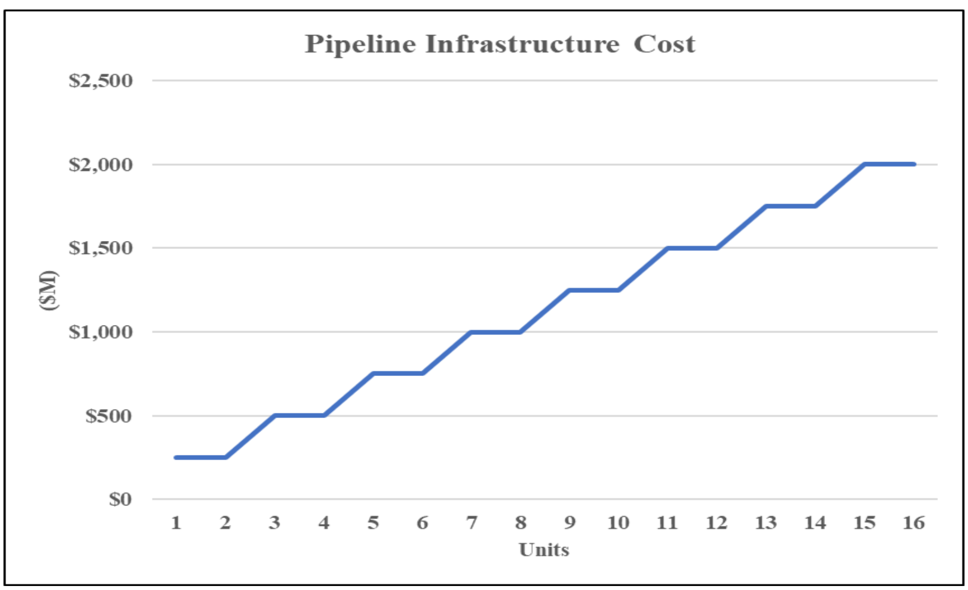
Clean fuels, such as Hydrogen, can play a vital role in meeting the State's carbon-free goals while retaining the flexibility of thermal generation. However, wide-scale deployment of the technology requires progress in hydrogen generation, delivery infrastructure and enhancement in internal combustion engines.

Considering the need for technology evolution to make hydrogen commercially viable, SPS considered hydrogen as a dual fuel for CT and CCGT with 30% co-blending level by volume from 2032, increasing to 96% hydrogen by volume utilization in 2038. This is in keeping with possible requirements contained within the Environmental Protection Agency's ("EPA") Clean Air Act, Section 111(b).

Based on discussions with stakeholders, SPS assumed a scaled-up clean fuels industry could deliver hydrogen for approximately $1/kg ($7.4/MMBtu). This does not include the cost of infrastructure (i.e., pipeline) needed to deliver hydrogen to the generating units.

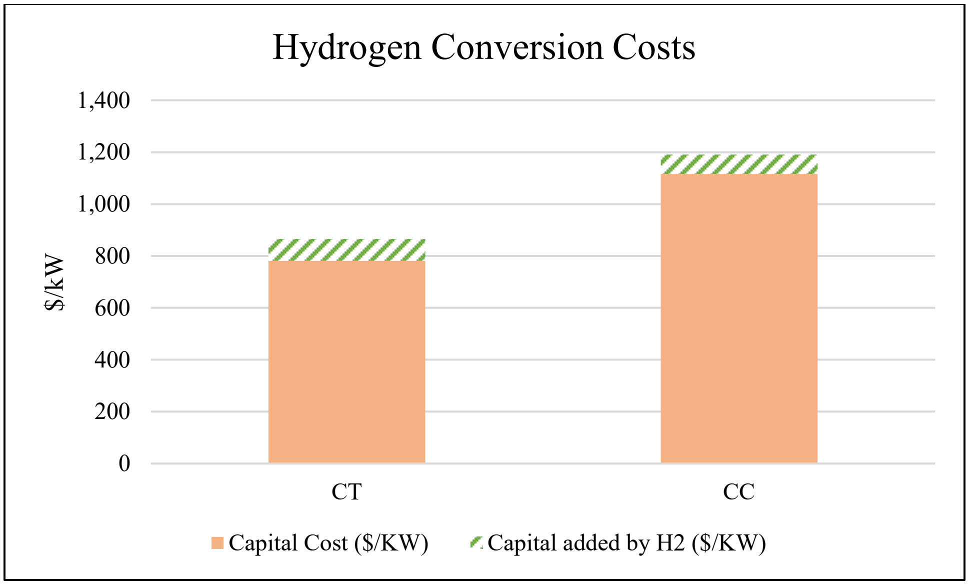
After incorporating feedback from a stakeholder, SPS included an additional $250M of capital cost per each two hydrogen-fired CTGs to represent the cost of constructing the necessary delivery infrastructure (Figure 7F.8).

Figure 7F.8: Hydrogen Pipeline Infrastructure Cost



Finally, as shown below in Figure 7F.9, SPS also included additional costs to convert the gas-fired CTGs and CCs to utilize clean fuels. SPS included an additional $15M ($83/kW) to convert each CTG and an additional $50M ($74.66/kW) to convert each CC.

Figure 7F.9: Capital Cost added by Hydrogen Conversion



Nuclear Small Modular Reactors:

SMRs represent a transformative step forward in nuclear power generation. Unlike traditional large-scale nuclear plants, SMRs are characterized by their modular design, which offers several advantages. First and foremost, SMRs are more scalable and can be deployed in various capacities, making them adaptable to changing energy needs. Additionally, their reduced footprint and enhanced safety features make them an attractive option for densely populated or environmentally sensitive areas. Furthermore, SMRs have the potential to provide a consistent, baseload supply of carbon-free electricity, helping SPS achieve sustainability goals and reduce greenhouse gas emissions. SPS also relied upon NREL 2023 ATB cost data as a baseline for estimating annual costs for SMR. The characteristics of the modeled SMR are summarized in Table 7-11. Also, Table 7-12 represents capital costs and fixed operation and maintenance costs and Table 7-13 shows the LCOE for SMRs.

Table 7-11: SMR Assumptions

Technology	Summer Peak Capacity (MW)	Summer Heat Rate (BTU/kWh)	Capacity Factor (%)	Life (yr.)	CO_2 release rate (lb./MMBtu)
Nuclear-Small Modular Reactor	100	10.45	93%	60	N/A

Table 7-12: SMR Capital and Fixed Operation and Maintenance Costs

EOY	CAPEX($/kW)	FOM ($/kW-yr.)
2028	$10,158.33	$141.22
2029	$10,348.74	$144.75
2030	$10,544.25	$148.36
2031	$10,724.48	$152.07
2032	$10,913.57	$155.88
2033	$11,119.70	$159.77
2034	$11,324.95	$163.77
2035	$11,535.66	$167.86
2036	$11,738.96	$172.06
2037	$11,945.97	$176.36
2038	$12,163.56	$180.77
2039	$12,370.35	$185.29
2040	$12,593.14	$189.92
2041	$12,828.67	$194.67
2042	$13,053.27	$199.53
2043	$13,292.63	$204.52

Table 7-13: SMR LCOE

EOY	LCOE ($/MWh)
2028	$82.99
2029	$84.73
2030	$86.51
2031	$88.23
2032	$90.02
2033	$91.92
2034	$93.83
2035	$95.79
2036	$97.73
2037	$99.72
2038	$101.78
2039	$103.81
2040	$105.95
2041	$108.18
2042	$110.37
2043	$112.67

Lead Time for New Resources

Development and subsequent construction of new generation facilities can take several years to complete, depending on the public and regulatory environment for which the resource is planned. The regulatory approval process for new resources along with the Integrated Resource Plan requirements found in 17.7.3 NMAC can exceed two years. Development of resources can take anywhere from one year for existing commercially available resources to multiple years for some resources, such as renewable energy, where thousands of acres of land are required to be secured for development. Finally, engineering, procurement, construction, startup, and commissioning of new facilities can take anywhere from two to three years. Although most of the processes are scheduled to occur strategically in parallel, that is, concurrently, especially development and other "at-risk" engineering and planning, the best-case execution of these tasks from start to finish would result in a resource coming online within approximately three to five years from start to finish. These public and regulatory details must be strategically accounted for when planning and executing the installation of new resources, including the lead times for critical equipment manufacturing and delivery to sites.

Demand-Side Resources

Demand side resources include a range of strategies, programs, and technologies designed to optimize energy consumption patterns, reduce peak demand, and enhance overall grid reliability and efficiency. There are several types of demand side resources, each contributing uniquely to the utility's ability to manage demand effectively:

Energy Efficiency Programs: focus on encouraging consumers and businesses to reduce their energy consumption through various measures such as upgrading insulation, adopting energy-efficient appliances, and implementing lighting retrofits.

Demand Response (DR) Programs: Demand response programs act as a peak shaver to enable utilities to modify electricity consumption during periods of high demand or grid stress. Examples include smart thermostats that can automatically adjust heating or cooling.

Distributed Energy Resources (DERs): DERs include small-scale, decentralized power generation and storage systems, such as solar panels, wind turbines, and battery storage. These resources empower consumers to generate their electricity and store excess energy for use during peak periods or grid outages.

DSM resources promote sustainability, grid resilience, and customer engagement, all of which are crucial elements in shaping the future of SPS resources.

7.03 Existing rates and tariffs that incorporate load management or load modifying concepts. Describe how changes in rate design might assist in meeting, delaying, or avoiding need for new capacity.

SPS's current mix of seasonal rate design, service curtailment programs, and EE programs encourage the efficient use of fixed system resources by providing increased price signals (or rebates) when resources are most constrained. These price signals help balance the timing of demand, as well as the need to meet, delay, or avoid new capacity, with customer price sensitivity.[31]

General Service Rates

All general service rates have some form of seasonality in the kWh consumption charge or the kW demand charge. Summer rates are higher than winter (non-summer) rates, which requires the customer to pay more for electricity used in higher demand, peak periods in the summer compared to the same levels of usage in winter billing months. A higher bill can serve to discourage excessive usage in summer months and, where possible for the customer, serve as an incentive

[31] SPS's current rates were set in Case No. 20-00238-UT. The rates are subject to revision in Case No. 22-00286-UT.

to shift usage to lower demand winter billing periods; thus, mitigating the need for new resources over time.

TOU Rates

Time of Use ("TOU") rates are available as an option for all general service customers, except Large General Service – Transmission. TOU rates provide a lower rate compared to general service rates for off-peak demand or energy consumption, with a higher charge based upon avoided capacity cost during peak hours. Peak hours are Noon through 6 p.m., Monday through Friday, during the summer billing months of June through September. Lower rates during off-peak hours, and all hours for eight off-peak months, can encourage customers to take electric service during periods in which capacity is not strained. Higher rates during peak hours can encourage customers to minimize or avoid taking electric service when capacity can potentially be strained, minimizing the requirement to expand capacity and related costs, as a result of requirements during peak hours.

7.04 Load Forecast

Demand and energy forecasts are another important variable. As such, SPS conducted two load forecast sensitivity analyses using the methodology described in Section 4. However, it is worth noting, the methodology described in Section 4 for creating the Financial Forecast is largely used for financial planning purposes. Despite continued growth in oil and gas developments in the New Mexico portion of the Permian Basin and due to the volatility of the industry, the Financial Forecast incorporates only a modest amount of projected oil and gas load growth. The Planning Forecast load represents what SPS believes is a more realistic projection of its capacity position if oil and gas load continues to increase. For the purposes of resource planning, the Planning Forecast is predominantly used to ensure SPS has enough resources to reliably serve customers.

SPS's Financial, Planning, and Electrification load forecasts for the years 2024 – 2043 are shown in Appendix G.

Section 8. STATEMENT OF NEED

New Mexico Administrative Code § 17.7.3.10 requires the Company to present a Statement of Need, a "description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies." It further provides that:

> The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

Summary of Need

SPS has growing capacity and energy needs over the 20-year Planning Period for this IRP, with substantial capacity and energy needed by the end of this decade. The end of this decade might sound far off, but it is actually close to immediate from a planning perspective. Development and interconnection timelines require that planning decisions be made soon in order for resources to be ready in time for those needs.

The magnitude of SPS's capacity and energy needs in 2028, 2030, and beyond will, of course, depend on the realization of load growth. It is necessary to make and rely on forecasts of that growth now. The Commission and SPS cannot wait and react only after there is more demand than can be met with the system.

The load forecasts described in Section 4 present a conservative or low projection (Financial forecast), medium projection (Planning forecast), and a stakeholder-driven high forecast (Electrification forecast). These forecasts drive the range of capacity need and potential resource acquisitions.

Based on these forecasts, SPS projects a summer peak demand between 4,771 MW and 6,517 MW by 2030. In addition to SPS's existing and currently planned resources described in Section 3, including resources added through 2027 as part of the 2021 IRP Action Plan, SPS has a remaining capacity need ranging from 1,760 MW to 3,963 MW by 2028-2030, depending on planning assumptions. To meet that projected demand and need for additional capacity, SPS will need to acquire approximately 5,324 MW to 10,211 MW of new resources between 2028 and 2030. The amounts and types of resources that SPS needs to acquire are presented in SPS's modeling in the next section.

It is important to keep in mind that the Electrification forecast – the high forecast – reflects substantial input and engagement from key stakeholders with regard to future business and investment plans in the state, including actual data from our customers. Because it uniquely reflects data from specific customers, engagement with those stakeholders will need to continue to ensure the that it reflects the best available information.

The composition of the needed resources, including the technical characteristics of those resources, depends on a combination of multiple factors, including costs, reliability requirements, and the requirements of the Energy Transition Act and Commission decisions.

SPS's Statement of Need for new resources is based on and incorporates all of the information presented in this IRP. This Section summarizes SPS's need and the factors that contribute to the amount and types of new resources required, grounded in the items enumerated in § 17.7.3.10 NMAC, and informed by multiple rounds of input and robust dialogue during the stakeholder process.

Objectives

Building on input during the stakeholder process, SPS's objective in this IRP is to lay the groundwork for a portfolio of resources that:

- Maintains reliability and resiliency;
- Meets the Renewable Portfolio Standard requirements to the best of SPS's ability;
- Supports projected load growth and secures replacement energy and capacity for retiring resources;
- Furthers diverse economic development in the state;
- Meets evolving resource adequacy requirements;
- Prioritizes affordability for all SPS customers, including residential and low-income customers, as the system transitions;
- Provides a just and orderly transition for our workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements; and
- Engages customers to help the utility reliably serve during grid constrained events.

Energy and Capacity Required to Meet Future Demand

SPS's energy and capacity needs are attributable to multiple factors, including but not limited to those enumerated in § 17.7.3.10 NMAC.

***Projections of peak load and incremental load growth*:** SPS's projections of future energy sales and coincident peak demand are discussed in detail in Section 4. In addition, the reserve margin and reserve reliability requirements of the Southwest Power Pool are discussed in Section 3.11. SPS's Load and Resources Table is discussed in Section 5. SPS's forecast scenarios are summarized in Figures 4F.1 and 4F.2, which show the Financial, Planning, and Electrification forecasts for firm coincident peak demand and annual energy sales. Based on the load forecasts described in Section 4, SPS will have a summer peak demand between 4,771 MW and 6,517 MW by 2030. These projections are incorporated into SPS's modeling as discussed in Section 9.

***Renewable energy customer programs*:** SPS's renewable energy customer programs and its next steps, including the first phase of its new Renewable*Connect program, are discussed in the Action Plan.

***Replacement of existing resources*:** SPS's retiring resources are a significant contributor to the need for new resources in this IRP, with Cunningham Unit 1 and Plant X Units 1 and 2 retiring this year (2023), Plant X Unit 4 retiring in 2027, Cunningham Unit 2 retiring in 2027, Nichols Units 1-3 retiring in 2028, 2027, and 2030, respectively, Tolk Units 1 and 2 retiring in 2028[32], and Maddox Unit 1 retiring in 2028.SPS's existing resources to serve load are discussed in Section 3. Table 3-1 shows the location, rated capacity, and expected retirement date for each existing SPS-owned generating unit, and Table 3-3 shows the capacity and

[32] Under consideration in SPS's current rate case, Case No. 22-00286-UT.

expiration date for each of SPS's PPAs. Section 3 also discusses SPS's purchases from QFs, new generating units for which a CCN is currently being sought, SPS's purchases of capacity and energy in Southwest Power Pool, and SPS's DSM and EE programs.

Figure 9F.1 compares the accredited capacity of SPS's existing resources as they retire over the action period and further out through 2043 (the end of the Planning Period).

For 2028-2030, SPS has a capacity need ranging from 1,760 MW to 3,963 MW, depending on planning assumptions. SPS has resource needs through 2027 currently being addressed by the 2021 IRP Action Plan; however, as discussed in Section 5, under the Planning forecast (and during the action period), SPS has a capacity shortfall in 2025, which would decrease in 2026 when two of the proposed new solar resources and battery energy storage resource are in-serviced.

Due to time required to develop and interconnect new generating resources, it is extremely challenging to acquire new generating resources to meet this potential shortfall. Therefore, SPS is currently evaluating alternative means to meet any shortfall. For example, SPS has proposed new demand response programs in both Texas and New Mexico that could alleviate this need and as described in more detail in Section 10, will also be advancing its efforts to build its renewable energy customer programs. For example, SPS filed for approval of its Renewable*Connect program in August 2023 in Case No. 23-00271-UT. Furthermore, prior to issuing the RFP next year, SPS will update its load forecast, and if necessary, will seek additional resources with an in-service date of 2027 (or earlier).

Resources to be Acquired

SPS's modeling of a recommended portfolio of resources is discussed in Section 9. Key inputs to that modeling include the load forecasts, technology cases, and pricing. SPS considered three load forecasts: (1) a conservative or low load-growth projection (referred to as the Financial forecast); (2) a mid load-growth projection (the Planning forecast); and (3) a stakeholder-driven high load-growth forecast (the Electrification forecast).SPS considered four technology cases: the Multi-Jurisdictional Baseline, Existing Technologies, Long Duration Storage, and Hydrogen Conversion. SPS's model uses generic pricing; the actual prices of the needed resources will be determined through the RFP process. SPS considered different scenarios with respect to the required Southwest Power Pool planning reserve margin ("PRM").

Based on generic pricing, the Company has the potential to need the following resources through 2030 (shown in more detail in Table 8.1 reproduced below):

- A range of 4,281 MW to 6,631 MW of new clean energy resources (wind and solar)
- A range of 1,043 MW to 4,290 MW from dispatchable resources (i.e., resources that can be called upon at any time); including
- Dispatchable storage resources range from 10 MW to 4,290 MW (depending on planning assumptions).

Table 8-1: Resources Added 2028-2030 (Nameplate Capacity)

	Resources Added 2028-2030 (Nameplate Capacity)						
	Dispatchable				Variable Energy Resources		
	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Financial Forecast							
15% PRM							
Multi-Jurisdictional Baseline*	933	-	130	**1,063**	3,390	1,021	**4,411**
Existing Technologies	-	-	1,380	**1,380**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,280	**1,280**	3,500	1,091	**4,591**
Hydrogen Conversion	933	-	110	**1,043**	3,250	1,021	**4,271**
18%/20% PRM							
Existing Technologies	-	-	1,670	**1,670**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,540	**1,540**	3,500	1,091	**4,591**
Hydrogen Conversion	933	-	410	**1,343**	3,500	1,021	**4,521**
Planning Forecast							
15% PRM							
Multi-Jurisdictional Baseline*	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	-	-	2,220	**2,220**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,980	**1,980**	3,500	1,831	**5,331**
Hydrogen Conversion	933	837	170	**1,940**	3,500	1,051	**4,551**
18%/20% PRM							
Existing Technologies	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	933	837	360	**2,130**	3,500	1,021	**4,521**
Electrification & Emerging Technologies							
15% PRM							
Multi-Jurisdictional Baseline*	933	2,511	10	**3,454**	3,500	1,211	**4,711**
Existing Technologies	-	-	3,810	**3,810**	3,500	2,271	**5,771**
Long Duration Storage	-	-	3,260	**3,260**	3,500	3,011	**6,511**
Hydrogen Conversion	933	837	1,580	**3,350**	3,500	1,341	**4,841**
18%/20% PRM							
Existing Technologies	-	-	4,290	**4,290**	3,500	2,371	**5,871**
Long Duration Storage	-	-	3,580	**3,580**	3,500	3,131	**6,631**
Hydrogen Conversion	933	837	1,990	**3,760**	3,500	1,021	**4,521**

The projects that are bid into the RFP and selected through the resource procurement process will determine the most cost-effective portfolio that SPS ultimately identifies.

Through the Planning Period, SPS's resource needs are projected to range from 12,595 MW and 23,610 MW. Based on generic pricing, SPS has the potential to require the following resources (as shown in more detail in Table 8.2 reproduced below):

- 7,799 MW to 13,859 MW of new clean energy resources;
- 4,470 MW to 11,200 MW of dispatchable resources;
- Dispatchable storage resources ranging from 130 MW to 11,200 MW.

Table 8-2: Resources Added 2028-2043 (Installed Capacity)

	Resources Added 2028-2043 (Nameplate Capacity)							
	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
Financial Forecast								
Multi-Jurisdictional Baseline*	4,666	-	130	**4,796**	4,740	3,059	**7,799**	**12,595**
Existing Technologies	-	-	7,960	**7,960**	7,720	2,769	**10,489**	**18,449**
Long Duration Storage	-	-	4,470	**4,470**	8,140	2,839	**10,979**	**15,449**
Hydrogen Conversion	933	837	4,710	**6,480**	7,080	2,769	**9,849**	**16,329**
Planning Forecast								
Multi-Jurisdictional Baseline*	4,899	837	390	**6,126**	6,120	4,209	**10,329**	**16,455**
Existing Technologies	-	-	10,390	**10,390**	9,840	2,769	**12,609**	**22,999**
Long Duration Storage	-	-	6,000	**6,000**	10,210	3,649	**13,859**	**19,859**
Hydrogen Conversion	933	837	7,090	**8,860**	9,640	2,799	**12,439**	**21,299**
Electrification & Emerging Technologies								
Multi-Jurisdictional Baseline*	3,500	2,511	570	**6,580**	5,700	3,869	**9,569**	**16,149**
Existing Technologies	-	-	11,200	**11,200**	8,730	3,680	**12,410**	**23,610**
Long Duration Storage	-	-	6,530	**6,530**	9,080	4,759	**13,839**	**20,369**
Hydrogen Conversion	933	837	8,140	**9,910**	8,740	2,750	**11,490**	**21,400**

Characteristics of Needed Resources

The characteristics of the new resources needed to meet projected demand are discussed in detail in Sections 7 and 9. The resource characteristics that SPS considered include:

Technical characteristics**:** The types of resources available for SPS to acquire and their technical characteristics are discussed in Section 7.[33]

[33] See § 17.7.3.10(A) NMAC.

***Meeting net capacity and providing reliability reserves*:** SPS's ability to maintain system reliability and meet planning reserve margins are discussed in Section 9. As SPS progresses down the pathway set out in the Energy Transition Act, it will continue to need flexible resources to meet demand net of renewables. The Figures presented in Section 9 show modeled installed capacity, energy, summer accredited capacity, and winter accredited capacity by resource type.[34]

***Securing flexible resources*:** As discussed in Section 9, the model acquires flexible resources necessary to maintain reliability. This includes gas generation and, depending on the technology scenario, potentially substantial amounts of long-duration storage. SPS expects flexible resource types to evolve with technological advances over the course of the planning period.[35]

***Securing demand-side resources*:** SPS's demand-side management, demand response, energy efficiency, and behind-the-meter generation programs are discussed in Section 4. SPS's energy sales and coincident peak demand forecasts are adjusted to incorporate projected incremental DSM program savings. SPS's projected need for new grid-scale generation resources is in addition to projected savings from demand-side resources.[36]

***Securing renewable energy*:** SPS projects to add between 4,281 MW to 6,631 MW of new wind and solar by 2030 to continue to progress towards state goals.[37]

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[34] See § 17.7.3.10(B) NMAC.
[35] See § 17.7.3.10(B) NMAC.
[36] *See* § 17.7.3.10(B) NMAC.
[37] *See* § 17.7.3.10(B) NMAC.

***Expanding or modifying transmission or distribution grids*:** SPS's existing transmission capabilities and planned transmission projects and upgrades are discussed in Sections 3.10 and 3.12. SPS's existing distribution capabilities and planned upgrades are discussed in Sections 3.11-3.12. Additional transmission or distribution projects needed will be determined based on the type, size, and location of the actual projects selected through the RFP process.[38]

***Securing energy storage*:** SPS considered the potential for acquiring long-duration storage as an emerging technology, as discussed further in Section 9.[39]

[38] *See* § 17.7.3.10(B) NMAC.
[39] *See* § 17.7.3.10(B) NMAC.

Section 9. DETERMINATION OF THE RESOURCE PORTFOLIO

This section discusses the resource planning modeling exercise used to determine the most cost-effective portfolio of resources to meet SPS's future needs. It first describes the modeling process and the EnCompass software used by SPS, and then presents the results of the modeling exercise under each of SPS's forecasts.

9.01 Resource Planning Fundamentals

In its simplest form, electric resource planning is the process of taking forecasts of customer electric demand and energy use and determining the appropriate amount, timing, and diversification of generation sources, including but not limited to, thermal generation, renewable resources, energy storage, DSM and LM, which should be developed to meet customer requirements in a cost-effective and reliable fashion. Engineering, permitting, and constructing electric generating facilities is a multi-year process and therefore resource planning must be completed with adequate lead-time to allow the development of new resources that are needed to meet customer energy requirements.

Computer Models

After developing forecasts of customer demand, L&R tables, and load profiles of the system, computer modeling of the electric system is often the next step in the planning process. Computer models allow the resource planner to examine how different resource technologies will integrate with the existing fleet to meet the system needs under a range of assumptions from key inputs such as projected load growth. A utility expansion-planning model is specifically designed to construct combinations or portfolios of resources that would meet the capacity and energy needs of the system. The model simulates operation of each of these combinations of resources together with existing generation resources, while keeping track of all associated fixed and variable costs of the entire system. The resources available for selection in the model are described in more detail previously in Section 7 and later in this section.

A computer model creates added benefit because it tracks an abundance of calculations on costs, emissions, operational data, and various other metrics for each of the possible resource portfolios. SPS utilizes the EnCompass production cost model in its resource planning process.

While this model is a powerful tool that can be used to generate and evaluate thousands of possible resource portfolios, the sheer complexity of resource evaluations of this magnitude would quickly overwhelm the model's data storage and computational capabilities unless steps are taken to limit the size of the optimization problem presented to the model at any one time. The number of resource combinations that can be generated each year grows exponentially depending on the number of resources made available to the model.

9.02 EnCompass Production Cost Model

EnCompass is a production cost model that uses an algorithm to determine the most cost-effective resource portfolio for a utility system over the life of a prescribed set of resource technologies under given sets of constraints and assumptions. The EnCompass model includes: 1) a modern “solve anything” algorithm; 2) hourly operation detail that can accurately capture ramp rates, start-up, etc.; and 3) enhanced storage logic and ancillary services. EnCompass is also able to perform utility capital accounting (revenue requirements).

In addition to the usual input variables needed for a production costing model, EnCompass incorporates a wide variety of resource expansion planning parameters to develop a coordinated, integrated plan that best suits the utility system being analyzed. For example, EnCompass incorporates resource expansion planning parameters such as: alternative generation technologies available to meet future needs; renewable energy resources; unit capacity sizes; heat rates; LM; conservation programs; reliability limits; emissions; and environmental compliance options.

9.03 Mitigate Risk

When establishing the most cost-effective portfolio of resources, SPS incorporates several risk mitigation strategies. First, as described through SPS’s 2023 IRP, SPS is experiencing substantial load growth, particularly in southeast New Mexico. Failure to account for potential load growth could result in SPS being capacity and energy deficient, which in turn could impact SPS’s obligation to reliably serve our customers. However, over building new generating resources to serve load that does not materialize could burden existing customers with higher costs. As such, SPS has evaluated three different load forecasts, each incorporating different load growth assumptions, which have shaped the resource need described in SPS's Statement of Need. SPS will continue to evaluate its load forecast to ensure the most accurate load forecast data is used in resource procurement. Furthermore, SPS understands the Southwest Power Pool may increase the PRM again in the future. Failure to meet this requirement may require a significant deficiency payment to the Southwest Power Pool. To mitigate the risk of a potential deficiency payment, SPS's modeling also considers the additional resources required to achieve a potential higher PRM requirement in the future.

The pricing and availability assumed for the generically priced modeling resources may not materialize in SPS's 2024 RFP. As such, SPS is taking a technology agnostic approach to its Statement of Need. For example, SPS is seeking certain quantities of variable energy resources and dispatchable resources rather than quantities of specific resource types (e.g., wind). Maintaining optionality with the RFP ensures SPS receives the best possible pricing for new resources and reduces the risk of selecting higher cost projects.

SPS has also conducted sensitivity analyses based on other critical modeling inputs that are outside of the company's control, including natural gas and market energy price forecasts and transmission network upgrade costs. Further, SPS evaluated several different emerging technologies to evaluate how these technologies may change SPS's future resource needs.

Finally, there are many other risks that need further consideration. These include, but are not limited to, transmission and distribution impacts, congestion, and system reliability. Each of these risks (and opportunities) will become more apparent as SPS moves from modeling generically priced resources to modeling firm proposals received in the RFP. SPS will further evaluate these factors as part of its 2024 RFP.

9.04 Development of Resources Portfolios

The following factors were considered in, or affected, the development of the most cost-effective portfolio of resources and alternative portfolios.

Load Management and Energy Efficiency Programs

Each of SPS's energy and demand forecasts are net of projected load management and energy efficiency programs. Therefore, load management and energy efficiency programs were directly incorporated into the load forecasts SPS used when developing the resource portfolios. SPS incorporated requests from stakeholders to evaluate additional load management programs. These requests, which are described in more detail later in this section, include stakeholder requested scenarios encompassing additional demand response programs, dynamic load shifting, and virtual power plants.

Renewable Energy Portfolio Requirements

As demonstrated in New Mexico Case No. 23-00230-UT, SPS is projecting continued compliance with the RPS throughout the Action Plan. During the Planning Period, New Mexico's RPS requirement is scheduled to increase to 80% renewable generation of NM retail sales. Modeling long-term compliance with the RPS is challenging for multi-jurisdiction utilities, such as SPS, that plan resources on a total system basis, not a jurisdictional basis. New Mexico retail sales represent approximately half of SPS's total system sales. Therefore, without knowing exactly how RPS compliant resources will be allocated between jurisdictions, it is challenging to determine exactly the quantity of renewable resources required to meet 80% New Mexico retail sales. Therefore, SPS did not constrain the resource portfolios to meet the NM RPS in the modeling; however, SPS did retrospectively evaluate the resource portfolios to ensure compliance through the planning period is achievable.

Existing and Anticipated Environmental Laws and Regulations

SPS incorporates compliance with environmental laws and regulations into its economic modeling. For example, SPS intends to convert the Harrington units to operate exclusively on natural gas at the end of 2024 to meet National Ambient Air Quality Standards. SPS incorporated this change into each of the portfolios it evaluated. Furthermore, SPS included the direct costs associated with operating units that have environmental controls, such as the activated carbon injection systems which are installed at Harrington and Tolk to conform with the Mercury and Air Toxics rules.

For new gas generating resources, SPS included the cost to install selective catalytic reduction systems to reduce NOx emissions in anticipation of potential environmental legislation. SPS also conducted analyses that included converted new gas-fired units to operate on hydrogen to conform with the State's clean energy goals and also to conform with potential requirements under potential EPA requirements under Section 111(b) of the Clean Air Act and assumed the new gas-fired CTGs would begin blending 30% Hydrogen, by volume, in 2032, increasing to 96% Hydrogen, by volume, by 2038.

Fuel Diversity

It is difficult to directly quantify the value of fuel diversity when determining resource portfolios; therefore, SPS did not directly assign a quantitative fuel diversity benefit as a direct input or factor. However, SPS recognizes the importance of the reliability and economic benefits of fuel diversity and incorporated different emerging technologies into its modeling described later in this section.

Susceptibility to Fuel Interdependencies

EnCompass provides hourly operation detail that can accurately capture ramp rates, start-up times, minimum up and minimum down times, and other factors. Therefore, EnCompass determines how different technologies (and fuel types) interact with one another when calculating the most cost-effective portfolio of resources and alternative portfolios. The available technologies that were considered are described later in this section.

Transmission and Distribution Constraints

SPS included two major transmission constraints in the EnCompass model. First, as described in Section 3.05, Southwest Power Pool has a total of 1,950 MW of transmission flow capability minus the single largest contingency and other factors (i.e., imports from Palo Duro and Mammoth Wind) to deliver resources to the SPS zone from the rest of the Southwest Power Pool transmission system. Second, SPS's analysis included a 1,645 MW North to South constraint. New Generation was not subjected to the North to South constraint, because SPS does not know where the generic resources modeled will be located.

System reliability and planning reserve margin requirements

Maintaining system reliability and planning reserve margin requirements is a critical modeling constraint when developing resource portfolios. The EnCompass model was constrained to maintain at a minimum Southwest Power Pool's current 15% planning reserve margin on a monthly basis. Failure to meet the planning reserve margin resulted in the EnCompass model adding new capacity resources. Furthermore, as described later in this section, SPS also considered a scenario with an 18% summer PRM requirement and a 20% winter PRM winter. The EnCompass model evaluated the ability of the resource portfolio to meet electric demand on an hourly basis. However, rather than program a hard constraint, SPS assigned an extremely high emergency energy cost ($/MWh) in hours where SPS's resources and market energy purchases could not meet hourly demand. This high cost ensured EnCompass would add additional resources if SPS could not regularly meet hourly demand, but also prevented the model from adding new resources whenever the emergency energy need was extremely small. SPS presents its projected planning reserves while describing the most cost-effective portfolios of resources.

9.05 Most Cost-Effective Portfolio of Resources and Alternative Portfolios

2022 Request for Proposals – Recommended Portfolio

SPS incorporated the recommended portfolio from its 2022 RFP in all scenarios and sensitivities evaluated. This portfolio was also established utilizing the EnCompass modeling software. The recommended portfolio from the 2022 RFP includes:

- 418 MW of new solar generating resources located at the retiring aging gas steam generators;
- 84 MW of new 4-hour lithium-ion battery energy storage
- 15-year execution of an existing 230 MW thermal purchased power agreement; and
- 3-year extension of Maddox Unit 2 from 2025 to 2028 and a short-term extension of Cunningham Unit 2 from end of year 2025 to April 2027.

As described in more detail in the following sections, SPS then allowed EnCompass to add generically priced resources in 2028 and beyond to meet its future capacity. However, as described in Section 5, under the updated Planning Forecast and Electrification Forecast SPS may need to consider resources with an in-service date earlier than 2028.

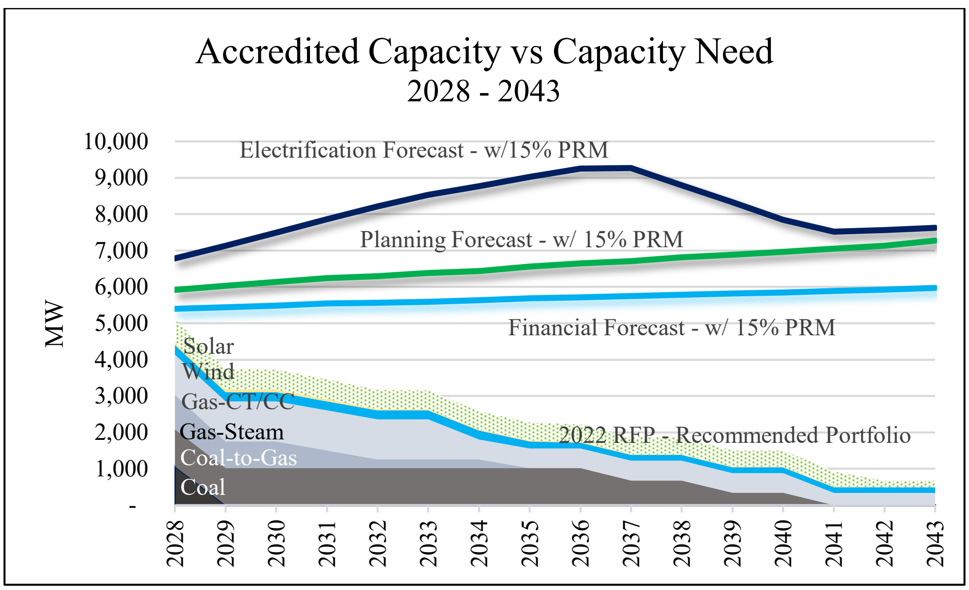
Remainder of the Planning Period (2028 – 2043)

In this section, SPS presents its most cost-effective portfolio of resources using four different technology assumptions and three different load forecasts.

Later in this section, SPS presents alternative resource portfolios assuming (1) an increase in the Southwest Power Pool Planning Reserve Margin Requirement to 18% in the summer and 20% in the winter, (2) low and high natural gas and market energy price forecasts, and (3) higher transmission network upgrade costs. Finally, SPS presents alternative portfolios incorporating requests from stakeholders.

As shown below in Figures 9F.1, SPS has a substantial, and growing, capacity need over the 20-year planning period. SPS's capacity need is driven by projected load growth, retiring existing generating units, and expiring purchased power agreements.

Figure 9F.1: All Forecasts: Accredited Capacity vs Capacity Need (2028 - 2043)



The type and number of resources selected in each of the most cost-effective portfolios of resources is impacted by projected load growth and the types of technology available for selection. Table 9-1 below summarizes the additional resources included in each of the most cost-effective portfolio of resources under the planning, electrification, and financial load forecasts using four technology assumptions cases: Multi-Jurisdictional Baseline ("MJB"), Existing Commercially Available Carbon Free Dispatchable Technology Resources ("ET"), Long Duration Storage ("LDS"), and Gas-to-Hydrogen Conversion ("HC"). Each of the four technology cases are described in more detail below.

Table 9-1: Most Cost-Effective Portfolios of Resources - New Installed Capacity (2028 – 2043)

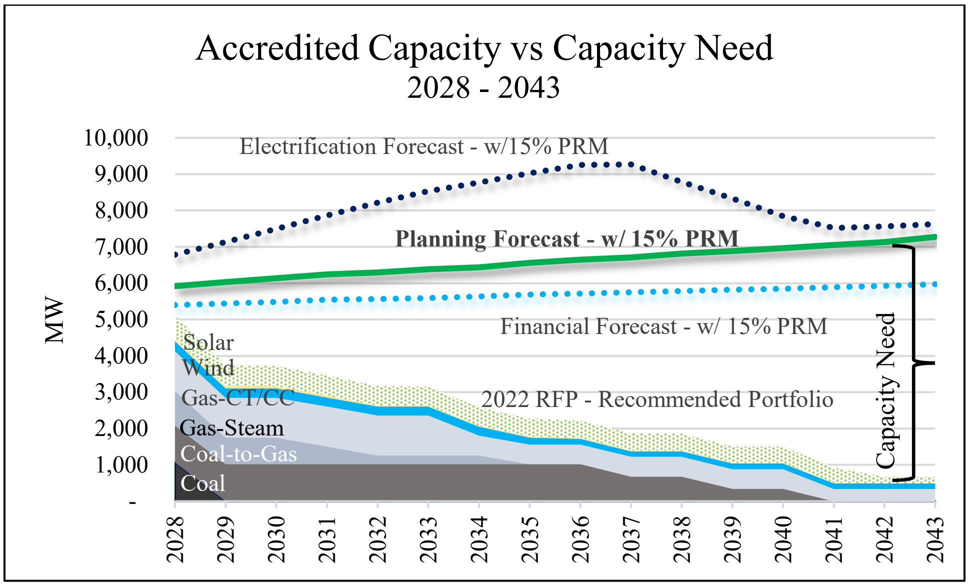
	Resources Added 2028-2043 (Installed Capacity - MW)							
	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
Planning Forecast								
MJB	4,899	837	390	**6,126**	6,120	4,209	**10,329**	**16,455**
ET	-	-	10,390	**10,390**	9,840	2,769	**12,609**	**22,999**
LDS	-	-	6,000	**6,000**	10,210	3,649	**13,859**	**19,859**
HC	933	837	7,090	**8,860**	9,640	2,799	**12,459**	**21,299**
Electrification & Emerging Technologies								
MJB	3,500	2,511	570	**6,580**	5,700	3,869	**9,569**	**16,149**
ET	-	-	11,200	**11,200**	8,730	3,680	**12,410**	**23,610**
LDS	-	-	6,730	**6,730**	9,080	4,759	**13,839**	**20,589**
HC	933	837	8,140	**9,910**	8,740	2,750	**11,490**	**21,400**
Financial Forecast								
MJB	4,666	-	130	**4,796**	4,740	3,059	**7,799**	**12,595**
ET	-	-	7,960	**7,960**	7,720	2,769	**10,489**	**18,449**
LDS	-	-	4,470	**4,470**	8,140	2,839	**10,979**	**15,449**
HC	933	837	4,710	**6,480**	7,080	2,769	**9,849**	**16,329**

As shown above in Table 9-1, depending on load growth and the available technologies, SPS's most cost-effective portfolio of resources includes a range between 12,595 MW and 23,610 MW of new resources between 2028 and 2043 contingent upon the factor input parameters.

Planning Forecast

Under the planning forecast, as shown below in Figure 9F.2, SPS has a capacity need of 2,142 MW in 2030, increasing to 6,606 MW by 2043. The most cost-effective portfolio of resources selected to meet this growing capacity need varies with each of the four technology cases evaluated.

Figure 9F.2: Planning Forecasts: Accredited Capacity vs Capacity Need (2028 – 2043)



Technology Case 1: Multi-Jurisdictional Baseline

Under the MJB technology case, SPS did not restrict or constrain EnCompass to meet jurisdictional specific requirements or legislation to ensure it created a foundational baseline for comparison. For example, SPS did not restrict or constrain EnCompass to meet New Mexico's Energy Transition Act ("ETA"). To be clear, SPS is not presenting the most cost-effective portfolio of resources selected under the MJB case as being compliant with New Mexico's 2045 Carbon-Free goal. The MJB case is for informational purposes for SPS's other jurisdictions.

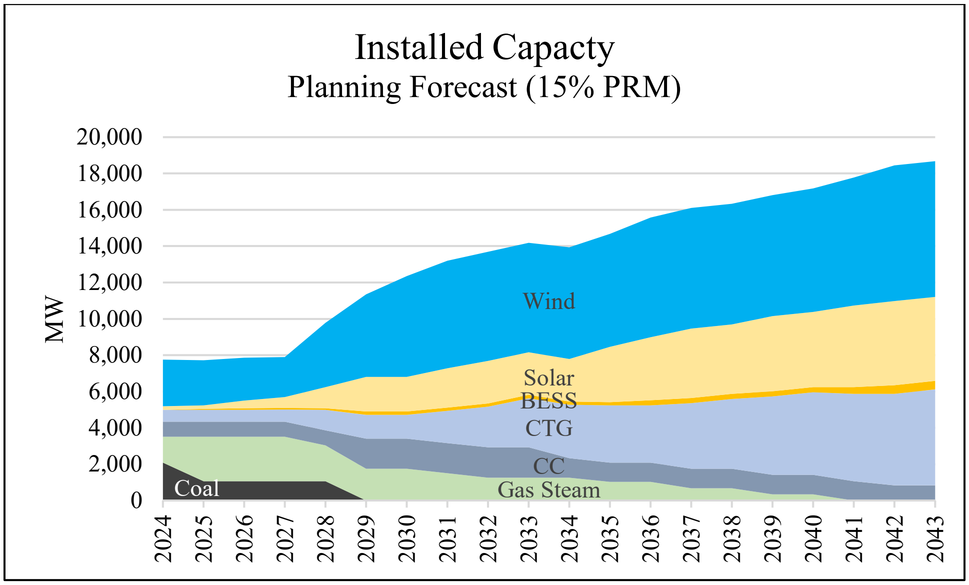
Under the MJB case, the resources available for selection for modeling in EnCompass in 2028 and beyond were wind, solar, 4-to-8-hour lithium-ion battery energy storage, simple cycle CTGs (with SCRs), and 2x1 CC generation. The most cost-effective portfolio of resources selected under the MJB case is shown below in Table 9-2.

Table 9-2: Most Cost-Effective Portfolios of Resources MJB Case - New Installed Capacity MW (2028 – 2043)

Dispatchable				Variable Energy Resources			
Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
4,899	837	390	6,126	6,120	4,209	10,329	16,455

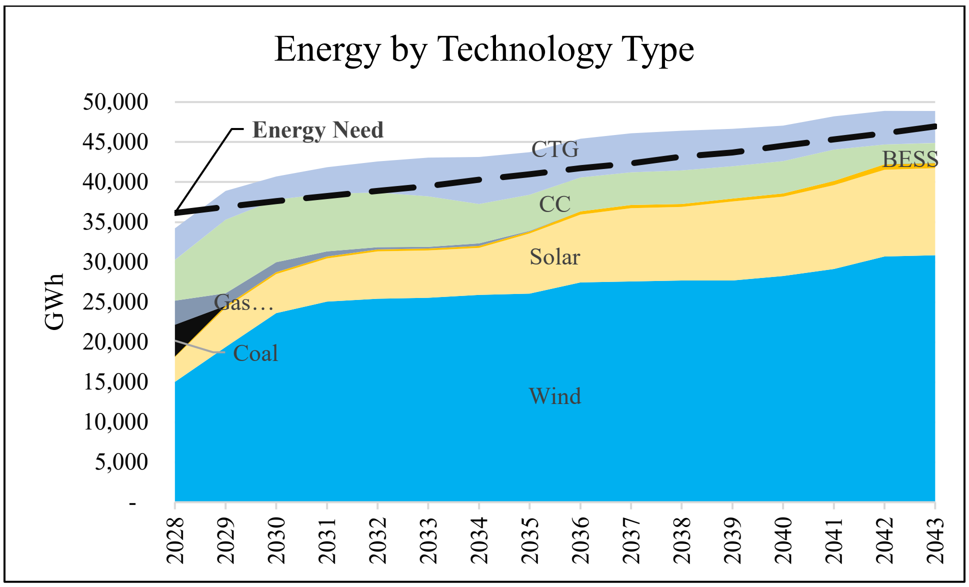
In total, the most cost-effective portfolio of resources under the MJB case includes 16,455 MW of new generation between 2028 and 2043, this includes 10,329 MW of new variable energy resources (i.e., wind and solar) and 6,126 MW of new dispatchable capacity (i.e., CTGs, CC and BESS). Figure 9F.3 shows the total amount of installed capacity including all existing generation, the recommended portfolio from the 2022 RFP, and the MJB Most Cost-Effective Portfolio of new generating resources shown in Table 9-2.

Figure 9F.3: Most Cost-Effective Portfolios of Resources MJB Case - New Installed Capacity (2028 – 2043)



The most cost-effective portfolio of resources selected under the MJB case includes 4,899 MW of new gas-fired CTGs and 10,329 MW of new variable energy resources. As the CTGs operate at a relatively low-capacity factor, as shown below in Figure 9F.4, SPS's overall energy mix is increasingly dependent on wind and solar generation. For example, in 2040, the wind and solar generation included in the most cost-effective portfolio of resources provides 38,196 GWh of renewable energy, compared to an energy need 44,530 GWh, this equates to approximately 85.8%. Therefore, SPS reasonably anticipates the most cost-effective portfolio of resources selected under the MJB case would conform to New Mexico's 2040 renewable portfolio standards requirement for 80% of New Mexico retail sales to be from renewable resources. However, unless the new CTGs are retired before 2045, the most cost-effective portfolio of resources under the MJB case would not comply with New Mexico's 2045 carbon-free goal. This fact creates a need for the consideration of alternative approaches to meet the ETA goals. Alternatively, the CTGs could be converted to operate on clean fuels (i.e., hydrogen) or carbon capture equipment could be installed. SPS presents its gas-to-hydrogen conversion case later in this section.

Figure 9F.4: Most Cost-Effective Portfolios of Resources MJB Case – Energy by Technology Type (2028 – 2043)



Although the most cost-effective portfolio of resources includes approximately 18,500 MW of installed capacity by 2043, including approximately 16,500 MW of new resources, a large amount of the installed capacity is renewable resources, specifically wind generation. As wind generation receives a relatively low accredited capacity value of approximately 15% - 20% of the total installed capacity, the accredited capacity of the most cost-effective portfolio of resources provides valuable insight into trends in the results of the modeling. Figures 9F.5 and 9F.6 show SPS's accredited capacity position under the MJB case. Under the

MJB case, between 2028 and 2043, SPS's average reserve margin is approximately 31.6% in the summer and 22.2% in the winter, compared to the Southwest Power Pool's current 15.0% PRM requirement.

Figure 9F.5: Most Cost-Effective Portfolios of Resources MJB Case – Summer Accredited Capacity (2028 – 2043)

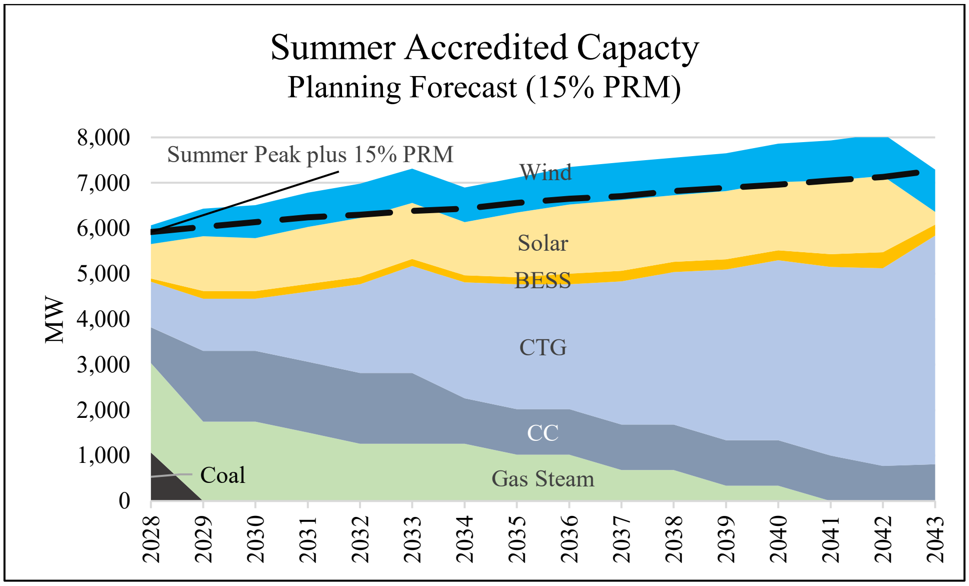
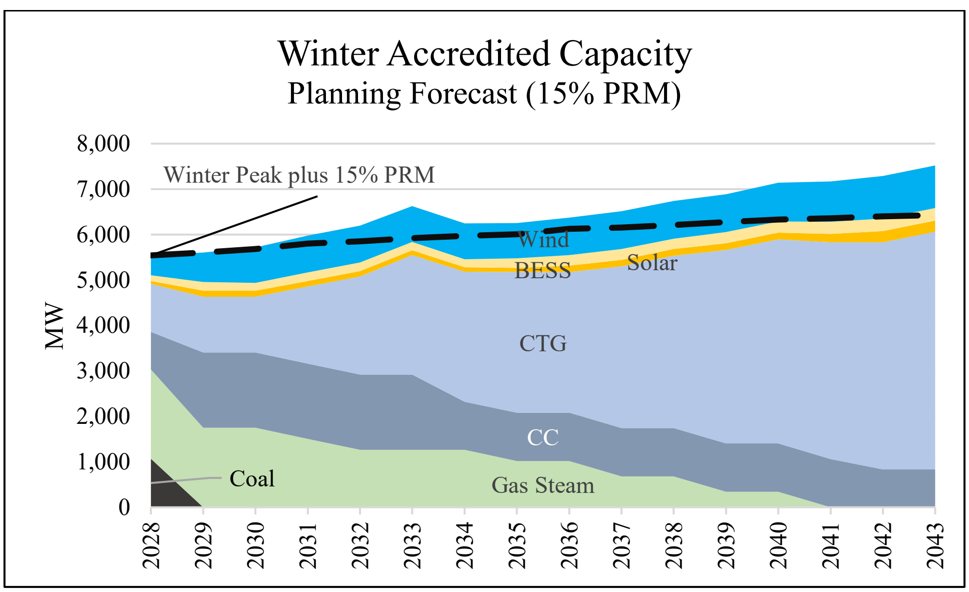


Figure 9F.6: Most Cost-Effective Portfolios of Resources MJB Case – Winter Accredited Capacity (2028 – 2043



As acquiring new resources is often a multi-year process, the new resources included in each of the most cost-effective portfolio of resources before the end of the current decade require greater attention. Through the end of this decade, the new resources included in most cost-effective portfolio of resources under the MJB case is shown below in Table 9-3.

Table 9-3: Most Cost-Effective Portfolios of Resources MJB Case - New Installed Capacity MW (2028 – 2030)

Dispatchable				Variable Energy Resources			
Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
700	837	100	1,637	3,500	1,301	4,801	6,438

In total, the most cost-effective portfolio of resources under the MJB case includes an additional 6,438 MW of new installed capacity by 2030. Again, the accredited capacity of the most cost-effective portfolio of resources provides the most valuable insight into the modeling results. Figures 9F.7 and 9F.8 show the Summer and Winter accredited capacity for new, existing, and proposed generating resources and the associated PRM requirement between 2028 and 2030. As shown in Figure 9F.8, between 2028 and 2030, the EnCompass model adds just enough new resources to meet the existing 15% PRM requirement for the winter. In other words, if the Southwest Power Pool were to increase the PRM, or introduce a higher PRM requirement in the winter, SPS would require additional resources than included in the most cost-effective portfolio of resources under the MJB case. SPS's alternative analysis including a higher PRM requirement is discussed later in this section of the IRP.

Figure 9F.7: Most Cost-Effective Portfolios of Resources MJB Case – Summer Accredited Capacity (2028 – 2030)

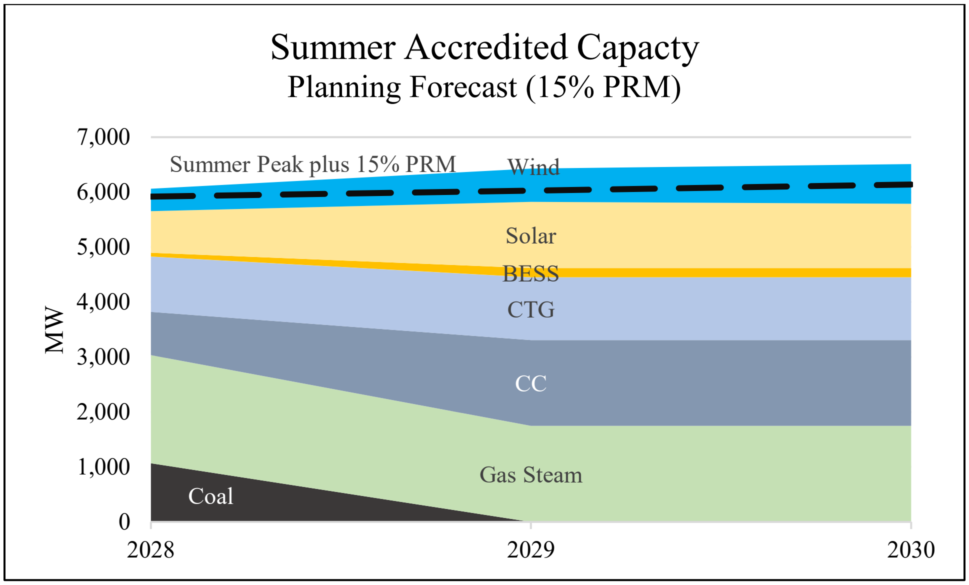
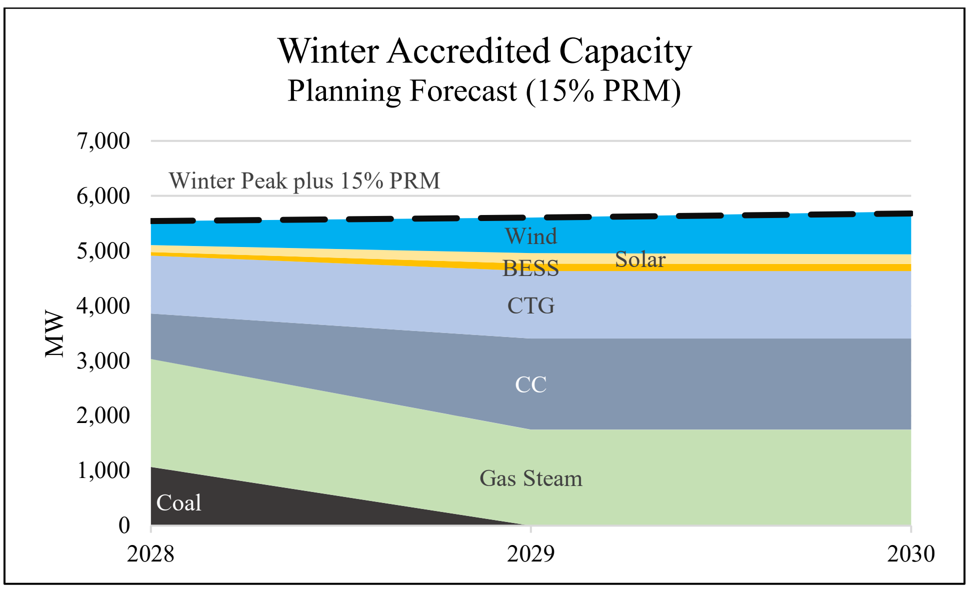


Figure 9F.8: Most Cost-Effective Portfolios of Resources MJB Case – Winter Accredited Capacity (2028 – 2030)



Technology Case 2: Existing Commercially Available, Carbon-Free Technologies

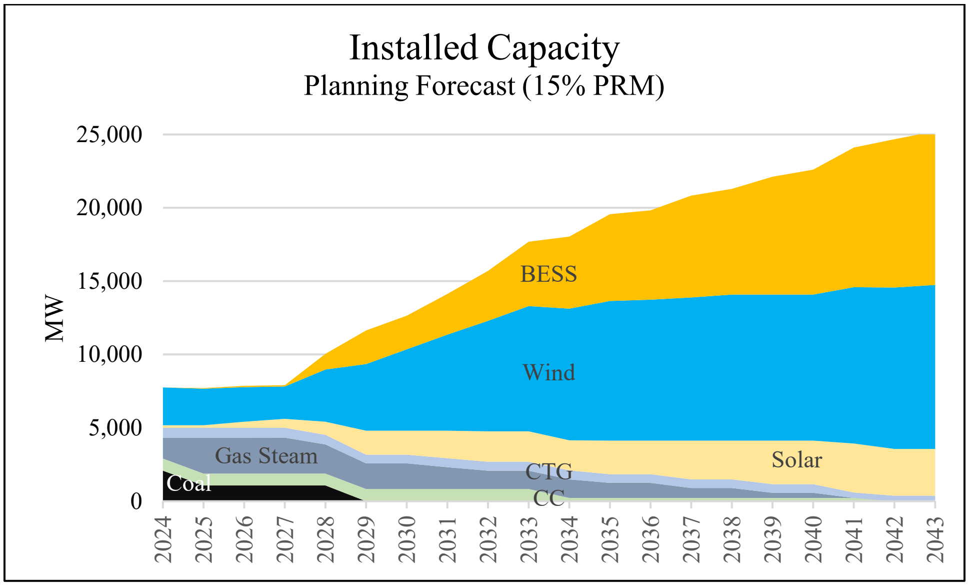
Under the ET case, SPS limited the new resources available for selection in EnCompass to wind, solar, and 4-, 6-, and 8-hour battery energy storage. In other words, unlike the multi-jurisdictional baseline, SPS did not allow EnCompass to select new CTGs or CC resources. By limiting the resources available for selection in EnCompass to just carbon-free resources provides a clear path forward for compliance with the ETA's 2045 carbon-free requirements. The most cost-effective portfolio of resources under the ET case are shown below in Table 9-4.

Table 9-4: Most Cost-Effective Portfolios of Resources ET Case - New Installed Capacity MW (2028 – 2043)

Dispatchable				Variable Energy Resources			
Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
-	-	10,390	10,390	9,840	2,769	12,609	22,999

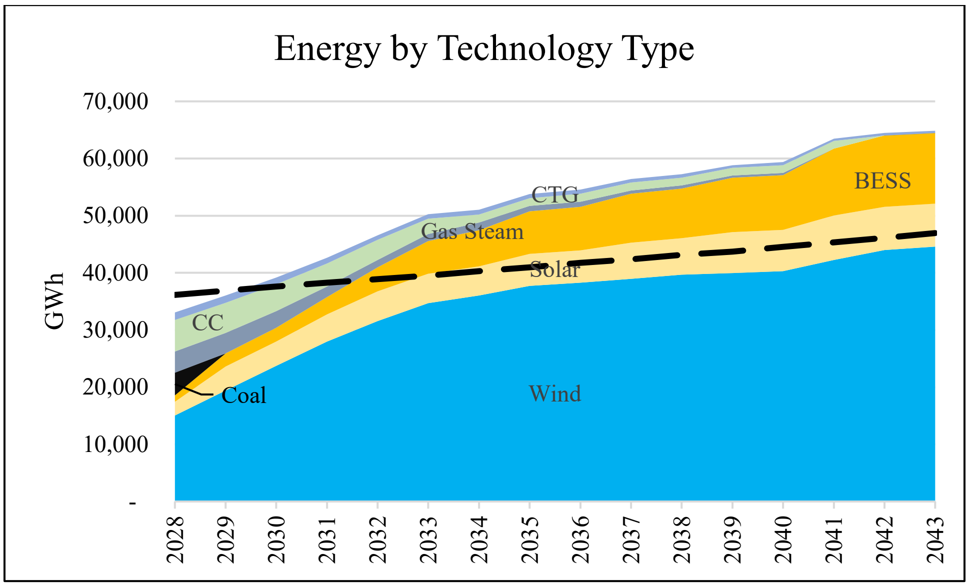
In total, the most cost-effective portfolio of resources identified in the ET case includes 22,999 MW of new generation between 2028 and 2043, this includes 12,609 MW of new variable energy resources and 10,390 MW of new dispatchable capacity. Figure 9F.9 shows the total amount of installed capacity including all existing generation, the recommended portfolio from the 2022 RFP, and the new generating resources shown in Table 9-4.

Figure 9F.9: Most Cost-Effective Portfolios of Resources ET Case - New Installed Capacity (2028 – 2043)



Under the ET case, SPS's installed capacity in 2043 is approximately 25,000 MW, including approximately 23,000 MW of new resources. This is approximately 6,500 MW higher than the MJB. In short, excluding new gas generation, to comply with New Mexico Clean Energy targets, and relying solely on existing commercially available, carbon-free, dispatchable technologies (i.e., lithium-ion batteries) requires a substantial build-out of relatively short-duration battery energy storage. This large build-out of battery energy storage also requires a significant amount of renewable energy to charge the batteries. Due to the large quantity of relatively short-duration batteries included in the most cost-effective portfolio of resources under the ET case, EnCompass favors the lowest cost renewable energy resource (i.e., wind) over a more balanced portfolio of wind and solar. SPS will discuss its reliability concerns regarding a portfolio of resources that consists of almost exclusively short-duration battery energy storage and new wind generation later in this section. However, briefly setting aside these concerns, as shown below in Figure 9F.10, the exclusion of any new carbon emitting resources provides a clear pathway to meet New Mexico's 2045 carbon-free goal, albeit with concerns to system reliability and customer cost impact.

Figure 9F.10: Planning Period - Energy by Technology Type



Figures 9F.11 and 9F.12 show SPS's accredited capacity position under the ET case including the new resources described above. Between 2028 – 2043, SPS's reserve margin ranges from 26% to 69% over the summer. However, over the winter months, SPS's reserve margin ranges from 15% to 30%. The difference between the summer and winter reserve margin is caused by (1) lower accredited capacity for battery energy storage over the winter months – where load profiles are generally flatter and (2) very low accredited capacity for solar resources during the winter.

Figure 9F.11: Planning Period - Summer Accredited Capacity

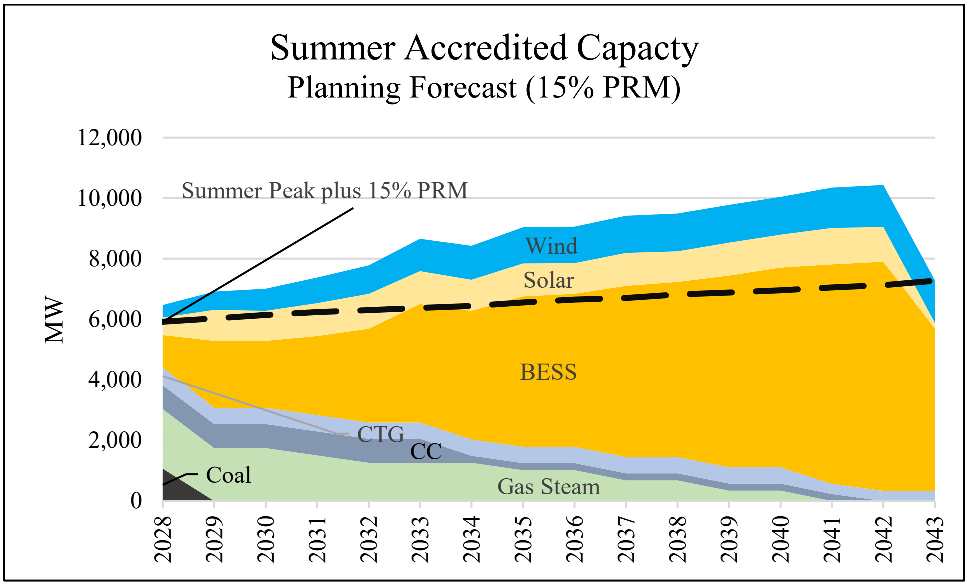
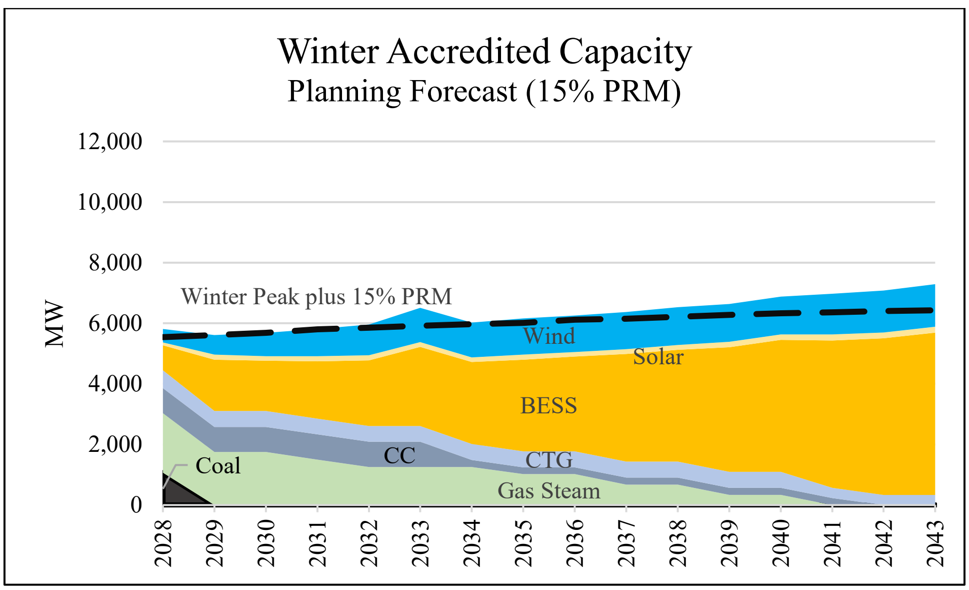


Figure 9F.12: Planning Period - Winter Accredited Capacity



Under the ET case, as shown below in Table 9-5, between 2028 and 2030, the most cost-effective portfolio of resources includes 2,220 MW of battery energy storage and 4,521 MW of variable energy resources. Figures 9F.13 and 9F.14 show the Summer and Winter accredited capacity for new, existing, and proposed generating resources and the associated PRM requirement between 2028 and 2030. Similar, to the MJB case and as shown in Figure 9F.14, between 2028 and 2030, the EnCompass model again adds just enough new resources to meet the existing 15% PRM requirement for the winter.

Table 9-5: Most Cost-Effective Portfolios of Resources ET Case - New Installed Capacity MW (2028 – 2030)

Dispatchable				Variable Energy Resources			
Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
-	-	2,220	**2,220**	3,500	1,021	**4,521**	**6,741**

Figure 9F.13: 2028-2030 Summer Accredited Capacity

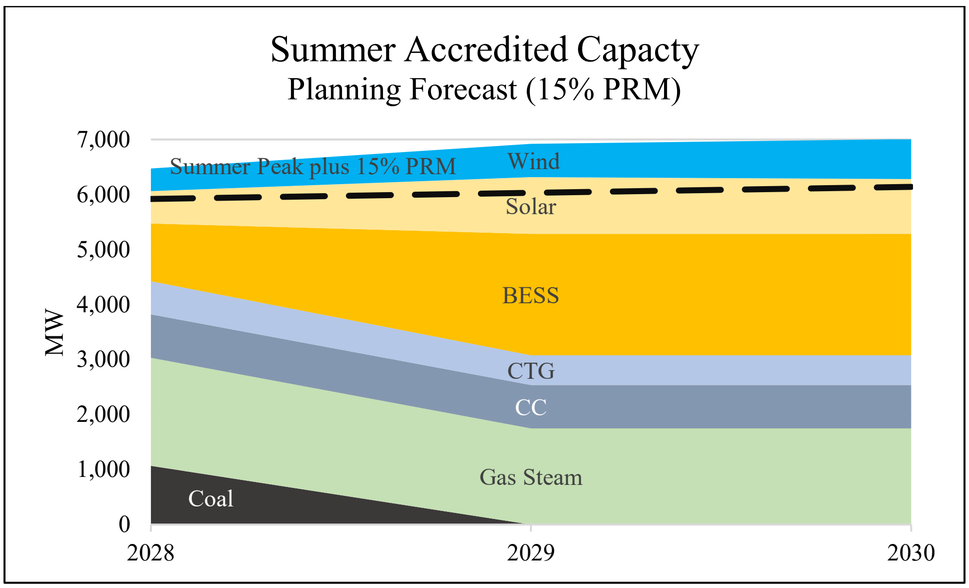
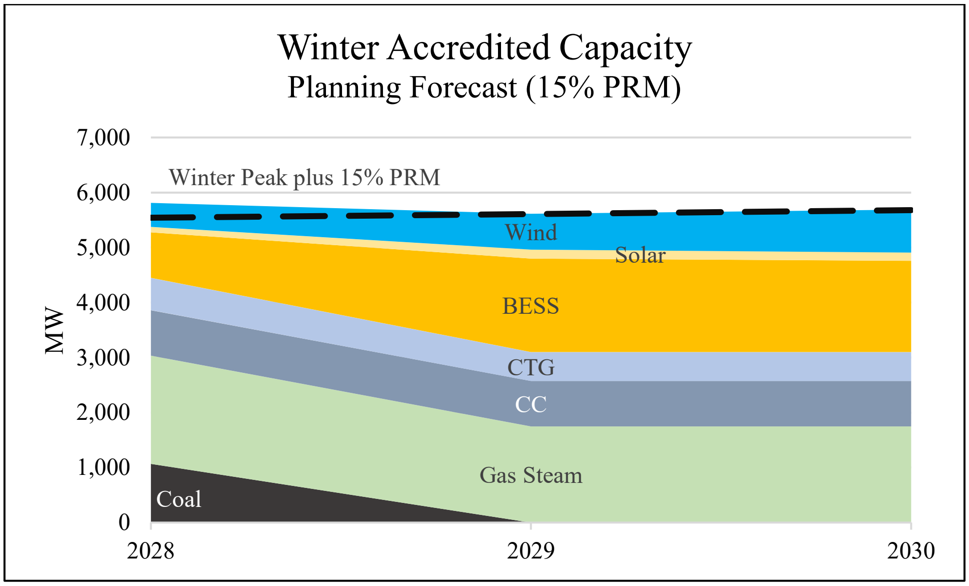


Figure 9F.14: 2028-2030 Winter Accredited Capacity



Comparison & Conclusion – MJB vs ET

Between 2028 and 2043, as shown below in Table 9-6, the ET case requires an additional 6,544 MW of new resources compared to the MJB case. This includes 2,280 MW of additional variable energy resources and 4,264 MW of additional dispatchable capacity. In total, the ET requires the integration of 9,840 MW of additional wind generation and 10,390 MW of relatively short-duration battery energy storage.

Table 9-6: Most Cost-Effective Portfolios of Resources MJB vs ET Cases - New Installed Capacity MW (2028 – 2043)

	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
MJB	4,899	837	390	**6,126**	6,120	4,209	**10,329**	**16,455**
ET	-	-	10,390	**10,390**	9,840	2,769	**12,609**	**22,999**
Delta	(4,899)	(837)	10,000	**4,264**	3,720	(1,440)	**2,280**	**6,544**

As shown below in Table 9-7, between 2028 and 2030, the ET case requires 303 MW of additional generating resources compared to the MJB case. This includes 280 MW less variable energy resources and 583 MW of additional dispatchable capacity.

Table 9-7: Most Cost-Effective Portfolios of Resources MJB vs ET Cases - New Installed Capacity (2028 – 2030)

	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
MJB	700	837	100	**1,637**	3,500	1,301	**4,801**	**6,438**
ET	-	-	2,220	**2,220**	3,500	1,021	**4,521**	**6,741**
Delta	(700)	(837)	2,120	**583**	-	(280)	**(280)**	**303**

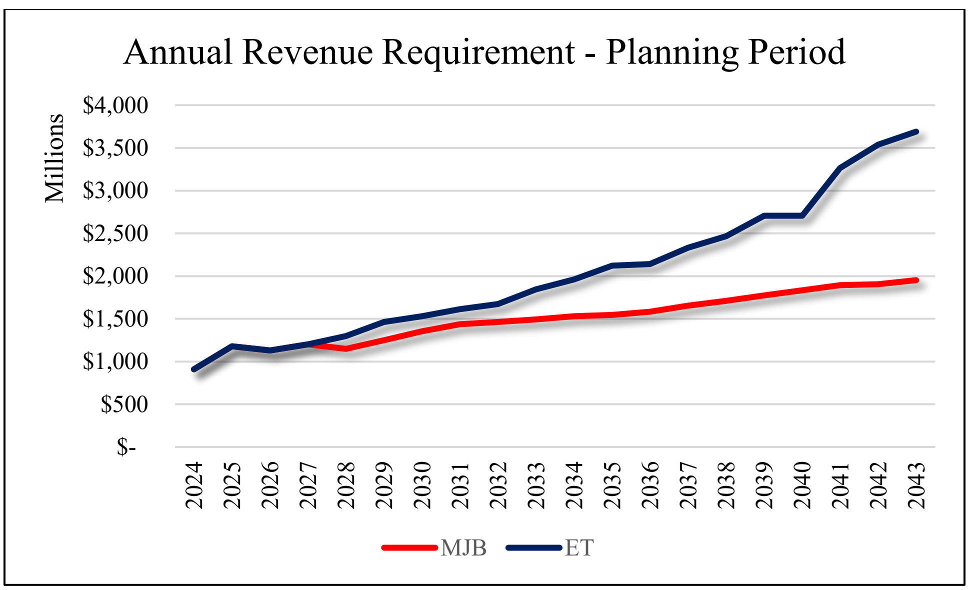
However, despite meeting the Southwest Power Pool's PRM requirement with both modeled cases, SPS has concerns that a portfolio of resources consisting almost exclusively of new wind and short-duration storage would not provide adequate reliability and resiliency. For example, when evaluating the most cost-effective portfolio of resources on a more granular level, the ET case showed substantial amounts of expected unserved energy. Expected unserved energy occurs when there is not enough generation and market energy purchases available to meet projected demand. Furthermore, under the ELCC methodology, the accredited capacity of the new wind and battery energy storage will likely decline more sharply under the ET case than it would under the MJB. Therefore, a portfolio that is extremely heavily dependent on just wind and BESS could potentially require more resources to resolve underlying reliability and resiliency concerns.

Moreover, as shown below in Figure 9F.15 and Table 9-8, the significant overbuild of relatively short-duration battery energy storage is substantially more expensive than the MJB case. Over the 20-year planning period, the ET case is approximately $4.1B more expensive on a PVRR basis than the MJB case. Functionally, the cost to consumers of utilizing the ETA preferred generation portfolio is substantial.

Table 9-8: Most Cost-Effective Portfolios of Resources MJB vs ET Cases – PVRR Cost Comparison

PVRR Production Cost	NPV ($M) 2024-2030	NPV ($M) 2024-2040	NPV ($M) 2024-2043
MJB	$6,648	$14,034	$15,737
ET	$7,029	$16,787	$19,887
Delta ($M)	$381	$2,753	$4,149

Figure 9F.15: Annual Revenue Requirements



In summary, the MJB case provides the least-cost and more reliable solution considering the addition of dispatchable generation that is not limited in duration. However, while it achieves significant carbon reductions, the MJB case does not meet New Mexico's 2045 carbon-free goals. On the other hand, the ET case provides a clear pathway for compliance with the Energy Transition Act but is substantially more expensive for customers and presents potential reliability and resiliency risks. This suggests, therefore, that to achieve the SPS's goal of providing clean, affordable, and reliable energy requires emerging carbon-free and dispatchable technologies that are not currently commercially available. SPS initially evaluated two emerging technology solutions to address these questions. First, SPS considered a scenario in which the problem of overbuilding lithium-ion battery energy storage could be resolved by long duration storage. Second, SPS considered a scenario in which any new gas generation could be converted to operate on clean, carbon-free fuels (i.e., Hydrogen). To be clear, SPS is not suggesting long duration storage or converting gas units to operate on hydrogen are the only solutions; rather, to achieve both the goal of complying with the Energy Transition Act and doing so affordably, SPS believes its future portfolio of resources will likely incorporate several different technologies such as these on the foreseeable horizon. The sole intent of modeling these two scenarios is to demonstrate how emerging technologies are required to overcome current challenges. Finally, at the request of stakeholders, SPS also evaluated SMRs as an alternative clean-fuel, dispatchable solution to these identified challenges in the MJB and ET models.

Technology Case 3: Long Duration Energy Storage

Under the LDS case, in addition to wind, solar and lithium-ion battery energy storage, SPS also included 100-hour energy storage resources for selection in EnCompass beginning 2028 consistent with the assumptions addressed in Section 7.02. As described in the existing technologies case, without the option of adding long duration energy storage, a very large and costly build-out of relatively short duration battery energy storage is required. However, as shown below in Table 9-9, under the LDS case, the amount of energy storage is reduced from 10,390 MW to 6,000 MW.

Table 9-9: Most Cost-Effective Portfolios of Resources LDS vs ET Cases – Installed Capacity (2028 – 2043)

	2028 – 2043 (MW)	
	LDS	**ET**
Storage	6,000	10,390
Wind	10,210	9,840
Solar	3,649	2,769
CTG	-	-
CC	-	-
Total	**19,859**	**22,999**

As described earlier in this section under the ET case, SPS limited the EnCompass model to select only wind, solar and lithium-ion BESS resources. This resulted in a large over-build over BESS. Using the generic cost assumptions and technical characteristics described in Section 7, the availability of LDS avoided the need for such a large buildout of relatively short-duration battery energy storage and decreased system costs from the ET case by approximately $2.5 billion, on a PVRR basis, over the 20-year planning period. Considering the high level of uncertainty in the cost of emerging technologies, such as LDS, it is premature to draw definitive conclusions on the viability and economic feasibility of LDS, but SPS's modeling does demonstrate that longer duration storage can overcome the challenges of today's commercially available storage technologies. Moreover, Xcel Energy has pilot long-duration storage projects underway in other jurisdictions, which provide an opportunity to implement and further evolve these types of technologies in Xcel Energy operations.

Table 9-10:Most Cost-Effective Portfolios of Resources LDS vs ET Cases – PVRR Cost Comparison

PVRR Production Cost	NPV ($M) 2024-2030	NPV ($M) 2024-2040	NPV ($M) 2024-2043
ET	$7,029	$16,787	$19,887
LDS	$6,968	$15,382	$17,367
Delta ($M)	$(61)	$(1,405)	$(2,520)

Technology Case 4: Gas-to-Hydrogen Conversion

Under the Gas-to-Hydrogen Conversion case ("HC"), in addition to wind, solar, and lithium-ion battery energy storage, SPS allowed EnCompass to add CTGs and CCs in 2028 and beyond. Under this case, SPS incorporated potential EPA requirements under Section 111(b) of the Clean Air Act and assumed the new gas-fired CTGs would begin blending 30% Hydrogen, by volume, in 2032, increasing to 96% Hydrogen, by volume, by 2038. Although outside the planning period, this would provide a pathway for 100% carbon-free generation by 2045.

Later in this section, SPS also presents modeling based on Stakeholder requests that incorporates increased hydrogen blending requirements.

Considering the additional hydrogen infrastructure costs and higher cost of hydrogen compared to natural gas, EnCompass selects 933 MW of new hydrogen capable CTGs, which is significantly less than the 4,899 MW of new CTGs included in the MJB case. With fewer CTGs, the most cost-effective portfolio of resources under the HC includes 7,090 MW of new BESS which is significantly more than the 390 MW selected in the MJB case, but less than the 10,390 MW selected in the ET case.

Table 9-11: Most Cost-Effective Portfolios of Resources HC vs MJB vs ET Cases – Installed Capacity (2028 – 2043)

	2028 – 2043 (MW)		
Technology	**HC**	**MJB**	**ET**
Storage	7,090	390	10,390
Wind	9,640	6,120	9,840
Solar	2,799	4,209	2,769
CTG	933	4,899	0
CC	837	837	0
Total	**21,299**	**16,455**	**22,999**

Under the generic cost assumptions and technical characteristics described in Section 7, similar to the LDS case, the addition of Hydrogen capable CTGs partly offsets the large buildout of relatively short-duration battery energy storage and reduces costs by approximately $1.9 billion, on a PVRR basis, compared to the ET case over the 20-year planning period.

Table 9-12:Most Cost-Effective Portfolios of Resources HC vs ET Cases – PVRR Cost Comparison

PVRR Production Cost	NPV ($M) 2024-2030	NPV ($M) 2024-2040	NPV ($M) 2024-2043
ET	$7,029	$16,787	$19,887
HC	$6,887	$15,664	$17,991
Delta ($M)	$(142)	$(1,123)	$(1,896)

Planning Load Comparison

Under the planning load forecast, SPS has an accredited capacity need of 2,142 MW in 2030, increasing to 6,606 MW by 2043. Dependent upon the technologies available for selection, the most-cost effective portfolio of resources includes between 16,455 MW and 21,299 MW of new resources over the planning period to meet this growing capacity need.

Table 9-13:Most Cost-Effective Portfolios of Resources All Cases – Installed Capacity MW (2028 – 2043)

	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
MJB	4,899	837	390	**6,126**	6,120	4,209	**10,329**	**16,455**
ET	-	-	10,390	**10,390**	9,840	2,769	**12,609**	**22,999**
LDS	-	-	6,000	**6,000**	10,210	3,649	**13,859**	**19,859**
HC	933	837	7,090	**8,860**	9,640	2,799	**12,439**	**21,299**

Over a short timeframe, between 2028 and 2030, the most cost-effective portfolio of resources includes between 6,438 MW and 7,311 MW of new resources. This includes between 1,637 MW and 2,220 MW of dispatchable capacity and between 4,521 MW and 5,331 MW of variable energy resources.

Table 9-14: Most Cost-Effective Portfolios of Resources All Cases – Installed Capacity MW (2028 – 2030)

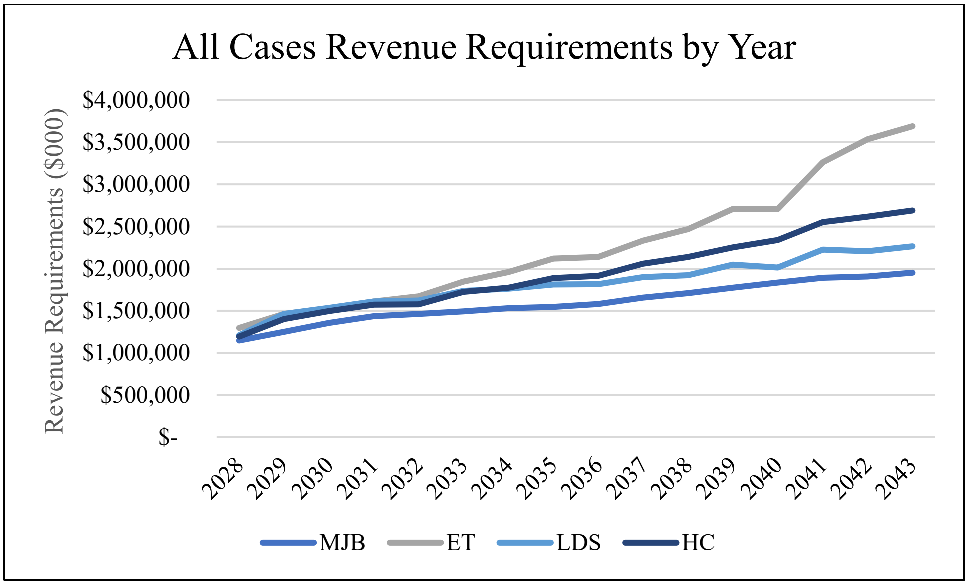
	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
MJB	700	837	100	**1,637**	3,500	1,301	**4,801**	**6,438**
ET	-	-	2,220	**2,220**	3,500	1,021	**4,521**	**6,741**
LDS	-	-	1,980	**1,980**	3,500	1,831	**5,331**	**7,311**
HC	933	837	170	**1,940**	3,500	1,051	**4,551**	**6,491**

Table 9-15 shows a PVRR cost comparison between all four technology assumptions. As described earlier in this section, the ET case is approximately $4.1 billion more expensive than the MJB case, on a PVRR basis between 2024 – 2043. Although the LDS and HC cases are higher cost than the MJB case, they demonstrate how emerging technologies can substantially reduce the cost and size of the resource need for a carbon-free generation portfolio. The annual revenue requirements of each scenario are shown in Figure 9.16.

Table 9-15: Most Cost-Effective Portfolios of Resources All Cases – Present Value of Revenue Requirements (2024-2043)

	Delta ($M)	**NPV ($M) 2024-2030**	**Delta ($M)**	**NPV ($M) 2024-2040**	**Delta ($M)**	**NPV ($M) 2024-2043**
MJB	-	$6,648	-	$14,034	-	$15,737
ET	$381	$7,029	$2,753	$16,787	$4,149	$19,887
LDS	$320	$6,968	$1,348	$15,382	$1,629	$17,367
HC	$239	$6,887	$1,630	$15,664	$2,254	$17,991

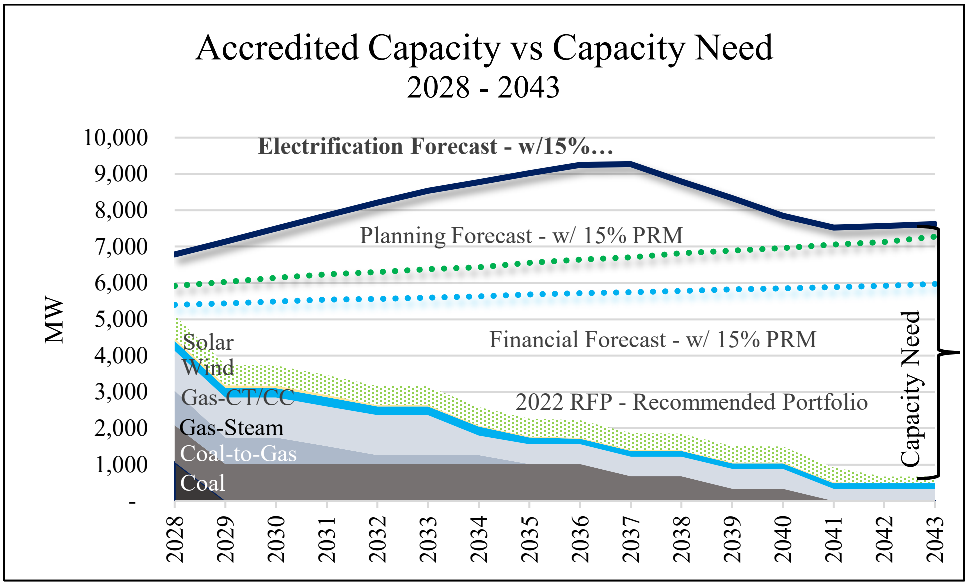
Figure 9F.16: Most Cost-Effective Portfolios of Resources All Cases – Present Value of Revenue Requirements (2028-2043)



Electrification Forecast

Under the electrification forecast, SPS has a capacity need of 3,768 MW in 2030, increasing to 7,032 MW in 2036, and decreasing slightly to 6,956 MW by 2043. As shown below in Figure 9F.17 the projected peak demand forecasted in the electrification forecast and the planning forecast converge by the early 2040's. Therefore, as described in detail below, it is not surprising that, over the entire planning period, the total installed capacity included in the most cost-effective portfolio of resources between each load forecasts are similar. However, as the electrification forecast is significantly higher through 2036, the resources included in the most cost-effective portfolio of resources are, in general, added sooner than they would be under the planning forecast.

Figure 9F.17: Accredited Capacity vs Capacity Need: 2028 - 2043



Technology Case 1: Multi-Jurisdictional Baseline

As shown below in Table 9-16, Over the entire planning period, there is little difference in the total installed capacity between the electrification forecast compared to the planning forecast. For example, the electrification forecast includes 16,149 MW of new installed capacity, compared to 16,455 MW under the planning forecast.

Table 9-16:MJB Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	570	390	180
Wind	5,700	6120	(420)
Solar	3,869	4209	(340)
CTG	3,500	4899	(1,400)
CC	2,511	837	1,674
Total	**16,149**	**16,455**	**(306)**

However, as shown below in Table 9-17 between 2028 and 2030, the most cost-effective portfolio of resources includes an additional 1,727 MW of new generating resources under the electrification forecast, compared to the planning forecast. In short, the primary difference is that the electrification forecast requires an accelerated buildout of new resources compared to the planning forecast.

Table 9-17: MJB Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	10	100	(90)
Wind	3,500	3,500	-
Solar	1,211	1,301	(90)
CTG	933	700	233
CC	2,511	837	1,674
Total	**8,165**	**6,438**	**1,727**

Technology Case 2: Existing Commercially Available, Carbon-Free Technologies

Similar to the MJB case, as shown below in Table 9-18, over the entire planning period, there is little difference in the total installed capacity between the electrification forecast compared to the planning forecast under the ET case. For example, the electrification forecast includes 23,610 MW of new installed capacity, compared to 22,999 MW under the planning forecast.

Table 9-18:ET Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	11,200	10,390	810
Wind	8,730	9,840	(1,110)
Solar	3,680	2,769	911
CTG	-	0	-
CC	-	0	-
Total	**23,610**	**22,999**	**611**

However, once again as shown below in Table 9-19, between 2028 and 2030, the most cost-effective portfolio of resources includes an additional 2,840 MW of new generating resources under the electrification forecast, compared to the planning forecast – once again demonstrating the need for an accelerated buildout of new resources.

Table 9-19:ET Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	3,810	2,220	1,590
Wind	3,500	3,500	-
Solar	2,271	1,021	1,250
CTG	-	0	-
CC	-	0	-
Total	**9,581**	**6,741**	**2,840**

Technology Case 3: Long Duration Energy Storage

Under the LDS case, as shown below in Table 9-20, over the entire planning period, in keeping with the other technology cases, there is little difference in the total installed capacity between the electrification forecast compared to the planning forecast. For example, the electrification forecast includes 20,589 MW of new installed capacity, compared to 19,859 MW under the planning forecast.

Table 9-20: LDS Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	6,750	6,000	750
Wind	9,080	10,210	(1,130)
Solar	4,759	3,649	1,110
CTG	-	0	-
CC	-	0	-
Total	**20,589**	**19,859**	**730**

However, as shown below in Table 9-21 between 2028 and 2030, the most cost-effective portfolio of resources includes an additional 2,460 MW of new generating resources under the electrification and emerging forecast, compared to the planning forecast.

Table 9-21: LDS Installed Capacity Electrification vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	3,260	1,980	1,280
Wind	3,500	3,500	-
Solar	3,011	1,831	1,180
CTG	-	0	-
CC	-	0	-
Total	**9,771**	**7,311**	**2,460**

Technology Case 4: Gas-to-Hydrogen Conversion

Finally, as shown below in Table 9-22, Over the entire planning period, there is also very little difference in the total installed capacity between the electrification forecast compared to the planning forecast. For example, the electrification and emerging technologies forecast includes 21,400 MW of new installed capacity, compared to 21,319 MW under the planning forecast.

Table 9-22:HC Installed Capacity Electrification vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	8,140	7,090	1,050
Wind	8,740	9,640	(900)
Solar	2,750	2,799	(49)
CTG	933	933	-
CC	837	837	-
Total	**21,400**	**21,299**	**101**

However, as shown below in Table 9-23 between 2028 and 2030, the most cost-effective portfolio of resources includes an additional 1,680 MW of new generating resources under the electrification forecast, compared to the planning forecast.

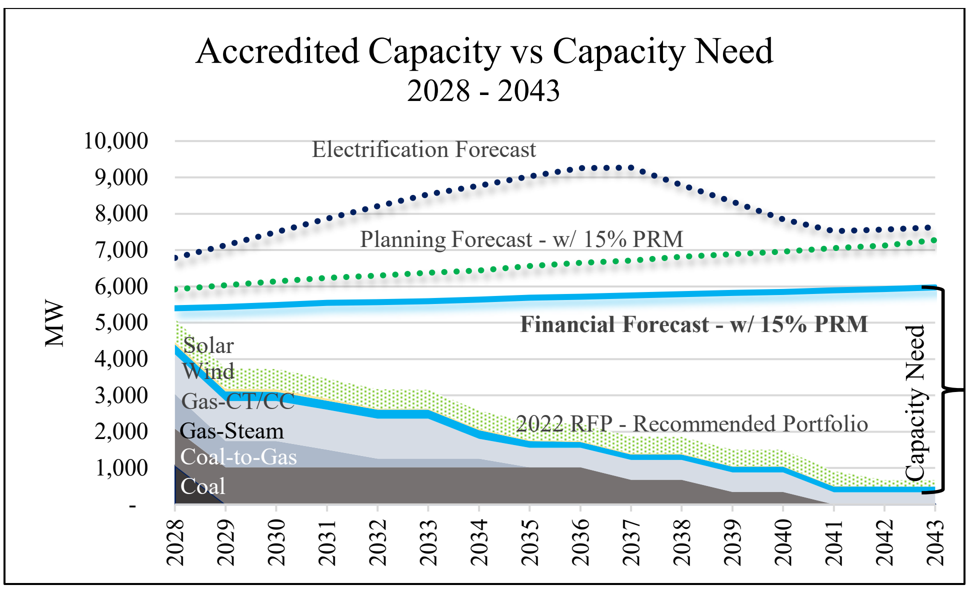
Table 9-23:HC Installed Capacity Electrification Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology Type	**EF**	**PF**	**Delta**
Storage	1,580	170	1,410
Wind	3,500	3,500	-
Solar	1,341	1,051	290
CTG	933	933	-
CC	837	837	-
Total	**8,191**	**6,491**	**1,700**

Financial Forecast

Under the financial forecast, SPS has a capacity need of 1,760 MW in 2030, increasing to 5,482 MW by 2043. Similar to the planning forecast and the electrification forecast cases, the most cost-effective portfolio of resources is highly dependent on technologies available.

Figure 9F.18: Accredited Capacity vs Capacity Need: 2028 – 2043



Technology Case 1: Multi-Jurisdictional Baseline

As shown below in Tables 9-24 and 9-25, over the entire planning period, the most cost-effective portfolio of resources under the financial forecast includes 12,595 MW of new resources, compared to 16,455 MW under the planning forecast. Likewise, through 2030, the most cost-effective portfolio of resources under the financial forecast includes 5,474 MW of new resources compared to 6,438 MW under the planning forecast.

Table 9-24:MJB Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 - 2043 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	130	390	(260)
Wind	4,740	6120	(1,380)
Solar	3,059	4209	(1,150)
CTG	4,666	4899	(233)
CC	-	837	(837)
Total	**12,595**	**16,455**	**(3,860)**

Table 9-25:MJB Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	130	100	30
Wind	3,390	3500	(110)
Solar	1,021	1301	(280)
CTG	933	700	233
CC	-	837	(837)
Total	**5,474**	**6,438**	**(964)**

Technology Case 2: Existing Commercially Available, Carbon-Free Technologies

As shown below in Tables 9-26 and 9-27, over the entire planning period, the most cost-effective portfolio of resources under the financial forecast includes 18,449 MW of new resources, compared to 22,999 MW under the planning forecast. Likewise, through 2030, the most cost-effective portfolio of resources includes 5,901 MW compared to 6,741 MW under the planning forecast.

Table 9-26:ET Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	7,960	10390	(2,430)
Wind	7,720	9840	(2,120)
Solar	2,769	2769	-
CTG	-	0	-
CC	-	0	-
Total	**18,449**	**22,999**	**(4,550)**

Table 9-27:ET Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	1,380	2220	(840)
Wind	3,500	3500	-
Solar	1,021	1021	-
CTG	-	0	-
CC	-	0	-
Total	**5,901**	**6,741**	**(840)**

Technology Case 3: Long Duration Energy Storage

As shown below in Tables 9-28 and 9-29, over the entire planning period, the most cost-effective portfolio of resources under the financial forecast includes 15,449 MW of new resources, compared to 19,859 MW under the planning forecast. Likewise, through 2030, the most cost-effective portfolio of resources includes 5,871 MW compared to 7,311 MW under the planning forecast.

Table 9-28:LDS Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	4,470	6000	(1,530)
Wind	8,140	10210	(2,070)
Solar	2,839	3649	(810)
CTG	-	0	-
CC	-	0	-
Total	**15,449**	**19,859**	**(4,410)**

Table 9-29:LDS Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	1,280	1980	(700)
Wind	3,500	3500	-
Solar	1,091	1831	(740)
CTG	-	0	-
CC	-	0	-
Total	**5,871**	**7,311**	**(1,440)**

Technology Case 4: Gas-to-Hydrogen Conversion

As shown below in Tables 9-30 and 9-31, over the entire planning period, the most cost-effective portfolio of resources under the financial forecast includes 16,329 MW of new resources, compared to 21,319 MW under the planning forecast. Likewise, through 2030, the most cost-effective portfolio of resources includes 5,314 MW compared to 6,511 MW under the planning forecast.

Table 9-30:HC Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	4,710	7090	(2,380)
Wind	7,080	9640	(2,560)
Solar	2,769	2799	(30)
CTG	933	933	-
CC	837	837	-
Total	**16,329**	**21,299**	**(4,970)**

Table 9-31:HC Installed Capacity Financial Forecast vs Planning Forecast (2028 – 2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**FF**	**PF**	**Delta**
Storage	110	170	(60)
Wind	3,250	3,500	(250)
Solar	1,021	1,051	(30)
CTG	933	933	-
CC	-	837	(837)
Total	**5,314**	**6,491**	**(1,177)**

Alternative Portfolio - Modeling for Resource Adequacy Uncertainty

The Southwest Power Pool currently performs a LOLE study every two years to determine the adequate amount of planning reserves needed to maintain a reliability metric of one day, or less, in ten years, as required by Attachment AA of the Southwest Power Pool OATT. The Southwest Power Pool recently increased the PRM requirement from 12% to 15%, effective Summer 2023.

SPS actively participates in several Southwest Power Pool working groups, including the Supply Adequacy Working Group ("SAWG"). The SAWG develops and oversees policies and procedures related to reliable supply adequacy within the Southwest Power Pool's footprint, including the PRM requirement. During recent SAWG meetings, Southwest Power Pool staff have repeatedly opined the PRM could potentially increase further to maintain the 1 in 10 years reliability metric. Furthermore, the Southwest Power Pool has proposed to introduce a new winter resource adequacy requirement, which could have a separate planning reserve margin requirement. Preliminary results have shown a higher winter PRM may be required, in part due to the planned outages of generators that can occur over the winter months. Although any further increase to the Southwest Power Pool's planning reserve margin requirement is yet to-be-determined, SPS evaluated two different PRM sensitivities. In the first case, SPS evaluated the existing 15% year-round PRM. In the second case, SPS evaluated an alternative portfolio assuming an 18% summer PRM requirement and a 20% winter PRM requirement. A key takeaway from each of these analyses is higher levels of dispatchable capacity resources to meet the increased resource needs as the PRM steps up from 15% to the higher summer and winter values.

The additional resources needed to meet the increased PRM between 2028-2043 and 2028-2030 in the most cost-effective portfolio of resources under the ET, LDS, and HC cases are shown below in Tables 9-32 through 9-37. These tables, all set forth in order below, show the impacts based on different scenarios when a higher PRM is required in the modeling. Each table shows the changes by technology type along with a positive or negative delta reflecting the change for each technology in each respective case.

Table 9-32: Existing Technology Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	10,390	10,980	590
Wind	9,840	9,870	30
Solar	2,769	2,769	-
Firm Peaking	-	-	-
CC	-	-	-
Total	**22,999**	**23,619**	**620**

Table 9-33: Existing Technology Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	2,220	2,530	310
Wind	3,500	3,500	-
Solar	1,021	1,021	-
Firm Peaking	-	-	-
CC	-	-	-
Total	**6,741**	**7,051**	**310**

Table 9-34: Long Duration Energy Storage Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	6,000	6,410	410
Wind	10,210	10,410	200
Solar	3,649	3,519	(130)
Firm Peaking	-	-	-
CC	-	-	-
Total	**19,859**	**20,339**	**480**

Table 9-35: Long Duration Energy Storage Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	1,980	2,310	330
Wind	3,500	3,500	-
Solar	1,831	1,771	(60)
Firm Peaking	-	-	-
CC	-	-	-
Total	**7,311**	**7,581**	**270**

Table 9-36: Hydrogen Conversion Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	7,090	7,720	630
Wind	9,640	9,610	(30)
Solar	2,799	2,769	(30)
Firm Peaking	933	933	-
CC	837	837	-
Total	**21,299**	**21,869**	**570**

Table 9-37: Hydrogen Conversion Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**15% PRM**	**18%/ 20% PRM**	**Delta**
Standalone Storage	170	360	190
Wind	3,500	3,500	-
Solar	1,051	1,021	(30)
Firm Peaking	933	933	-
CC	837	837	-
Total	**6,491**	**6,651**	**160**

The incremental cost of acquiring the additional dispatchable capacity to meet a higher PRM is shown below in Figures 9F.19 and 9F.20. Under the HC case, the incremental cost is $77M, on a PVRR basis, through 2030. This is slightly lower than the LDS and ET cases which are $113M and $98M more expensive than the corresponding 15% PRM cases. Over the entire planning period, the incremental cost of meeting the higher PRM ranges from $371M to $428M, on a PVRR basis.

Figure 9F.19: Present Value Revenue Requirements (PVRR) by Technology Case and Resource Adequacy 2024-2030

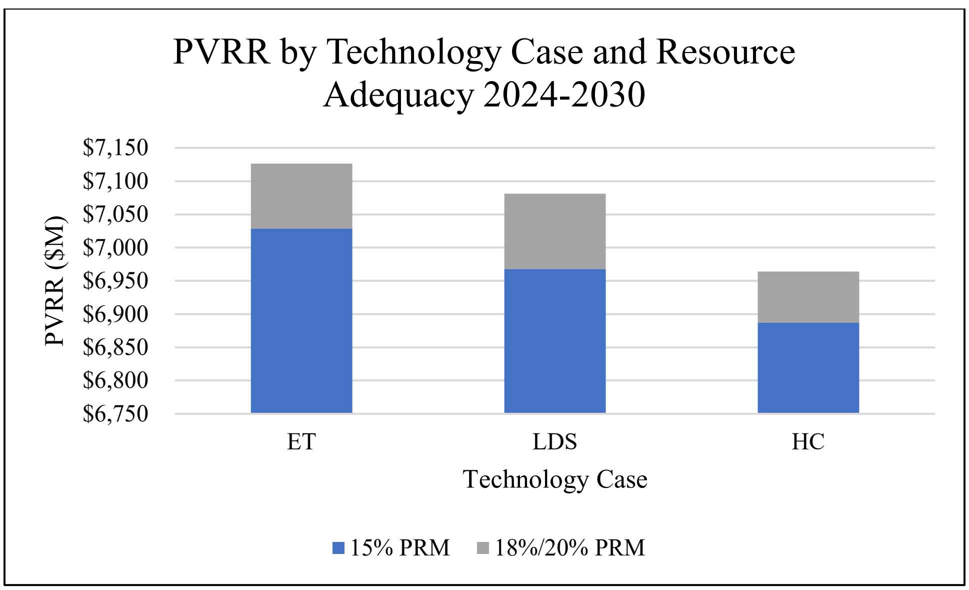
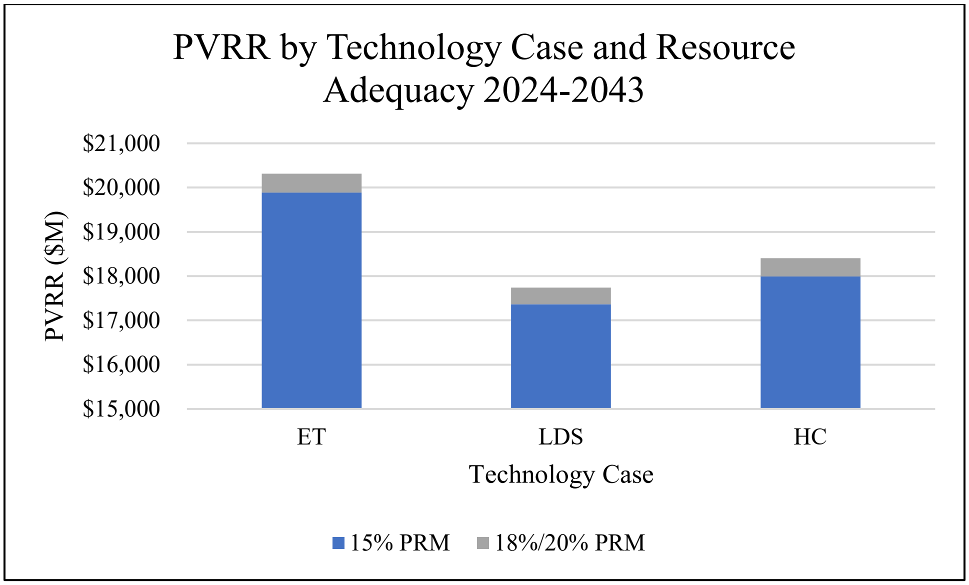


Figure 9F.20: Present Value Revenue Requirements (PVRR) by Technology Case and Resource Adequacy 2024-2043



Alternative Portfolio - Modeling for Natural Gas and Market Energy Price Uncertainty

Natural gas and market energy price forecasts are important modeling inputs. As described in Section 7, SPS conducted additional modeling using low and high natural gas and market energy prices forecasts. The results of these alternative portfolios are shown below in Tables 9-38 through 9-43 for each different technology assumptions, natural gas and market energy price forecast, and relevant time period.

Table 9-38: ET Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**Low**	**Base**	**High**
Storage	10,550	10,390	10,330
Wind	9,290	9,840	9,690
Solar	2,769	2,769	4,049
CTG	-	-	-
CC	-	-	-
Total	**22,609**	**22,999**	**24,069**

Table 9-39: ET Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**Low**	**Base**	**High**
Storage	2,220	2,220	2,070
Wind	3,500	3,500	3,500
Solar	1,021	1,021	2,301
CTG	-	-	-
CC	-	-	-
Total	**6,741**	**6,741**	**7,871**

Table 9-40: LDS Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**Low**	**Base**	**High**
Storage	6,170	6,000	5,820
Wind	9,330	10,210	9,730
Solar	2,939	3,649	5,299
CTG	-	-	-
CC	-	-	-
Total	**18,439**	**19,859**	**20,849**

Table 9-41: LDS Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**Low**	**Base**	**High**
Storage	2,120	1,980	1,780
Wind	3,500	3,500	3,500
Solar	1,021	1,831	3,421
CTG	-	-	-
CC	-	-	-
Total	**6,641**	**7,311**	**8,701**

Table 9-42: HC Case (2028-2043)

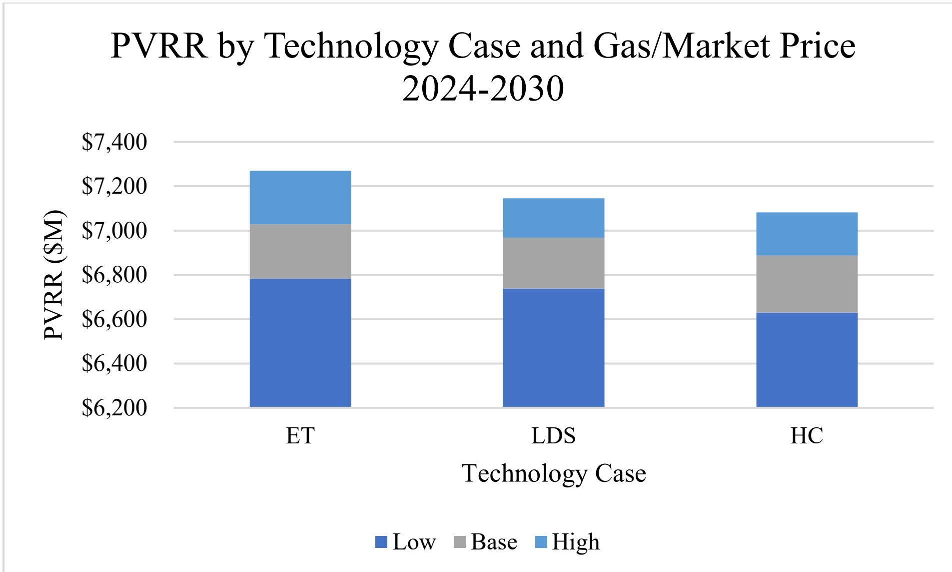
	Installed Capacity: 2028 – 2043 (MW)		
Technology	**Low**	**Base**	**High**
Storage	7,280	7,090	7,070
Wind	8,890	9,640	9,190
Solar	2,769	2,799	3,969
CTG	933	933	933
CC	837	837	837
Total	**20,709**	**21,299**	**21,999**

Table 9-43: HC Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**Low**	**Base**	**High**
Storage	200	170	340
Wind	3,500	3,500	3,500
Solar	1,021	1,051	2,221
CTG	933	933	467
CC	837	837	837
Total	**6,491**	**6,491**	**7,365**

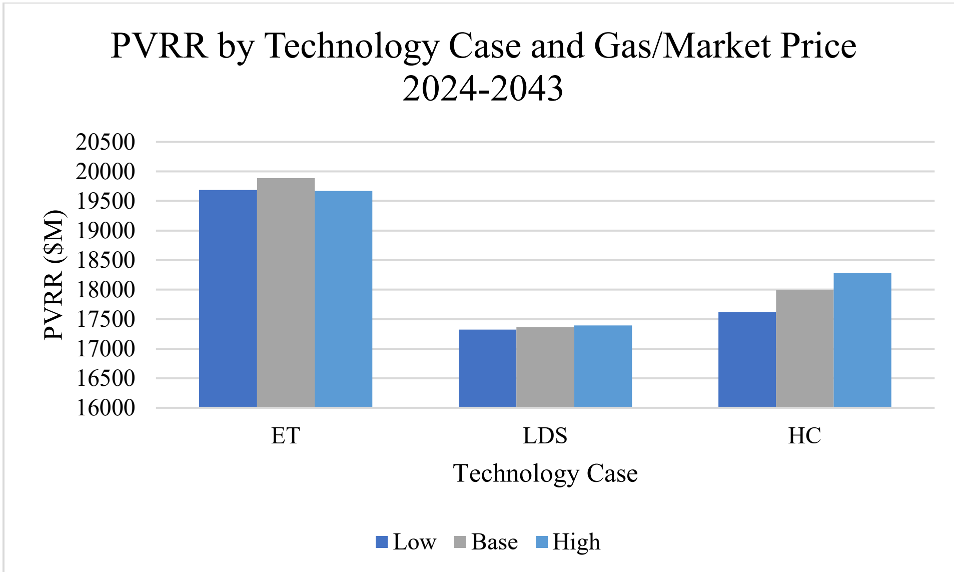
As shown below in Figure 9F.21, natural gas and market energy price forecasts can have a significant impact on the total cost of each portfolio. Through 2030, under the ET case, on a PVRR basis, the high natural gas and market energy price forecast is $242M more expensive than the base case, which is $246M expensive than the low natural gas and market energy price forecast. Under the LDS case, on a PVRR basis, the high case is $177M more expensive than the base case, which is $229M more expensive than the low case. Finally, under the HC, on a PVRR basis, the high case is $194M more expensive than the base case, which is $257M more expensive than the low case.

Figure 9F.21: Present Value Revenue Requirements (PVRR) by Technology Case and Gas/Market Price 2024-2030



Through 2043, under the ET case, on a PVRR basis, the high natural gas and market energy price forecast is $215M less expensive than the base case, which is $198M expensive than the low natural gas and market energy price forecast. The lower cost in the high natural gas and market energy price forecast is driven by the projected increase in market sales to other entities within the Southwest Power Pool. Under the LDS case, on a PVRR basis, the high case is only marginally more expensive than the base case, which is marginally more expensive than the low case. Finally, under the HC, on a PVRR basis, the high case is $289M more expensive than the base case, which is $369M more expensive than the low case.

Figure 9F.22: Present Value Revenue Requirements (PVRR) by Technology Case and Gas/Market Price 2024-2043



Alternative Portfolio - Modeling for Transmission Network Upgrade Cost Uncertainty

New generating resources are often assigned transmission network upgrade costs by the Southwest Power Pool. As the cost of transmission network upgrades are unknown for generic resources, SPS also evaluated scenarios in which new generic resources that were burdened with transmission network upgrade costs were assigned $600/kW. The results of these alternative portfolios are shown below in Tables 9-44 through 9-49 for the each of the technology assumptions, transmission network upgrade costs and relevant time period.

Table 9-44: ET Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	10,390	10,430	40
Wind	9,840	9,750	(90)
Solar	2,769	2,769	0
CTG	-	-	-
CC	-	-	-
Total	**22,999**	**22,949**	**(50)**

Table 9-45: ET Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	2,220	2,220	0
Wind	3,500	3,500	0
Solar	1,021	1,021	0
CTG	-	-	-
CC	-	-	-
Total	**6,741**	**6,741**	**0**

Table 9-46: LDS Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	6,000	6,130	130
Wind	10,210	9,420	(790)
Solar	3,649	3,389	(260)
CTG	-	-	-
CC	-	-	-
Total	**19,859**	**18,939**	**(920)**

Table 9-47: LDS Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	1,980	2,070	90
Wind	3,500	3,500	0
Solar	1,831	1,021	(810)
CTG	-	-	-
CC	-	-	-
Total	**7,311**	**6,591**	**(720)**

Table 9-48: HC Case (2028-2043)

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	7,090	7,160	70
Wind	9,640	9,370	(270)
Solar	2,799	2,769	(30)
CTG	933	933	0
CC	837	837	0
Total	**21,299**	**21,069**	**(230)**

Table 9-49: HC Case (2028-2030)

	Installed Capacity: 2028 – 2030 (MW)		
Technology	**$400/kW**	**$600/kW**	**Delta**
Storage	170	90	(80)
Wind	3,500	3,500	0
Solar	1,051	1,021	(30)
CTG	933	933	0
CC	837	837	0
Total	**6,491**	**6,381**	**(110)**

The incremental cost of higher transmission network upgrade costs is shown below in Figures 9F.23 and 9F.24. Under the ET and HC cases, the incremental cost is $129M and $205M, respectively on a PVRR basis, through 2030. There is no material impact to the LDS case. Over the entire planning period, the incremental cost for the ET, LDS, and HC cases is $1 billion, $1.46 billion, and $584M, respectively, on a PVRR basis.

Figure 9F.23: Present Value Revenue Requirements (PVRR) by Technology Case and Transmission Cost 2024-2030

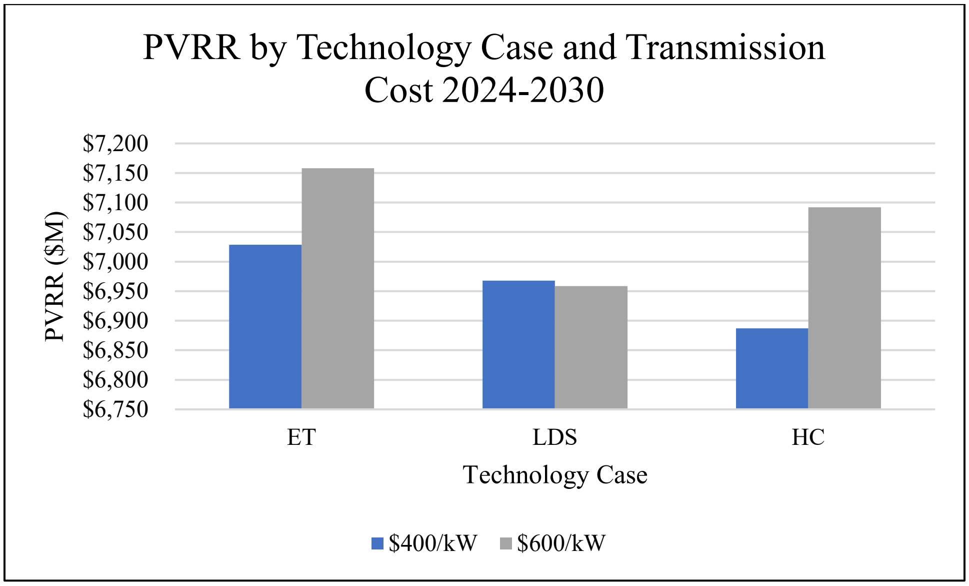
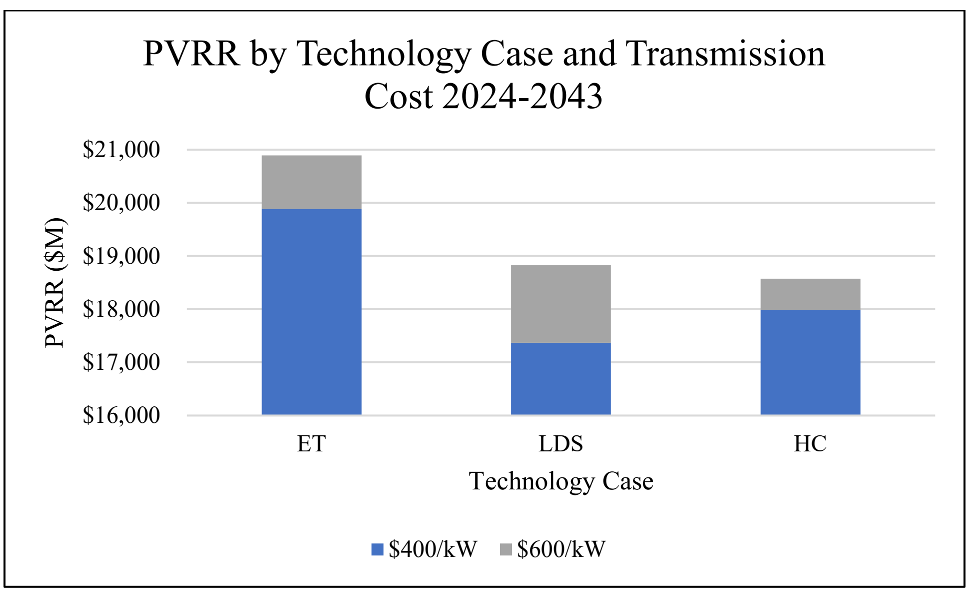


Figure 9F.24: Present Value Revenue Requirements (PVRR) by Technology Case and Transmission Cost 2024-2043



Stakeholder Requests

In addition to the most cost-effective portfolios of resources and alternative portfolios described above, SPS also conducted modeling on behalf of stakeholders. The stakeholder requested runs, which are described in more detail below, include:

- Early compliance with the ETA
- Demand Side - Virtual Power Plant
- Demand Side – Dynamic Load Shifting (Time of Use Rates)
- Demand Side – Increased Demand Response
- Increased Hydrogen Blending
- RICE Resources
- SMRs

The present value revenue requirements for each stakeholder requested scenario is provided in Appendix I and the additional resources included in each most cost-effective portfolio of resources is provided in Appendix J. Furthermore, at a stakeholder's request, SPS is providing load duration curves and summer net peak demand curves in Appendix K

Early Compliance with ETA

During the stakeholder process, a stakeholder requested that SPS evaluate accelerated compliance with the ETA, including *'80% carbon free resources by 2030 and 95% by 2035 on the pathway to 2040 zero carbon target'*. The stakeholder requested that SPS evaluate the early compliance scenario under the LDS case assuming the planning load forecast.

However, upon reviewing the results of the base LDS case, SPS already achieves 80% of energy sales by renewable resources by 2030, 96% by 2035, 97%

by 2040, and 99.6% by 2042, meeting the accelerated 2030 and 2035 objectives. To meet 100% by 2040 would require the early retirement of SPS's existing gas CTGs that have a current scheduled retirement date beyond 2040.

Virtual Power Plant

SPS agreed to evaluate a scenario in which approximately 5% of SPS's existing New Mexico residential and small C&I energy sales are served with distributed solar and BESS. This was a request through the Facilitated Stakeholder Process, and a stakeholder requested SPS evaluate this scenario under the ET case and electrification forecast.

SPS relied upon NREL ATB data for the cost and capacity factor for distributed solar and BESS and calculated a need for 113.3MW of distributed solar and 56.7MW of BESS (assuming a 2:1 ratio of solar to BESS). The modeling input assumptions are summarized below in Table 9-50.

Table 9-50:Distributed Solar and BESS Input Assumptions

	Nameplate Capacity (MW)	Capital Cost ($/kW)	Fixed O&M ($/kW-yr.)	Capacity Factor (%)	Life (yr.)
Solar	113.3	2,164.75	22.89	22.03	30
BESS	56.7	1,999.31	71.40	17.55	20

As EnCompass did not select the distributed solar and BESS resources, SPS 'forced' the resources into the model. The additional distributed solar and BESS resources avoided 50 MW of utility-scale solar, 30 MW of utility scale BESS, and the transmission network upgrade costs assigned to the utility-scale solar resources.

Overall, the distributed solar and BESS projects increased the overall cost of the portfolio by $82M on a PVRR basis.

Dynamic Load Shifting

SPS agreed to evaluate a scenario in which approximately 5% of SPS's existing New Mexico residential and small C&I energy sales can be shifted from 'net on-peak' to 'net-off peak' to mimic the potential benefits of time-of-use rates. This was a request through the Facilitated Stakeholder Process, and a stakeholder requested SPS evaluate this scenario under the ET case and electrification forecast.

SPS calculated the program size to be 119.3 MW and assumed it could be utilized 365 days per year for up to 4-hours per day. SPS then grossed up the accredited capacity of the program by 15% on the assumption SPS would avoid carrying planning reserves. No cost was assigned for implementing the program. The dynamic load shifting program avoided 30 MW of wind, 10 MW of solar, 250 MW of utility scale BESS, and the transmission network upgrade costs assigned the wind and solar utility scale projects. Overall, the dynamic load shifting scenario lowered the overall cost of the portfolio by $294M on a PVRR basis.

Demand Response

SPS evaluated a scenario which included an additional 200 MW demand response program. This was a request through the Facilitated Stakeholder Process, and a stakeholder requested SPS evaluate this scenario under the LDS case and planning forecast.

The program could be utilized 365 days per year for up to 4-hours per day. No cost was assigned for implementing the program. The demand response program avoided 400 MW of BESS, 170 MW of wind and resulted in 120 MW of additional solar through 2043. The demand response program also avoided the transmission network upgrade costs assigned to the avoided wind generation, but did incur transmission network upgrade costs assigned to the incremental solar resources. The overall cost of the portfolio was reduced by $439M on a PVRR basis, recognizing that the scenario assumed no cost for implementing the program. Costs for implementing the program would affect this modeled PVRR value, with the potential for material impacts depending on these costs.

Increased Hydrogen Blending

SPS evaluated its HC case under the electrification forecast with an increased ratio of hydrogen blending between 2032 and 2037. In SPS's base modeling, during this time SPS assumed Hydrogen would equate to 30% by volume. In the increased Hydrogen blending case, SPS increased the assumed Hydrogen ratio to 50% by volume (based on a blending assumption developed in coordination with select stakeholders through the Facilitated Stakeholder Process). Under the increased hydrogen blending scenario, the portfolio of resources remained fundamentally the same and costs increased by $16M on a PVRR basis.

RICE Resources

As requested by stakeholders, SPS evaluated a scenario where, in addition to the technologies available for selection under the HC case, RICE units were also available for selection. SPS set a limit of two RICE facilitates per year, with each facility consisting of three 18.8 MW units, for a total annual limit of 113 MW of reciprocating engines per year. Please refer to Section 7 for more information on the assumptions used for RICE resources.

Under this scenario, EnCompass added the maximum annual amount of RICE resource per year, for a total of 1,807 MW. The addition of 1,807 MW of reciprocating engines offset the need for 3,390 MW of lithium-ion battery energy storage. The selection of the RICE resources in lieu of 3,390 MW of lithium-ion BESS, further reduced the cost of the HC case by approximately $519M, on a PVRR basis, compared to the same case without the RICE resources.

Sub-Hourly Credit

In addition to the RICE case described above, and as requested by a stakeholder, SPS evaluated the RICE case and assigned a sub-hourly credit to resources that had sub-hourly dispatch capabilities. At the request of stakeholders, SPS incorporated the following credits:

Table 9-51:RICE Case – Stakeholder Derived Sub-Hourly Credit

Technology	Sub-Hourly Credit ($/kW-year)
BESS (4-hr)	$113
RICE	$80
CTG	$54

To be clear, SPS did not derive the sub-hourly credits and has concerns with the stakeholder's suggested approach. However, in the spirit of transparency, SPS did evaluate the stakeholder scenario and incorporated a sub-hourly credit. When modeling a sub-hourly credit, EnCompass replaced all CTGs and most RICE resources with BESS (which received the highest sub-hourly credit) and added additional wind resources.

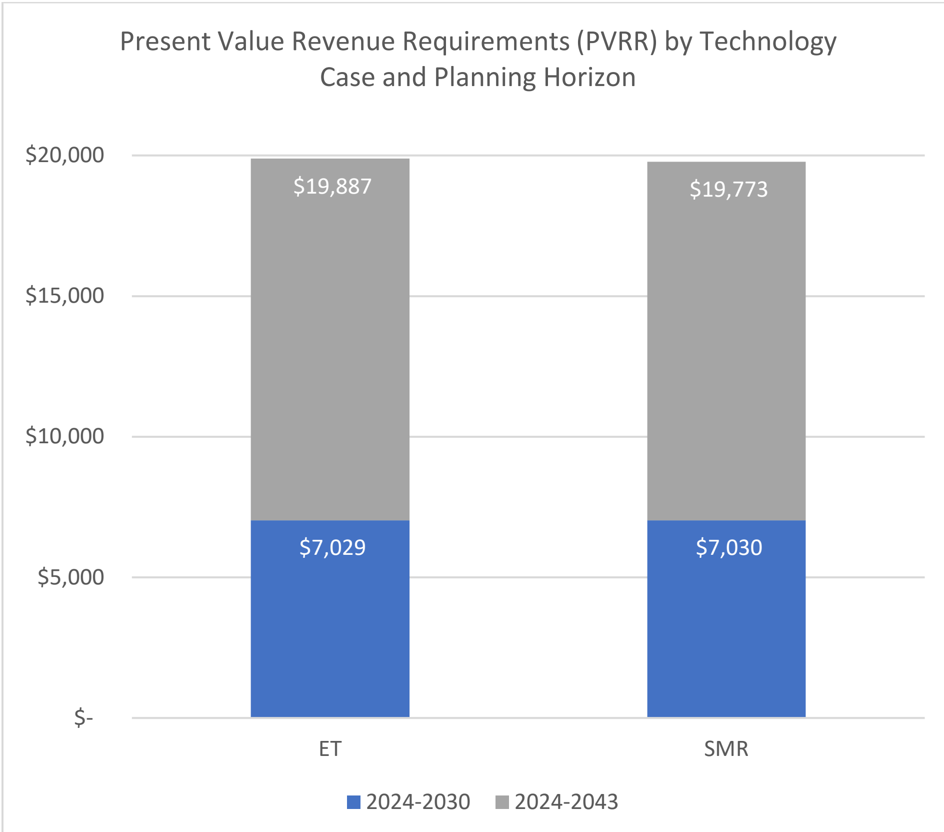
SMRs

As requested by a stakeholder, SPS evaluated installing SMRs as an alternative carbon-free, dispatchable resource. SPS relied upon the NREL data shown in Section 7 for the generic cost assumptions for new SMR resources. Initially, EnCompass did not economically select any SMRs in the most cost-effective portfolio of resources. Therefore, to evaluate the potential benefits of SMRs, SPS 'forced' in 300 MW of SMRs in 2037, 2039, and 2041. This follows the retirement of the Harrington units in 2036, 2038, and 2040. The addition of 900 MW of SMRs avoided 1,330 MW of BESS and 1,660 MW of new wind generation. As shown below in Figure 9F.25 there was no material cost difference between the ET case and the SMR case. However, the added available of carbon-free, dispatchable SMR resources may provide additional reliability benefits that are not captured in an economic analysis.

Table 9-52: Installed Capacity (2028 – 2043) SMR vs ET Cases

	Installed Capacity: 2028 – 2043 (MW)		
Technology	**ET**	**SMR**	**Delta**
Standalone Storage	10,390	9,060	1,330
Wind	9,840	8,180	1,660
Solar	2,769	2,769	-
Nuclear		900	(900)
Firm Peaking	-	-	-
CC	-	-	-
Total	**22,999**	**20,909**	**2,090**

Figure 9F.25: PVRR Comparison – SMR vs ET Cases



Section 10. ACTION PLAN

New Mexico Administrative Code § 17.7.3.11 requires SPS to present an Action Plan, which shall:

> (1) detail the specific actions the utility shall take to implement the IRP spanning a three-year period following the filing of the utility's IRP;
>
> (2) detail the specific actions the utility shall take to develop any resource solicitations or contracting activities to fulfill the statement of need as accepted by the commission; and
>
> (3) include a status report of the specific actions contained in the previous action plan.

In this Section, we provide a description of SPS's planned actions and a status report on the actions from its 2021 IRP.

(1) Actions to Implement the IRP Over the Next Three Years

The actions SPS will take to implement the 2023 IRP during the next three years (2024 through 2026) consist of the first stages to acquire resources needed to meet its needs between 2028 and 2030, a process which extends over many years, as shown in Appendix L. The timeline is illustrative only and specific dates may shift due to circumstances including timing of Commission actions. For example, SPS expects to issue the Request for Information ("RFI") during the Action Plan Period and before filing of its next IRP, but the actual issuance date may differ from that illustrated in the Appendix.

In particular, SPS plans to conduct a competitive solicitation to procure resources. This will follow the RFP process in § 17.7.3.12 NMAC, as discussed in more detail in subpart (2) of this section. SPS plans to issue an RFP within five months of the Commission's acceptance of its Statement of Need and Action Plan (consistent with § 17.7.3.12 NMAC), or about mid-2024. Responsive bids would be due within 90 days and evaluated over the following 120 days.

SPS plans to develop its own potential bids, which could include wind, solar, long-duration storage resources, or other resource types. Additionally, following discussions with Utility Division Staff of the Commission ("Staff"), SPS commits to evaluating the cost-effectiveness of extending the life of its gas-steam units as potential resources for comparison against received bids to evaluate the most cost-effective approaches to meet the projected capacity needs.

Following the completion of the RFP process, SPS will file applications for generation CCNs and PPA pre-approvals. The exact timing of CCNs or PPA pre-approvals to advance selected bids will depend on the bids selected, but SPS expects to file them in early to mid-2025. Note that some actions relating to these projects will fall outside the next three years.

SPS will evaluate incremental staffing, resource, and budget needs associated with potential generation unit life extensions as well as the overall delivery of the resource portfolio resulting from the RFP. For new SPS-owned generation, procurement of equipment and materials, acquisition of land rights, and construction may begin for some projects within the next three years; for other projects, the development process may fall outside the next three years. SPS will also need to assess steps to ensure a just and orderly transition, from assessing replacement generation opportunities to developing transition plans for our retiring generation units that can provide new opportunities for our employees and our affected communities.

SPS will also be advancing its efforts to build its renewable energy customer programs. The Commission approved SPS's Solar*Connect program in 2019. Solar*Connect, allows customers (primarily residential and small commercial customers) to purchase additional amounts of renewable energy for a premium above base rates. SPS filed for approval of its Renewable*Connect program in August 2023 in Case No. 23-00271-UT. Renewable*Connect is designed to provide eligible large commercial and industrial customers the option to acquire a portion of their energy needs specifically from identified clean energy resources, beyond and in addition to the clean energy resources serving customers on SPS's system today. The first phase of the program will utilize the non-jurisdictional generating capacity (~80 MW) of the Roswell-Chaves Solar Facilities. If SPS proposed to expand the program in the future based on customer interest, SPS would identify and acquire appropriate additional resources at that time.

Through the stakeholder process, SPS and stakeholders developed a list of mutually supported items to include in the Action Plan. In addition to the general steps described above, SPS and stakeholders agree that SPS will:

- Evaluate existing generation life extensions for SPS-owned units as discussed above;
- Evaluate Demand Response options, including the Interruptible Credit Option, and request regulatory approval where appropriate;
- Include an interruptible tariff request in upcoming Energy Efficiency Reconciliation filing;
- Evaluate Renewable*Connect expansion as discussed above;
- Conduct a TOU study according to the rate case stipulation in Case No. 22-00286-UT.

- Develop and issue an RFI[40] for long-lead time emerging dispatchable resources ahead of next IRP cycle; and
- Develop RFP bid evaluation documents that include appropriate reliability and resiliency assessments.

These items have been added to the representative timeline shown above, updated from SPS's initial Notice of Intent filing.

SPS was able to reach consensus with stakeholders on the items above and nearly all Action Plan and other items raised through the Facilitated Stakeholder Process. Some items, however, are either being addressed through other proceedings or are not adopted through this proposed Action Plan, as set forth below.

- *"Analysis/study of how to reduce O&G connected load through voluntary program(s) and/or Special Services contracts."* This item is addressed in part through potential Renewable*Connect expansion; however, SPS believes this issue requires more discussion in future forums and is not appropriate for the Action Plan here. Staff raised this issue in the stakeholder process and stated that discussing the issue in future forums is appropriate.
- *"Engage customers to help the utility serve all during grid constrained events, including new rate structures."* SPS believes this item can be addressed through other Commission proceedings.
- *"Determine value of demand response (based on modeled scenario) and initiate a stakeholder process to design an appropriate DR program."* SPS believes this item can be addressed through other Commission proceedings.
- *"Include fugitive methane emissions in the upcoming RFP analysis."* The New Mexico Renewable Energy Act ("Act") defines both "renewable energy resource" (which in turn generate "renewable energy" and the "renewable energy certificates" used to show RPS compliance) and "zero carbon resource." The RPS schedule increases the level of renewable energy as a percent of total sales, up to 80% by 2040, and provides that "zero carbon resources shall supply one hundred percent of all retail sales" by 2045. 62-16-4(A), NMSA; see also 17.9.572.10, NMAC. The Act therefore focuses on renewable energy penetration and the nature of

[40] Request for Information

resources used to serve load, and fugitive methane emissions are not part of the analysis from a statutory perspective.

- *"Compare EE procurements through the established three-year EE plan review process with assumptions in the IRP modeling effort."* SPS believes this item can be addressed through other Commission proceedings. In these proceedings, actual EE procurements can be compared against modeled assumptions and inform future IRP filings to ensure the use of the best available information.
- *"Include carbon emissions in RFP evaluation criteria."* The Act again focuses on renewable energy penetration and the nature of resources used to serve load in an effort to meet the objective of having all retail load served by zero carbon resources by 2045 (along with the renewable energy requirements). The IRP Rule, and specifically 17.7.3.12(I) NMAC, provides several price and non-price criteria for use in bid evaluation. The criteria include consistency with the terms of the Act and the Efficient Use of Energy Act, along with other public policies relates to resource preferences from the State of New Mexico and the federal government (17.7.3.12(I)(1) NMAC). Utilities must also consider "environmental impacts," which include impacts from resources that emit carbon dioxide or create longer term waste disposal issues (17.7.3.12(I)(5) NMAC). The objective of the Act and the IRP Rule, working together, is to plan for a system that maintains reliability and reduces emissions over time towards the 2045 goal. Neither the Act nor the IRP Rule, however, mandate the consideration of carbon emissions as a standalone criterion in the bid evaluation. The price and non-price criteria for bid evaluation can and should track the provisions of 17.7.3.12(I) NMAC.
- *"Conduct an independent analysis of lifecycle emissions relevant to NM electric utilities."* Neither state law nor the IRP Rule require the consideration of lifecycle greenhouse gas emissions; rather, the controlling requirements are related to direct emissions and renewable energy penetration. Accordingly, as a legal matter it is inappropriate and unnecessary to consider lifecycle greenhouse gas emissions as part of the RFP and attendant resource selection process.
- *"Incorporate the contributions from the SPS Grid Mod and EE/DR proceedings into the IRP."* SPS believes this item can be addressed through other Commission proceedings.

(2) Actions to Develop Resource Solicitations and Contracting to Fulfill the Statement of Need

SPS intends to develop an all-source RFP and Model PPAs for use in its next resource solicitation, and commence the solicitation within five months of the Commission's acceptance of its Statement of Need and Action Plan. The RFP will describe the range of capacity needs based on the most updated load forecast at that time for SPS and the categories of resources that will be used to fill those needs. The RFP will incorporate stakeholder feedback from the IRP process, including consideration of emerging technologies as part of an all-source solicitation.

The specific action steps in the RFP process are set out in detail at § 17.7.3.12 NMAC. SPS will provide the Commission, the Independent Monitor, and the parties to the IRP with the documents and contracts that constitute the RFP solicitation (RFP documents) and a timeline for soliciting, accepting, and evaluating bids. Commissioners, Staff, and intervenors may comment, and SPS will consider and may incorporate those comments. The Independent Monitor will file a design report, and comments will be submitted on that report. SPS will then issue the RFP, receive bids, and evaluate the bids. SPS will then provide the Independent Monitor with its evaluation, and the Independent Monitor will file a final report. SPS will then convey the results to the bidders and award the winning proposals.

(3) Status Report

SPS provides the following status report on the specific actions from the action plan of its 2021 IRP.

SPS's initial 2021 IRP action plan did not identify the need for any new generating resources.[41] However, SPS supplemented the action plan to incorporate changes due to the passage of the Inflation Reduction Act, an increase in the Southwest Power Pool Planning Reserve Margin from 12 percent to 15 percent beginning in 2023, changes in Southwest Power Pool's approach to implementation of the ELCC methodology for renewable accreditation, and increased load growth on SPS's system particularly in southeast New Mexico.[42]

Following the discussion in its November 17, 2022, Supplemental Filing, SPS issued an RFP for an all-source, competitive solicitation with an independent monitor on November 28, 2022. Bids were submitted in February of 2023. SPS considered 49 proposals comprising 15 distinct projects. Winning bids were announced in June 2023.

On July 26, 2023, SPS submitted an application for a CCN for the Plant X Solar, Cunningham 1 Solar, and Cunningham 2 Solar projects and for the Cunningham SPS Battery Project selected as part of the 2022 RFP Recommended Portfolio.

SPS also indicated its intent to file an application for pre-approval of two dispatchable PPAs from the 2022 RFP Recommended Portfolio; work on that filing is ongoing.

[41] See SPS 2021 Integrated Resource Plan at 93-94, in Case No. 21-00169-UT (July 16, 2021).
[42] SPS Supplemental Filing in Case No. 21-00169-UT (Nov. 17, 2022).

Section 11. FACILITATED STAKEHOLDER PROCESS

This section describes the facilitated stakeholder process which SPS engaged in over the six months leading up to the filing of this IRP. It describes the various stakeholder meetings that took place and presents the materials used in those meetings in Appendix M.

As required by 17.7.3.9(A) NMAC, SPS notified the Commission, members of the public, the New Mexico Attorney General, and all parties to its most recent base rate case and most recent IRP case of its intent to file an IRP by filing a Notice of Intent ("NOI") on March 1, 2023. This NOI was preceded by a February 24, 2023, letter to Commissioners notifying them as to why SPS wished to file its IRP in 2023 rather than 2024 as contemplated in 17.7.3.8(C) NMAC.

The governing rule (17.7.3.9(A) NMAC) states that the commission, upon notification, shall initiate a facilitated process for the utility, commission utility division staff, and stakeholders to reach a potential agreement on a proposed statement of need pursuant to 17.7.3.10 NMAC and an action plan pursuant to 17.7.3.11 NMAC.[43]

The Commission appointed Gridworks as the facilitator and, in a March 22, 2023 Order, indicated that SPS's six month notice of intent should begin on April 15, 2023, and SPS should file its IRP on October 15, 2023. During the Facilitated Stakeholder Process, Gridworks and SPS held 8 stakeholder meetings—including in-person meetings in Roswell and Hobbs, NM—plus several interim meetings

[43] The Commission, aside from utility division staff and the appointed facilitator, does not participate in the facilitated stakeholder process pursuant to 17.7.3.9(A) NMAC.

between May and October of 2023. Stakeholders provided input to the modeling efforts, the Statement of Need, and the Action Plan. Gridworks' summary of the participation of Stakeholders is included in Appendix M. Seventy-eight organizations were represented in the meetings, including state and county officials from New Mexico and Texas; community officials from SPS's service territory, New Mexico state legislators; private industry; nonprofit groups; federal agencies; and research organizations. Appendix M contains the meeting materials, meeting summaries, links to video/audio recordings and "chat" logs for each meeting. High level summaries of the meetings are below. Additionally, several meetings were held with smaller working groups. A modeling working group and a Statement of Need working group were created during the June 13-14 Stakeholder meetings. These two groups met several times in between the larger Facilitated Stakeholder Process meetings and presented their collective work to the larger group of stakeholders for feedback and input.

May 16, 2023, via Zoom – Stakeholder Orientation; approximately 90 stakeholder representatives from 60 organizations attended.

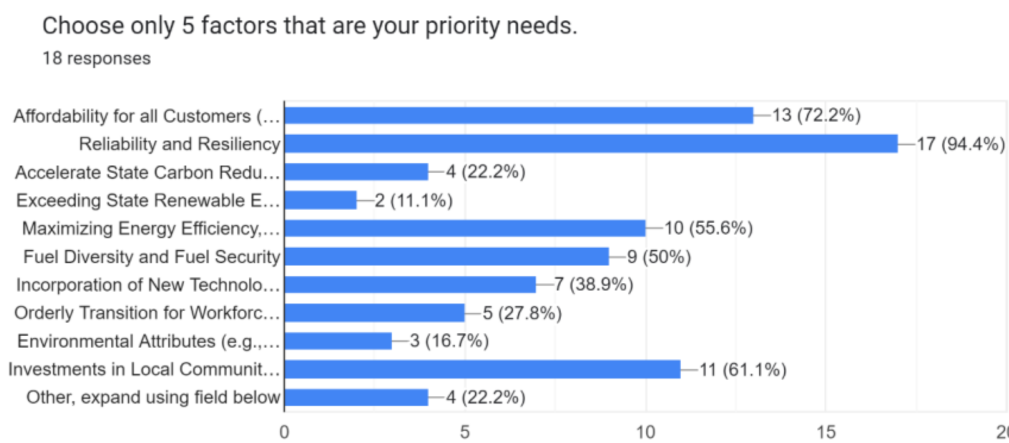
June 1, 2023, via Zoom – Stakeholder Orientation, Introduction to Statement of Need and Electric System Requirements; approximately 41 representatives 28 organizations attended.

June 13-14, 2023, in person, Roswell, NM – Two-day workshop developing input to SPS's IRP Statement of Need and Action Plan; Creation of Statement of Need Subgroup and Modeling Subgroup. Approximately 41 stakeholder representatives attended from 27 organizations.

July 6, 2023, via Zoom – Developing Input to Statement of Need and Action Plan; approximately 30 stakeholder representatives attended from 19 organizations.

August 1-2, 2023, via Zoom, with SPS offering in-person participation in Hobbs, NM – Two-day workshop focused on preliminary modeling results, modeling inputs and assumptions, and stakeholder requested modeling runs, measure of consensus regarding priority needs; approximately 44 stakeholder representatives attended from 28 different organizations.

During the August 1-2 meeting, Gridworks deployed a survey for stakeholders to submit their priority needs. Results are below:



"Other" factors offered by respondents were:

- Ability to grow load-following supply as demand increases due to electrification projects
- Capacity and Resiliency: Ability to handle EVs, Heat Pump HVAC/H2O etc AND Distribution Level Resiliency with no single points of failure or dependence on the National Grid
- It may be interesting to see how this group responds to these priority needs, but the PRC Staff looks at the requirements of the IRP App A.
- Support the development of the world and human growth with accessible energy through fossil fuel availability and cleaner energy than what is being used in developing nations.

August 29, 2023, via Zoom - SPS presented modeling results as well as results of stakeholder-requested sensitivities. The meeting was also to prepare stakeholders as they provide suggestions regarding the Action Plan. Approximately 35 stakeholders' representatives from 25 different organizations attended.

September 13, 2023, via Zoom – Focus of the meeting was input to SPS's Statement of Need and Action Plan. Approximately 20 stakeholders representing 17 different organizations attended.

October 3, 2023, via Zoom – Focus the meeting was consensus and status of SPS's Statement of Need and Action Plan. Approximately 21 stakeholders representing 13 different organizations attended. Stakeholders and SPS reviewed the Statement of Need and Action Plan items, including Action Plan items where consensus had not been achieved. These items were discussed, and no stakeholders objected to or commented on the presented Action Plan or the items where there was a lack of consensus by the facilitator's deadline of October 6, 2023.

Copies of presentations, pre-read materials, meeting summaries, and any other documents pertaining to these Stakeholder Meetings is provided in Appendix M.

Appendix A

SPS 2022 Purchased Power Costs

Southwestern Public Service Company 2022 Purchased Power Costs (Dollars)

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Grand Total
Capacity Costs													
Borger (Blackhawk)	996,845	996,845	996,845	996,845	996,845	1,074,051	1,053,109	1,063,430	1,059,079	1,064,289	1,055,773	1,055,775	12,409,732
Lea Power Partners (Hobbs)	4,429,054	4,430,048	4,430,514	4,367,929	4,366,734	4,357,607	4,380,243	4,380,679	4,380,004	4,380,004	4,379,989	4,379,312	52,662,118
Tokai Carbon CB (Sid Rich)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capacity Costs	**5,425,900**	**5,426,894**	**5,427,359**	**5,364,774**	**5,363,579**	**5,431,658**	**5,433,352**	**5,444,108**	**5,439,084**	**5,444,293**	**5,435,762**	**5,435,088**	**65,071,850**
	Jan-22	**Feb-22**	**Mar-22**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Oct-22**	**Nov-22**	**Dec-22**	**Grand Total**
Non-Renewable Energy Costs													
Short Term Economy Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-
Blackhawk	4,983,598	5,710,009	3,919,225	4,205,894	6,170,058	6,840,687	7,596,786	5,521,769	7,000,731	4,652,228	3,730,046	6,450,586	66,781,617
Orion Engineered Carbons	45,823	28,388	36,546	52,968	63,600	77,255	91,387	-	-	-	0	0	395,966
Tokai Carbon CB (Sid Rich)	21	10,903	25,412	61,614	33,101	14,401	17,765	57,446	19,966	6,504	7,149	413	254,697
Long Term Purchases													
Lea Power Partners - LT Tolling	12,400,712	9,936,705	8,746,657	2,069,970	15,378,260	17,866,218	15,883,254	20,472,208	16,030,506	8,998,271	9,621,354	9,090,653	146,494,769
Lea Power Partners - VO&M	1,032,314	869,175	833,044	315,920	773,754	1,043,878	1,226,556	1,227,068	1,234,917	1,155,003	991,320	1,042,654	11,745,602
Renewable Energy Costs													
Caprock Wind	988,317	882,398	1,007,082	1,170,909	1,134,380	959,949	680,177	600,210	907,004	787,266	1,035,579	1,192,046	11,345,316
Chaves Solar	497,641	556,557	693,167	813,519	864,124	736,084	826,224	607,719	659,168	421,721	405,970	392,007	7,473,901
Lorenzo Wind	676,852	658,595	764,200	875,249	841,842	674,045	492,631	343,020	466,468	545,886	722,462	662,721	7,723,970
Mammoth Wind	1,791,844	1,733,088	1,936,078	2,027,810	1,787,734	1,354,686	1,275,286	1,062,583	1,266,881	1,024,248	1,682,173	1,464,690	18,407,102
Mesalands	357	422	(316)	3,742	8,786	3,397	526	5	4,503	1,473	2,620	(23)	25,492
Palo Duro Wind	2,174,867	2,145,074	2,563,453	3,064,387	3,020,541	2,392,953	1,848,796	1,485,385	2,211,580	980,125	2,062,732	2,495,841	26,445,733
Roosevelt Wind	2,209,562	2,142,073	2,203,910	2,362,608	2,592,229	1,934,542	1,482,518	1,099,764	1,759,883	1,711,690	2,357,759	2,281,517	24,138,054
Roswell Solar	474,030	478,203	730,511	790,870	835,615	704,460	807,322	601,317	656,773	429,703	393,752	373,818	7,276,375
San Juan Mesa Wind	1,065,951	1,173,258	1,513,300	1,460,589	1,710,758	1,261,150	773,285	604,512	885,496	660,539	1,386,217	1,749,049	14,244,104
Spinning Spur Wind	2,306,326	2,079,644	2,453,773	2,636,230	3,413,713	2,465,429	1,802,655	1,417,744	2,564,090	1,775,845	2,486,639	3,052,136	28,454,224
Sun Edison Solar All	964,957	1,084,382	1,449,971	1,650,128	1,724,229	1,616,298	1,641,435	1,305,151	1,241,190	1,196,516	900,299	808,448	15,583,004
Texico Wind	0	55	(366)	2	-	-	0	1	(0)	-	-	-	(308)
Wildorado Wind	2,264,056	2,122,246	2,398,205	141,351	804,867	2,397,217	1,677,106	1,449,471	2,201,023	1,863,067	2,452,901	2,466,278	22,237,788
Wildcat Ranch Wind	1,227,681	1,165,915	1,306,133	1,461,944	1,364,551	1,184,522	888,646	640,539	920,704	973,673	1,248,764	1,164,611	13,547,683
QF PURPA Wind All	63,992	50,995	66,899	140,265	234,148	172,374	303,994	186,922	186,742	117,498	139,784	115,583	1,779,195
Total Purchased Power Costs	**35,168,900**	**32,828,084**	**32,646,884**	**25,305,969**	**42,756,291**	**43,699,543**	**39,316,350**	**38,682,834**	**40,217,624**	**27,301,257**	**31,627,521**	**34,803,028**	**424,354,285**

Appendix B

2022 Sub-Regional Transmission Planning Presentations

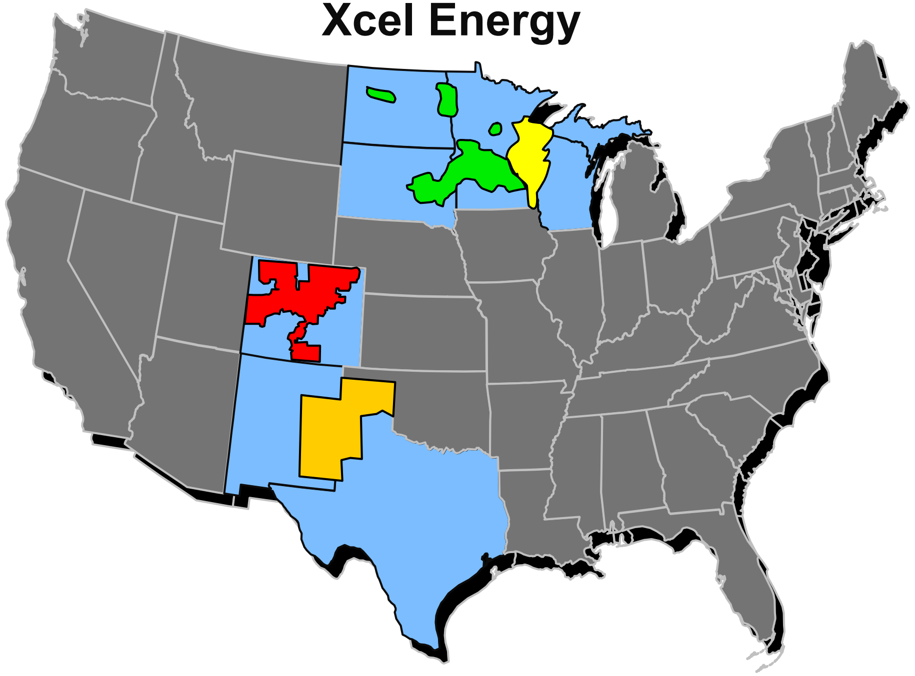
XCEL ENERGY-TEXAS AND NEW MEXICO SUB-REGIONAL TRANSMISSION PLANNING MEETING

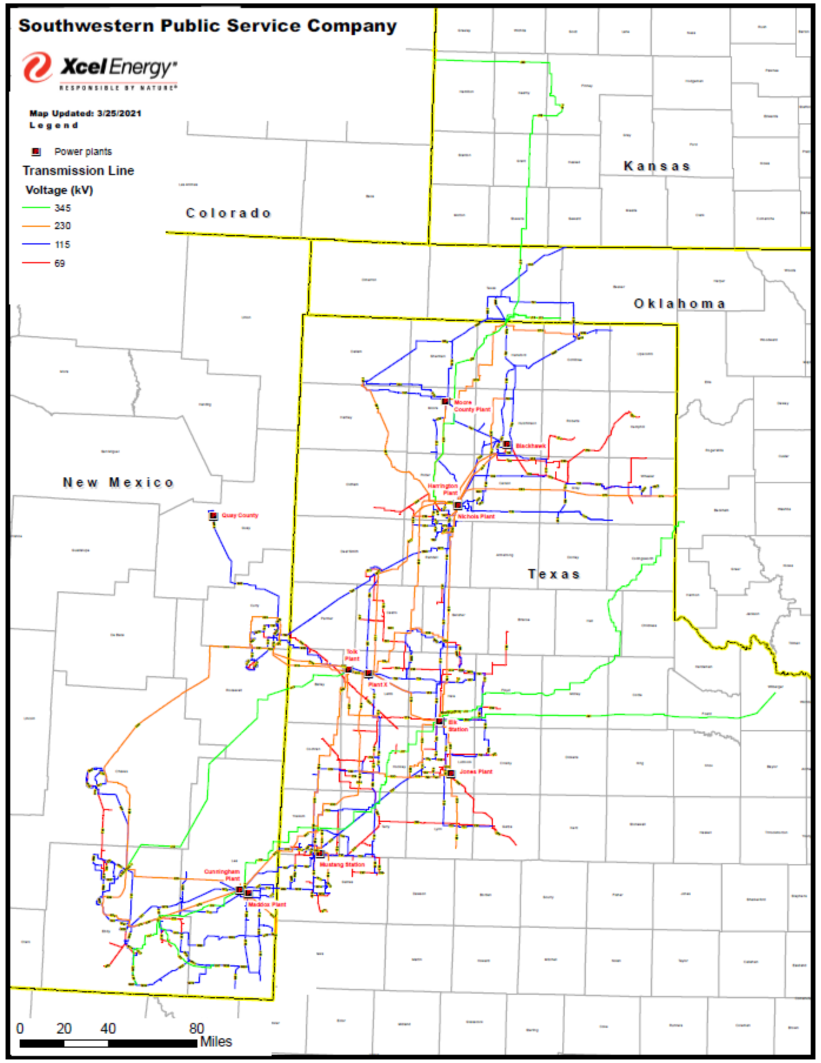
Reene Miranda– Manager, Transmission Planning

October 12, 2022

System Maps

Xcel Energy





Disclaimer

- All in-service dates (ISDs) of Active or Future projects are proposed and subject to change
- All projects have the possibility of changing based on new / evolving information
- These are projects from a Planning perspective as required from a reliability, load or generation interconnection, asset renewal, etc.
- Presentation is for informational purposes

TRANSMISSION SYSTEM ADDITIONS

Sept 2021 – Sept 2022

Tierra Blanca Substation

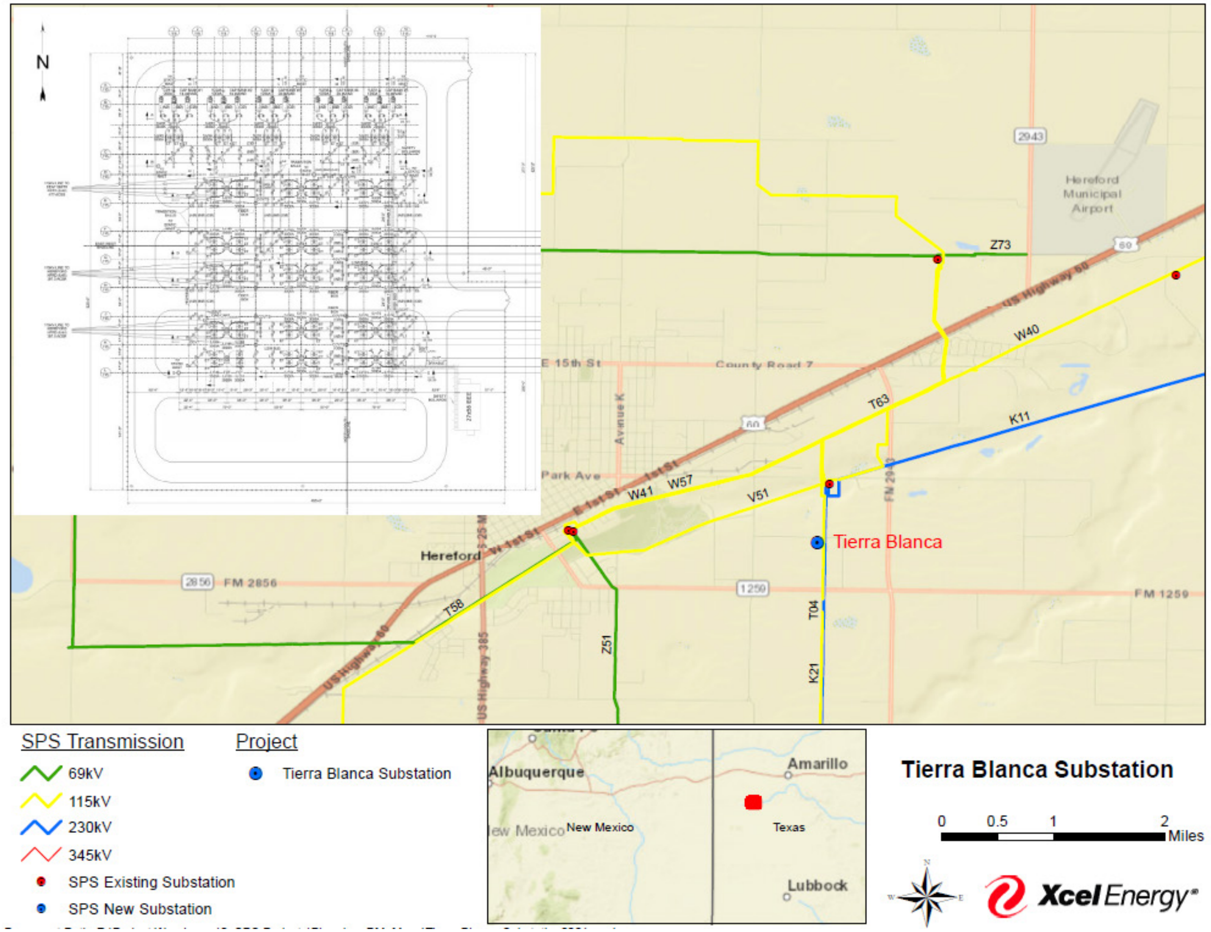
Voltage: 115 kV

ISD: November 2021

NTC: No

Description: Build a new breaker and a half substation and re-terminate five 115 kV lines from SPS Deaf Smith substation (existing straight bus)

Need: Reliability



Bushland-Deaf Smith

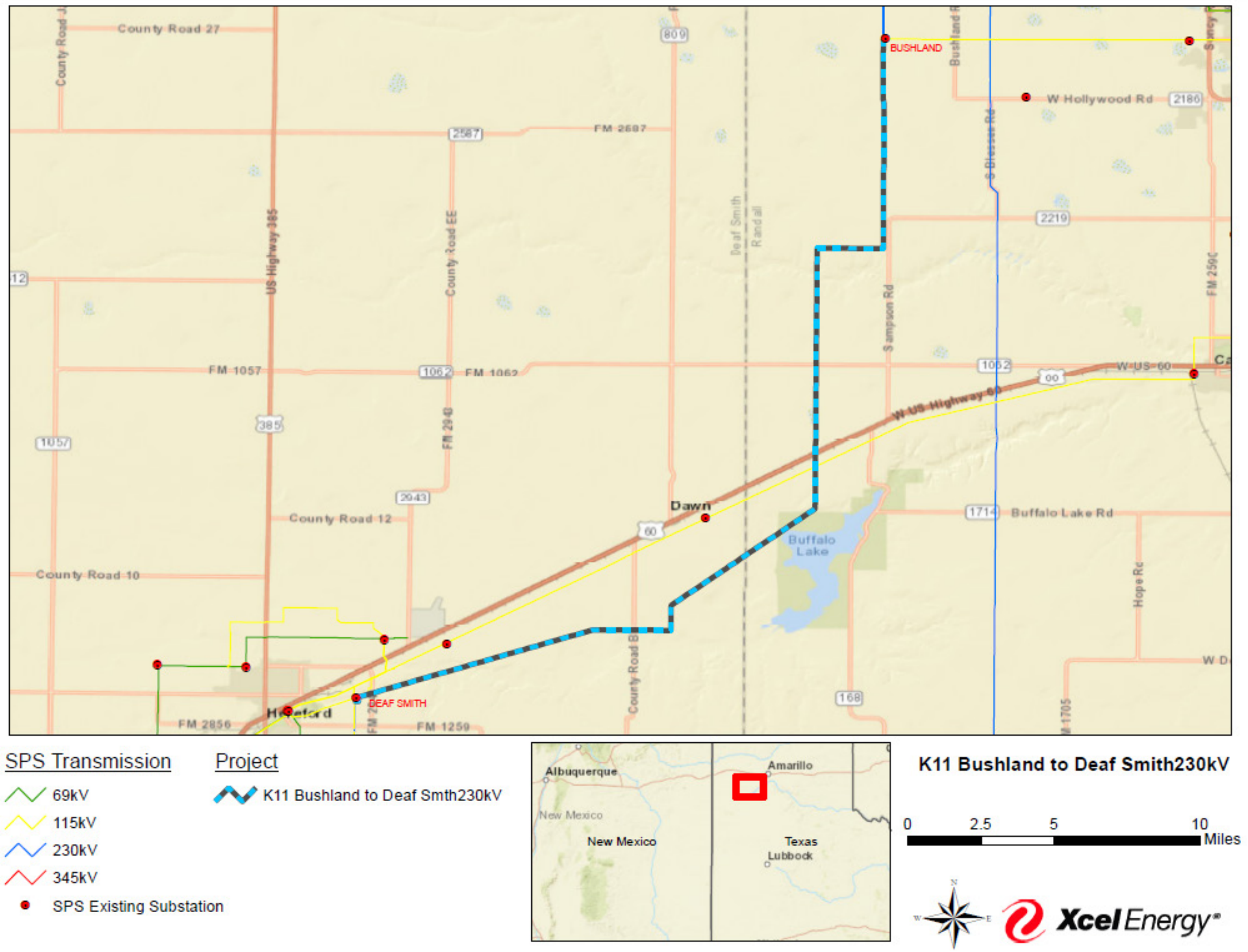
Voltage: 230 kV

ISD: March 2022

NTC: Yes

Description: Terminal Upgrades, K11

Need: Reliability



Tolk 230 kV Substation (Conversion)

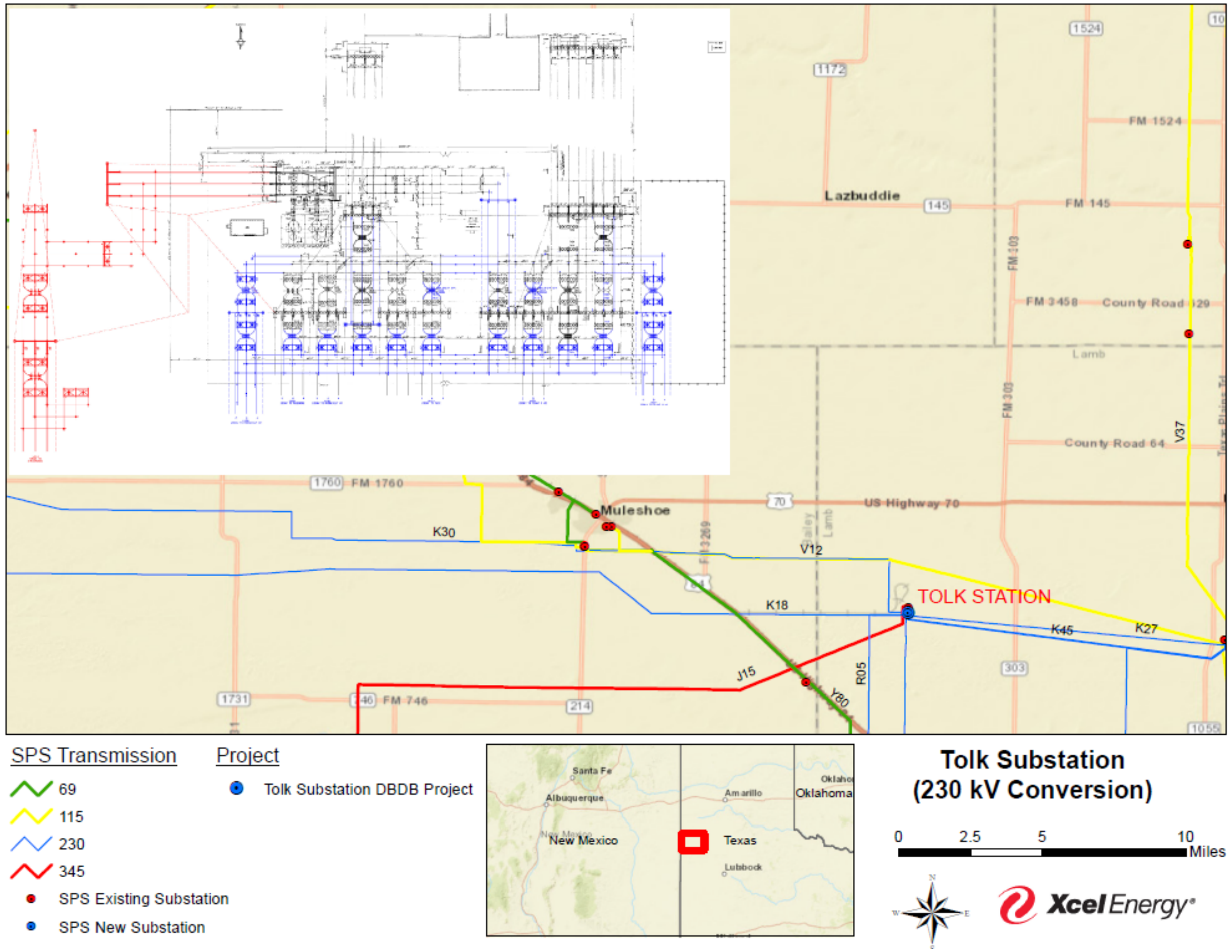
Voltage: 230 kV

ISD: June 2022

NTC: No

Description: Convert the existing 230 kV straight bus at Tolk, to a Double-Bus, Double-Breaker configuration

Need: Reliability



Lubbock South – Wolfforth

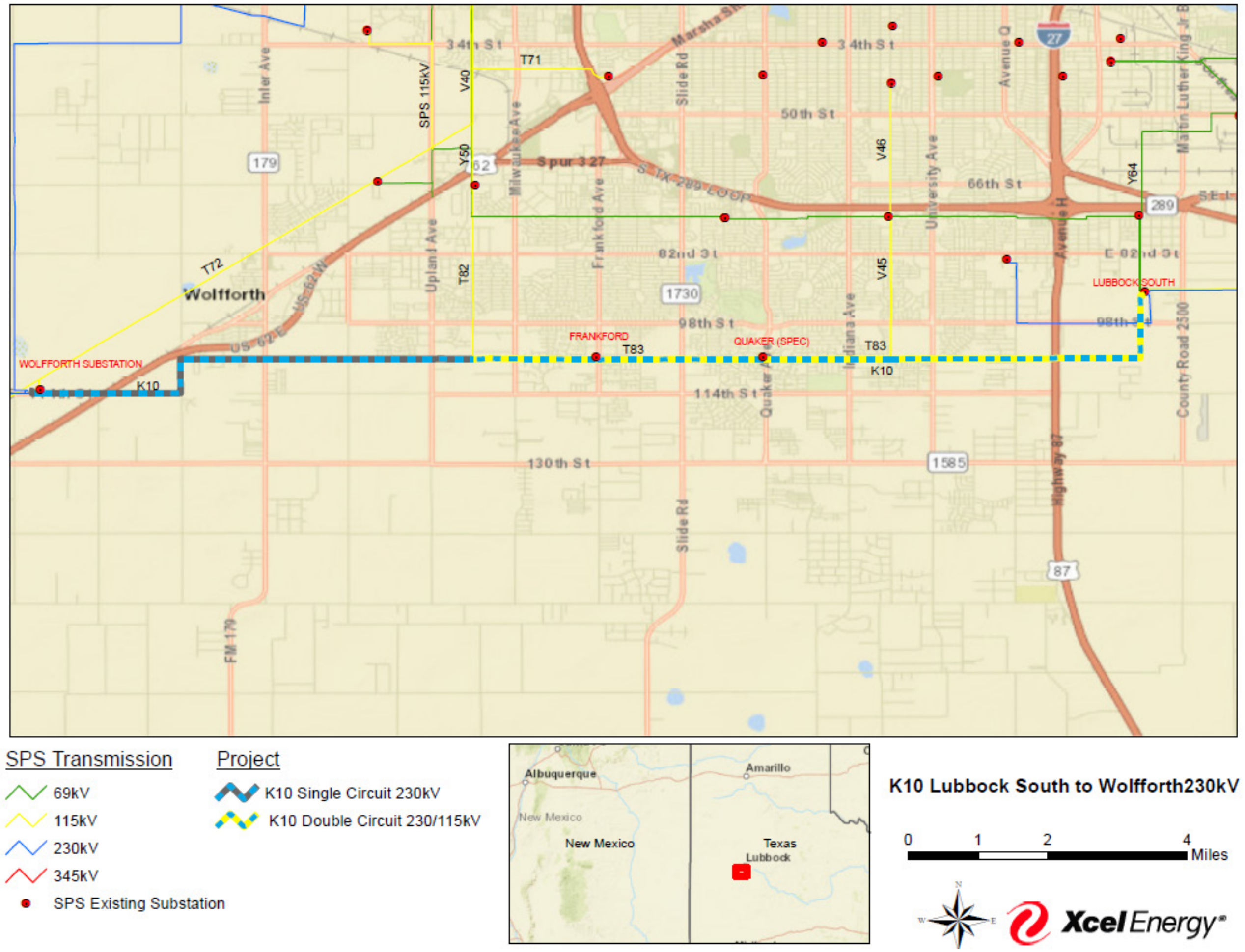
Voltage: 230 kV

ISD: May 2022

NTC: Yes

Description: Terminal Upgrades, K10

Need: Reliability



China Draw-Phantom-Roadrunner

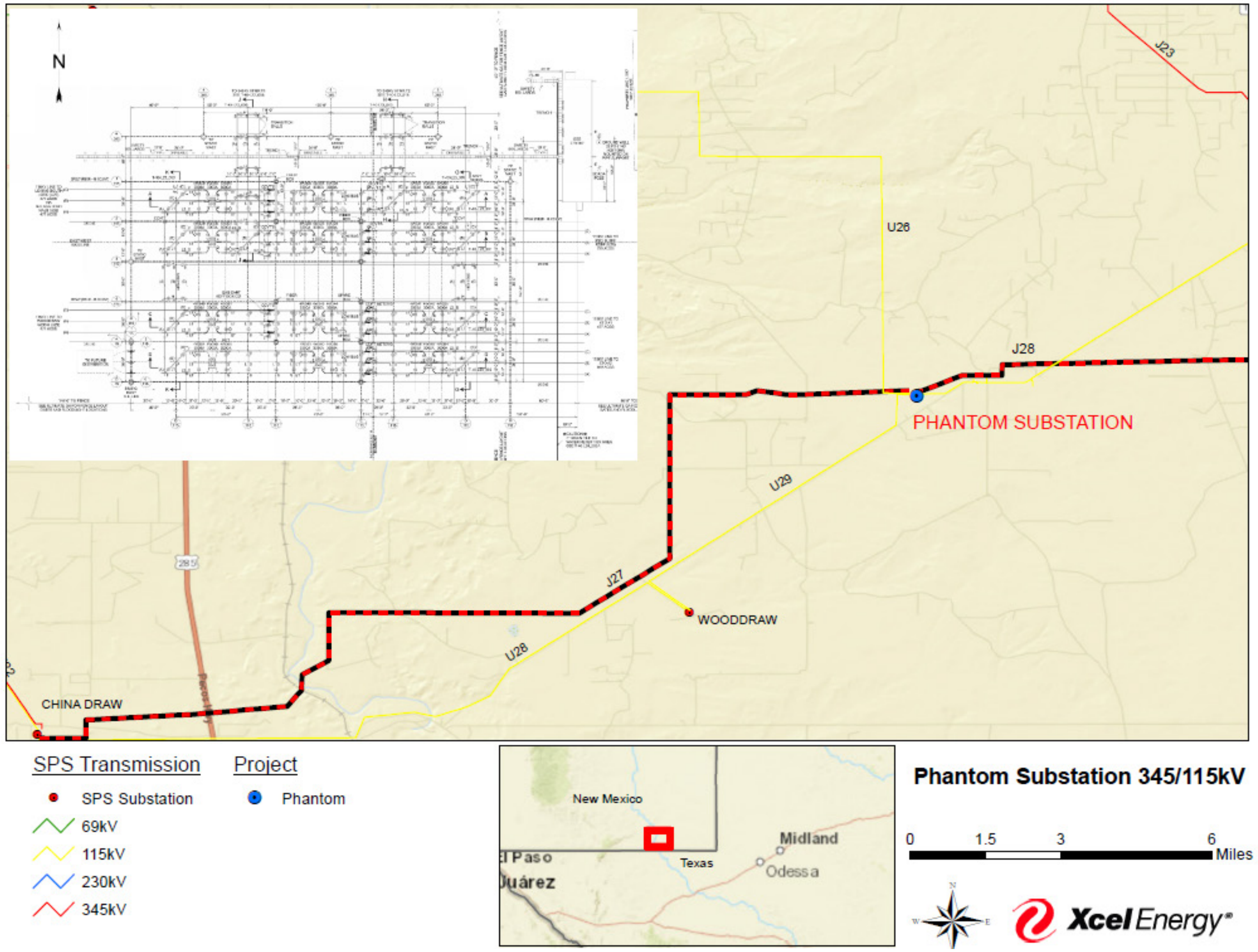
Voltage: 345 kV

ISD: December 2021

NTC: Yes

Description: Build a new 345 kV line, expand China Draw and Roadrunner substations, and build a new Phantom 345/115 kV substation with two transformers

Need: Reliability, Load Growth



Kiowa

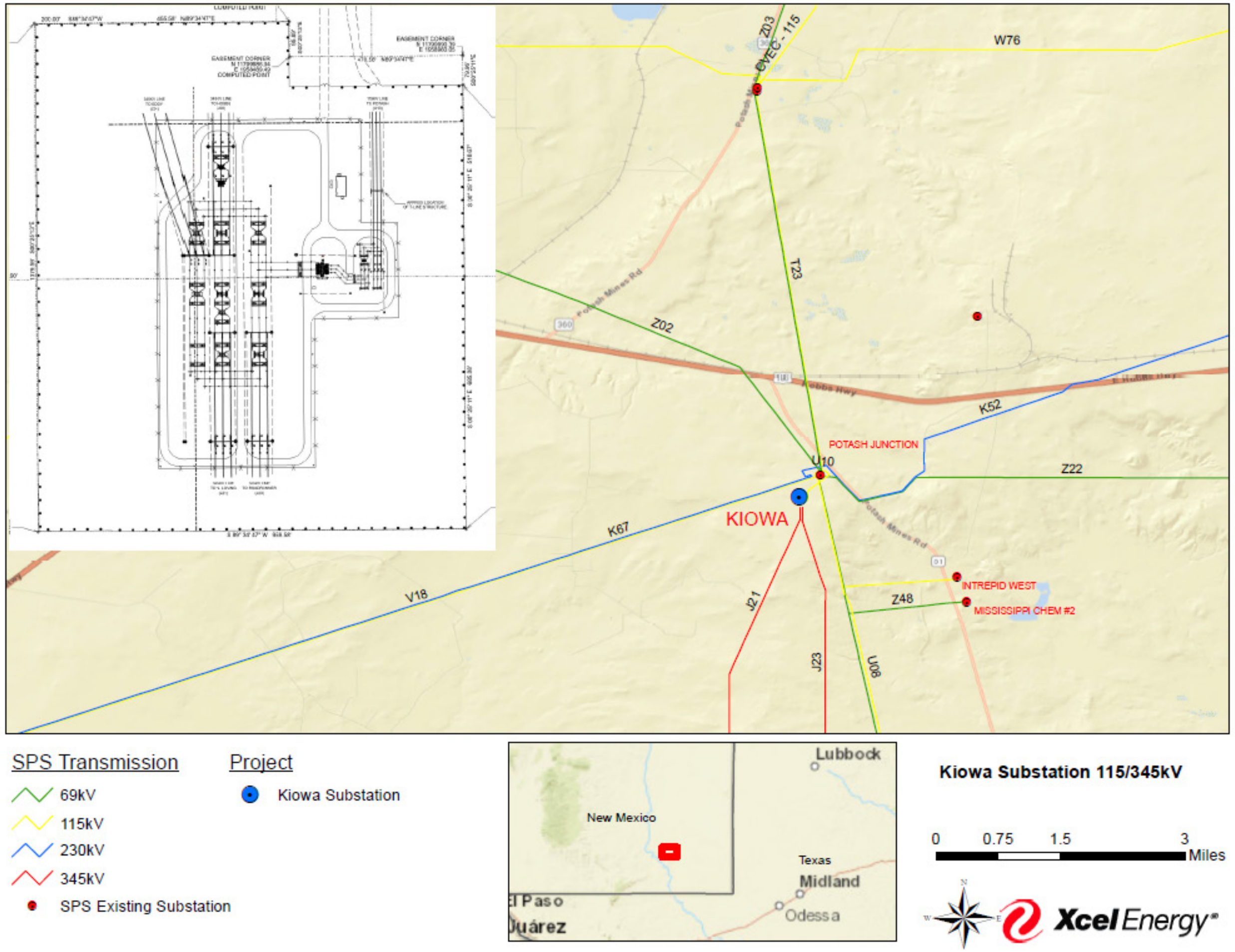
Voltage: 345 kV

ISD: December 2021

NTC: No

Description: New Breaker Addition

Need: Reliability



Four Way Substation

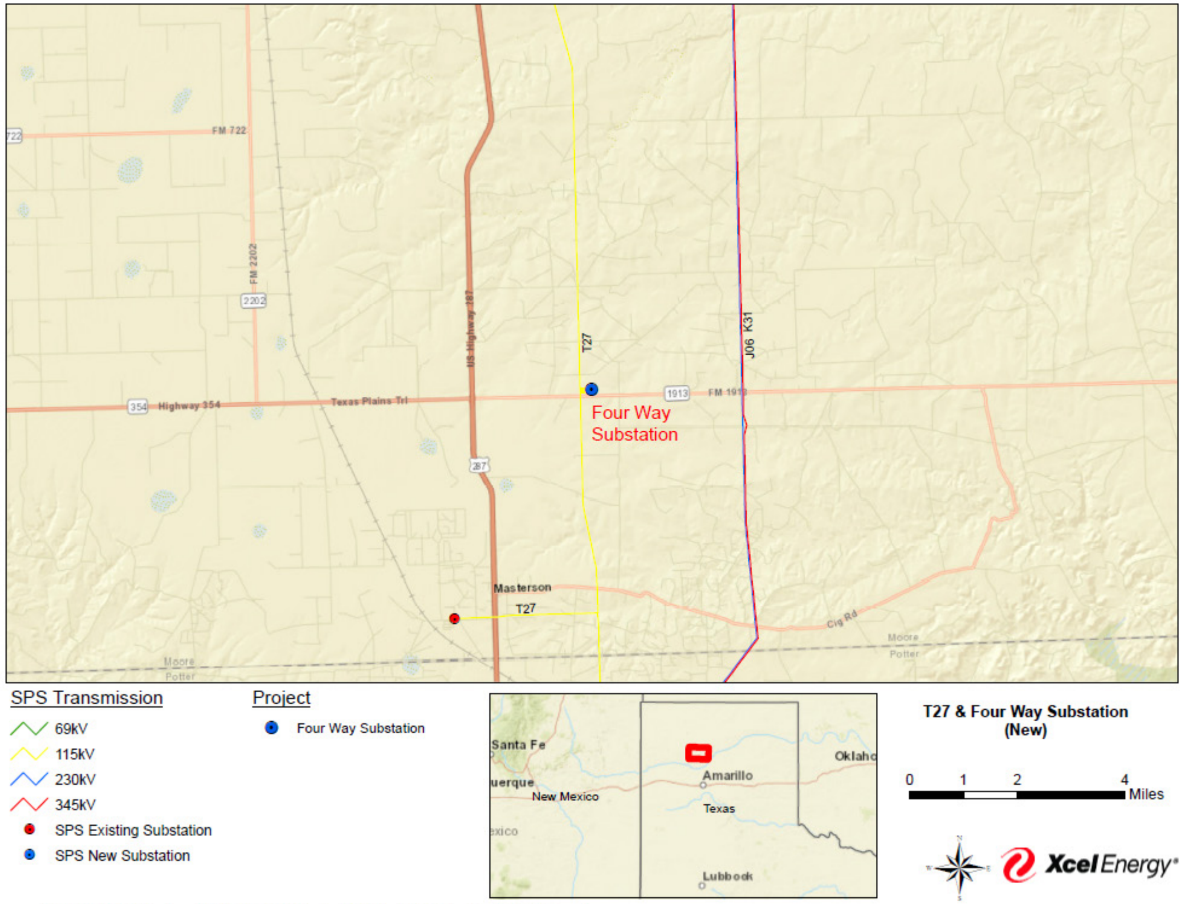
Voltage: 115 kV

ISD: February 2022

NTC: No

Description: New SPS Distribution substation, south of Dumas, TX

Need: Distribution driven



Center Port Distribution Substation

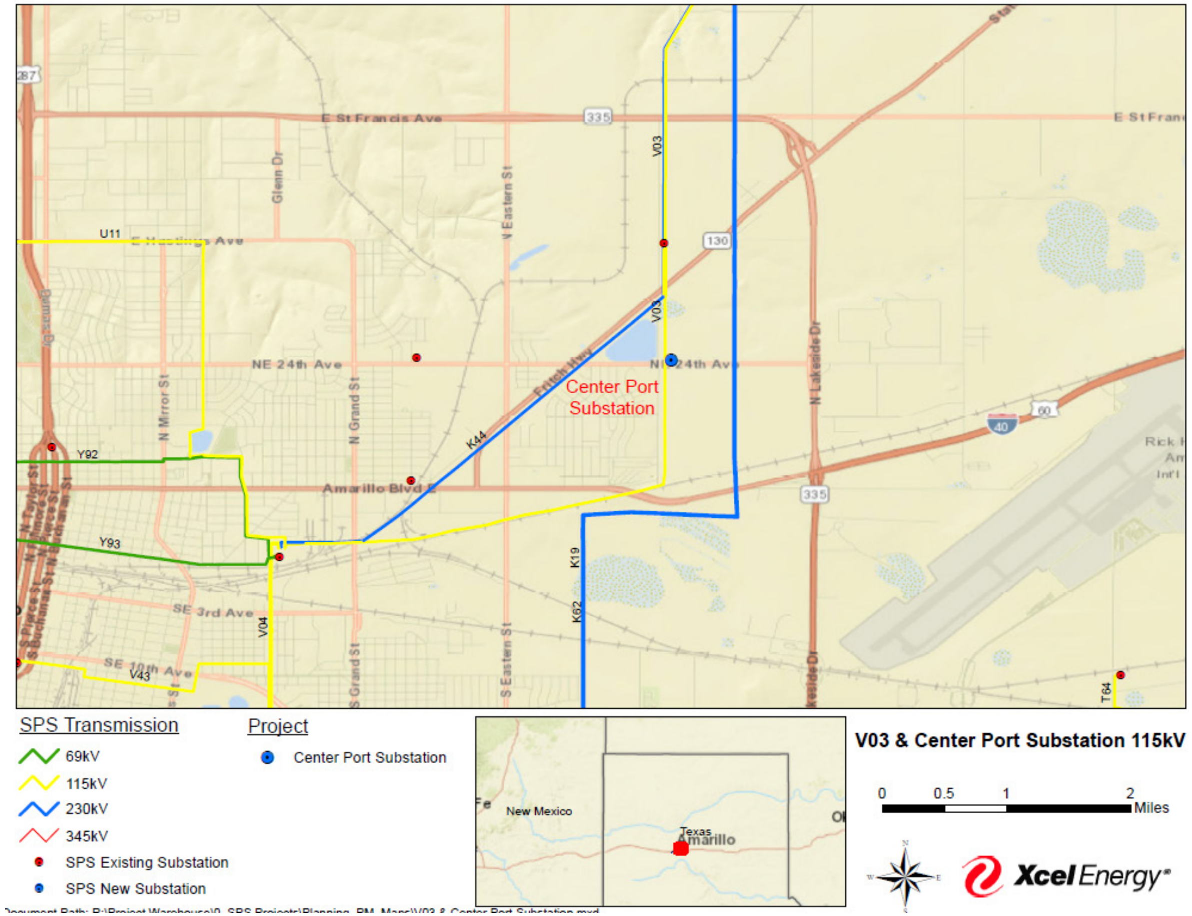
Voltage: 115 kV

ISD: April 2022

NTC: No

Description: New SPS Distribution substation, Amarillo, TX

Need: Distribution driven



Callahan Distribution Substation

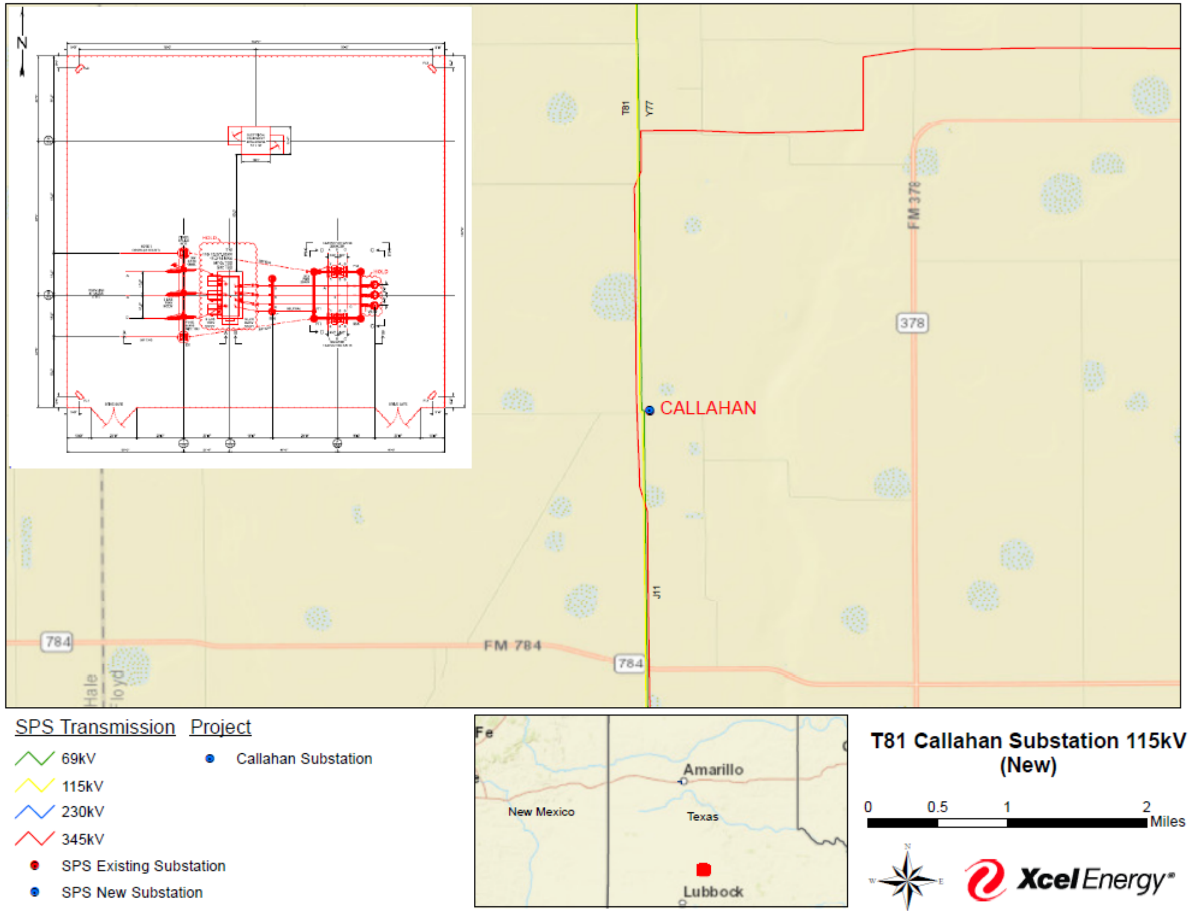
Voltage: 115 kV

ISD: June 2022

NTC: No

Description: New SPS Distribution substation, north of Floydada, TX

Need: Distribution driven



Caveman Distribution Substation

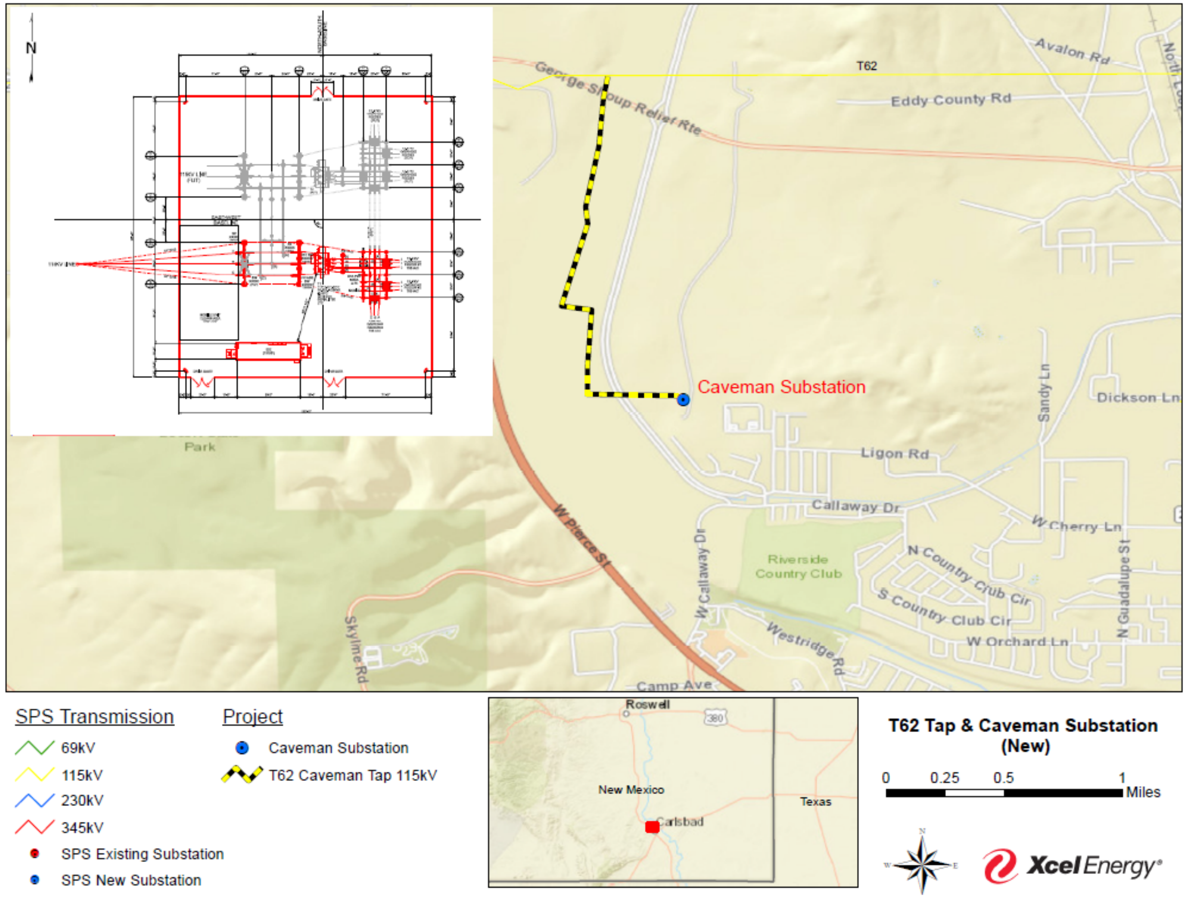
Voltage: 115 kV

ISD: June 2022

NTC: No

Description: New SPS distribution substation, in Carlsbad, NM

Need: Distribution driven



TRANSMISSION SYSTEM ADDITIONS

Active and Future

Twist Switching Station (New)

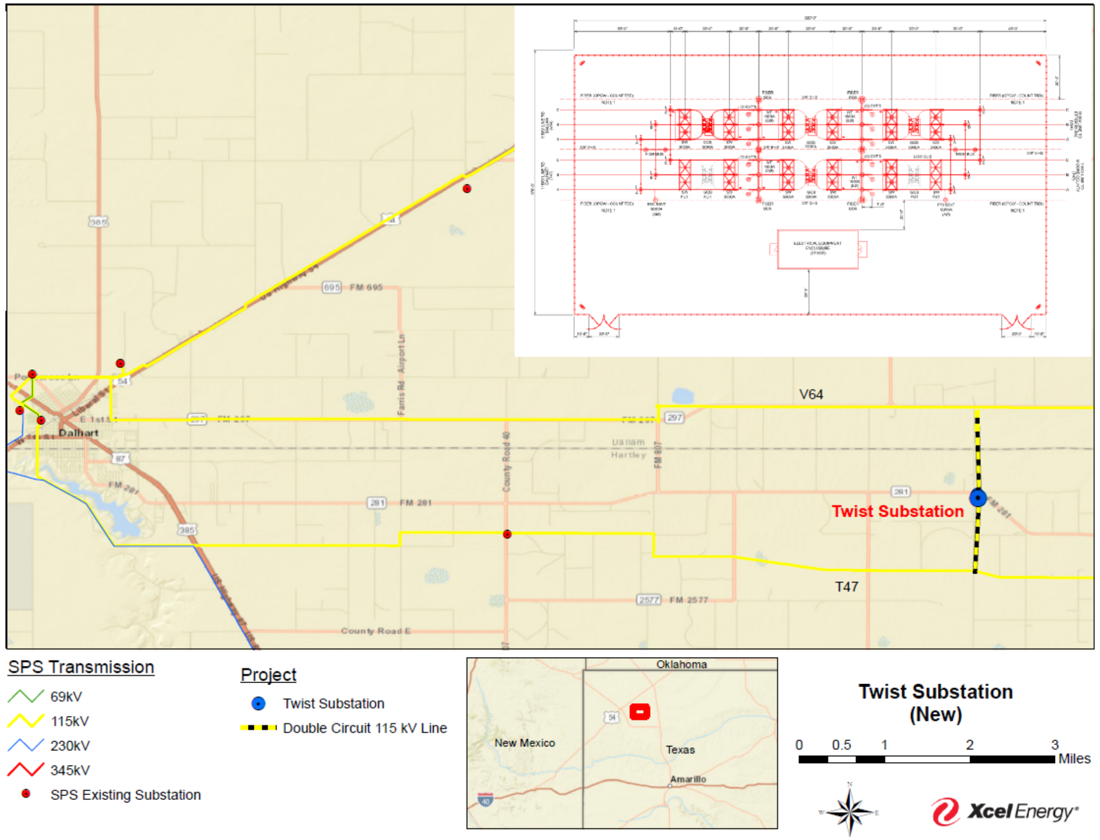
Voltage: 115 kV

ISD: December 2024

NTC: Yes*

Description: New 115kV Switching Station Connecting V64 & T47

Need: Load Growth/Reliability



McDowell Creek Substation (New)

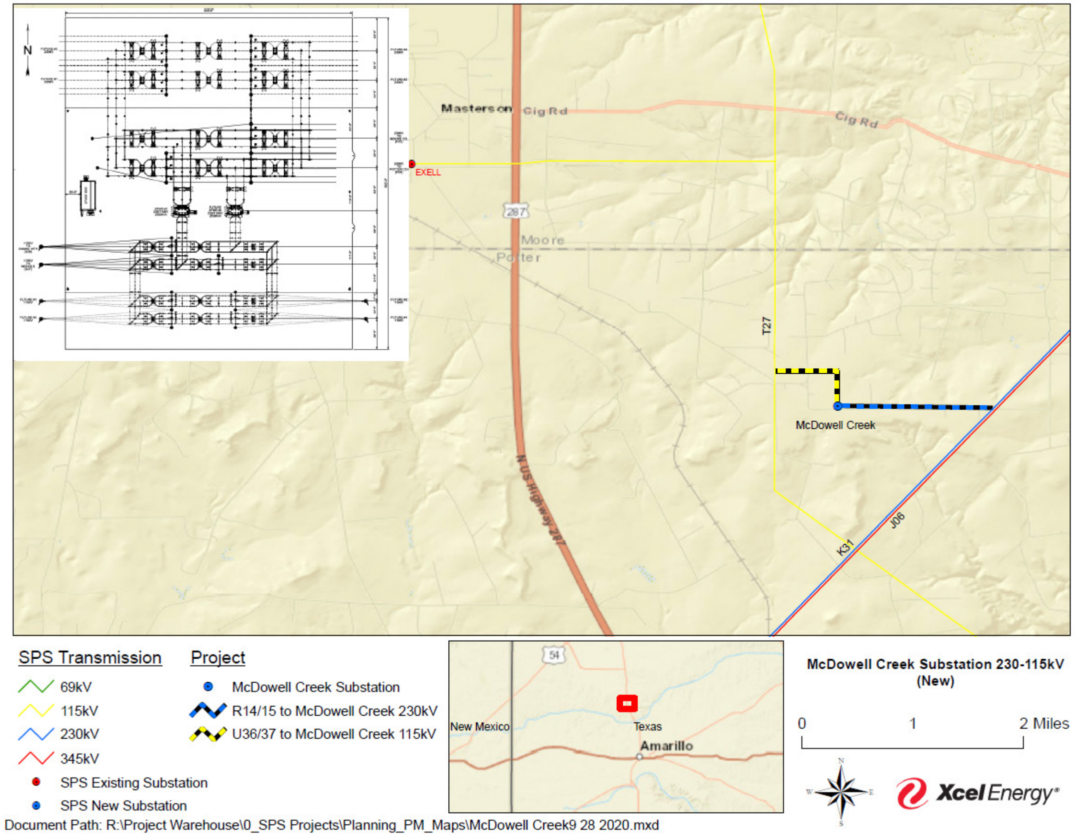
Voltage: 230 kV and 115 kV

ISD: November 2024

NTC: Yes

Description: Tap Moore Co – Potter Co 230 kV line and install a 230/115 kV transformer connecting to the 115 kV line from Nichols to Dumas 19th

Need: Reliability



Eagle Creek 2nd TR (Expansion)

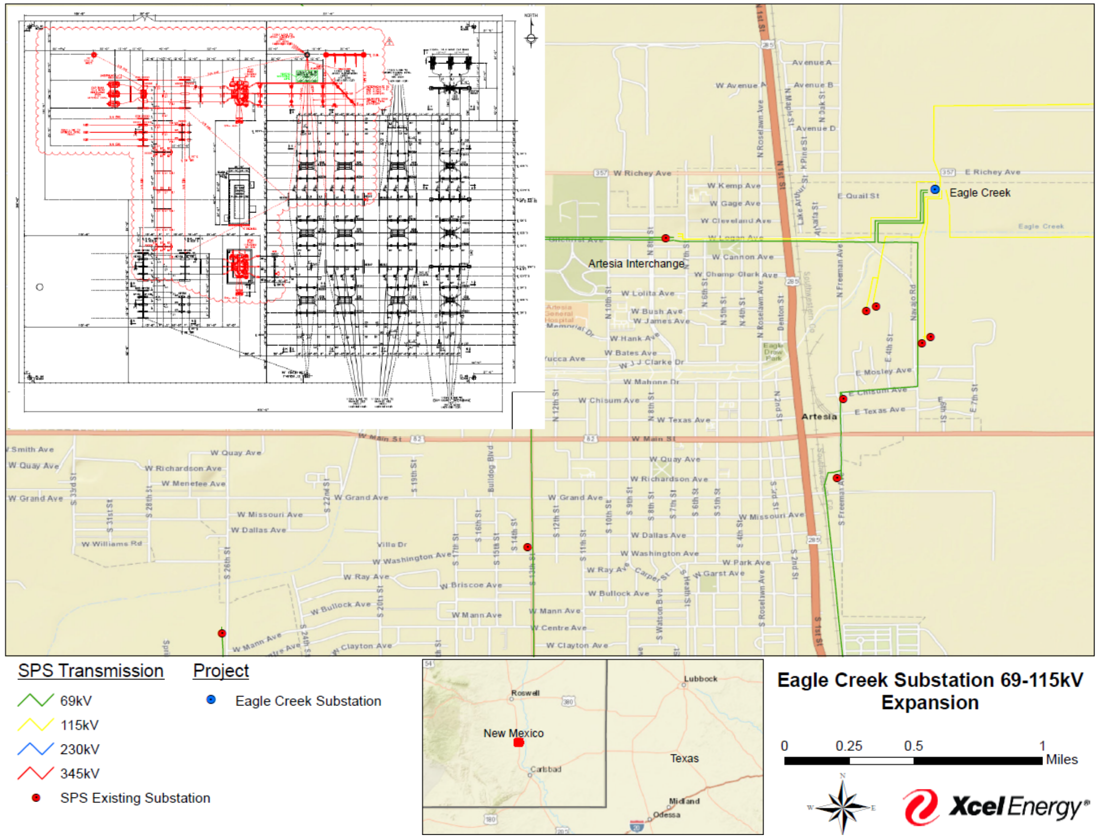
Voltage: 115 kV and 69 kV

ISD: June 2023

NTC: No

Description: Expand the existing Eagle Creek substation with a 2nd 115/69 kV TR. Wreck out Artesia Interchange substation

Need: Asset Renewal/ Reliability



Lawrence Park Substation (New)

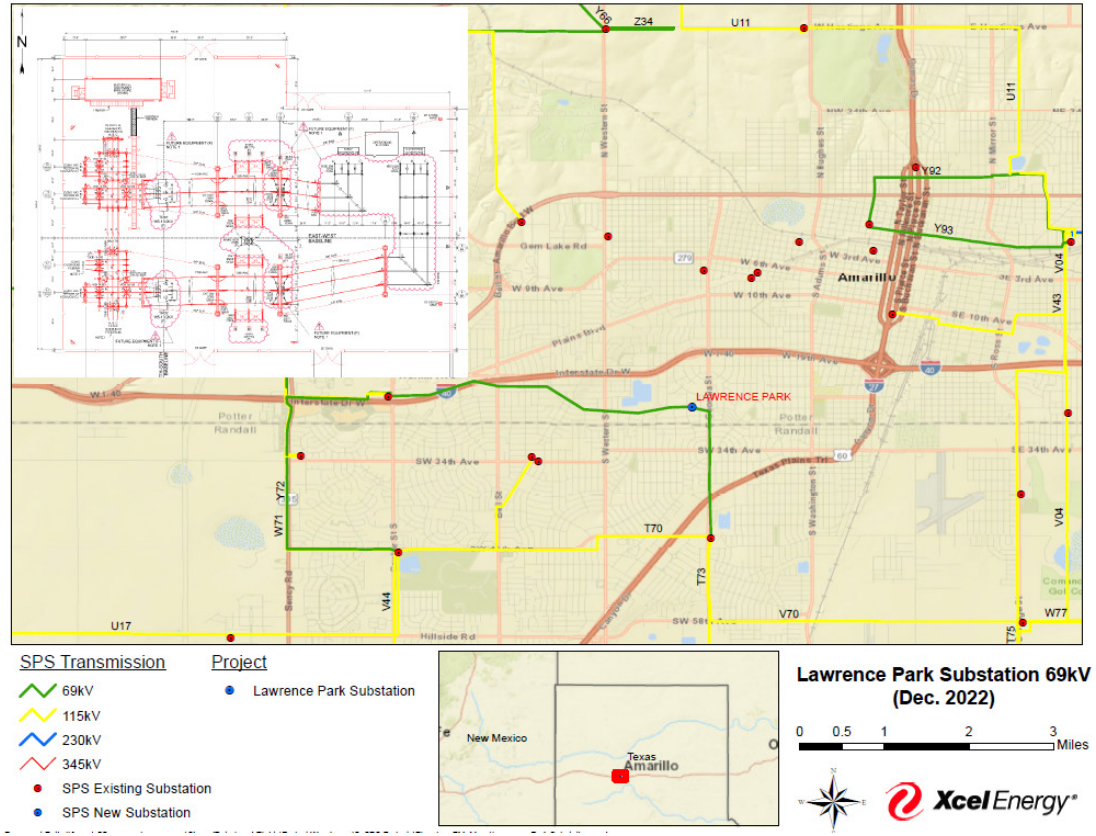
Voltage: 69 kV

ISD: December 2022

NTC: No

Description:
Replacement of existing distribution substation

Need: Asset Renewal



Echo Substation (New)

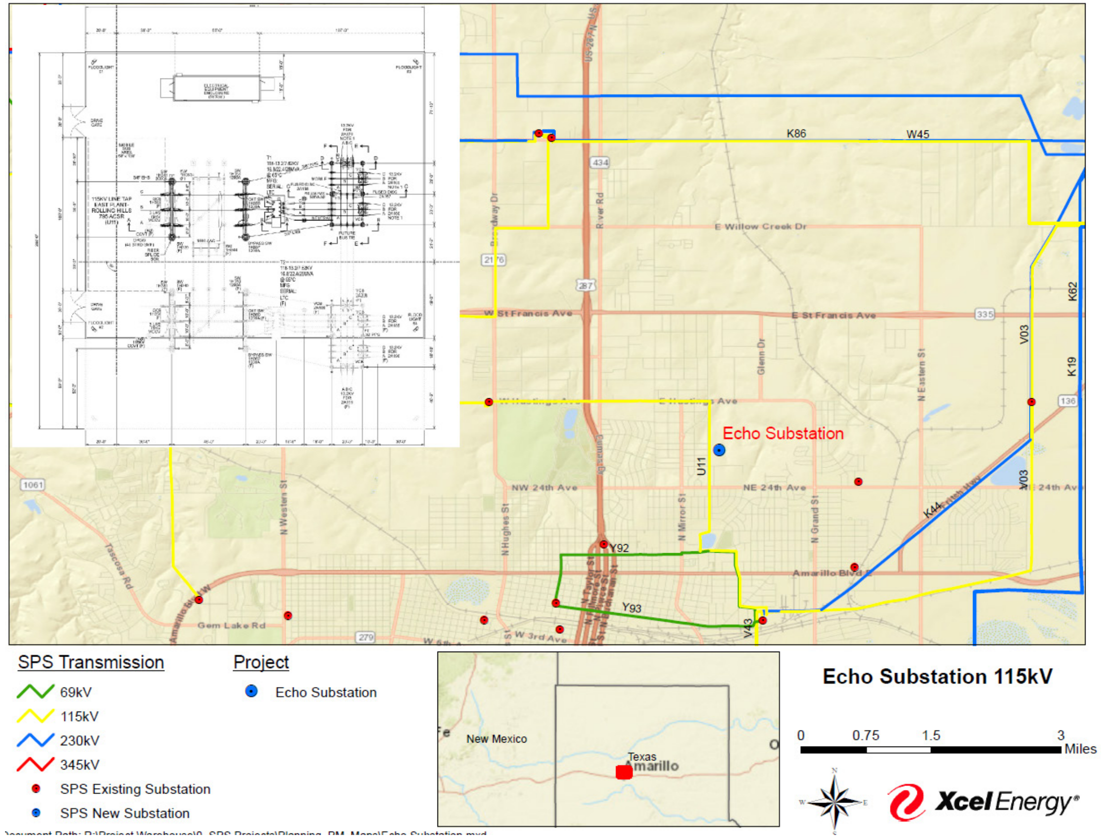
Voltage: 115 kV

ISD: April 2023

NTC: No

Description: New distribution substation Amarillo, TX

Need: Distribution Driven



Demon Substation (New)

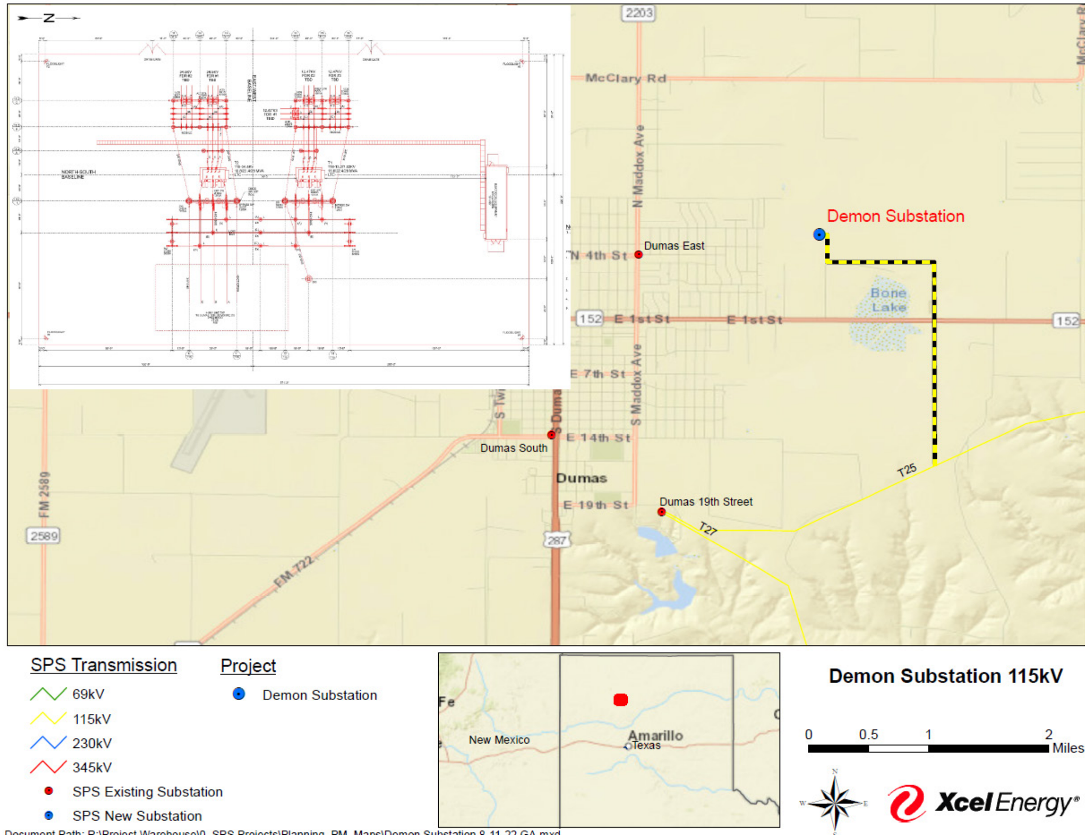
Voltage: 115 kV

ISD: May 2023

NTC: No

Description: 115kV switch tap, T25. Transmission line 2.75 miles.

Need: Distribution Driven



Magnum Substation (New)

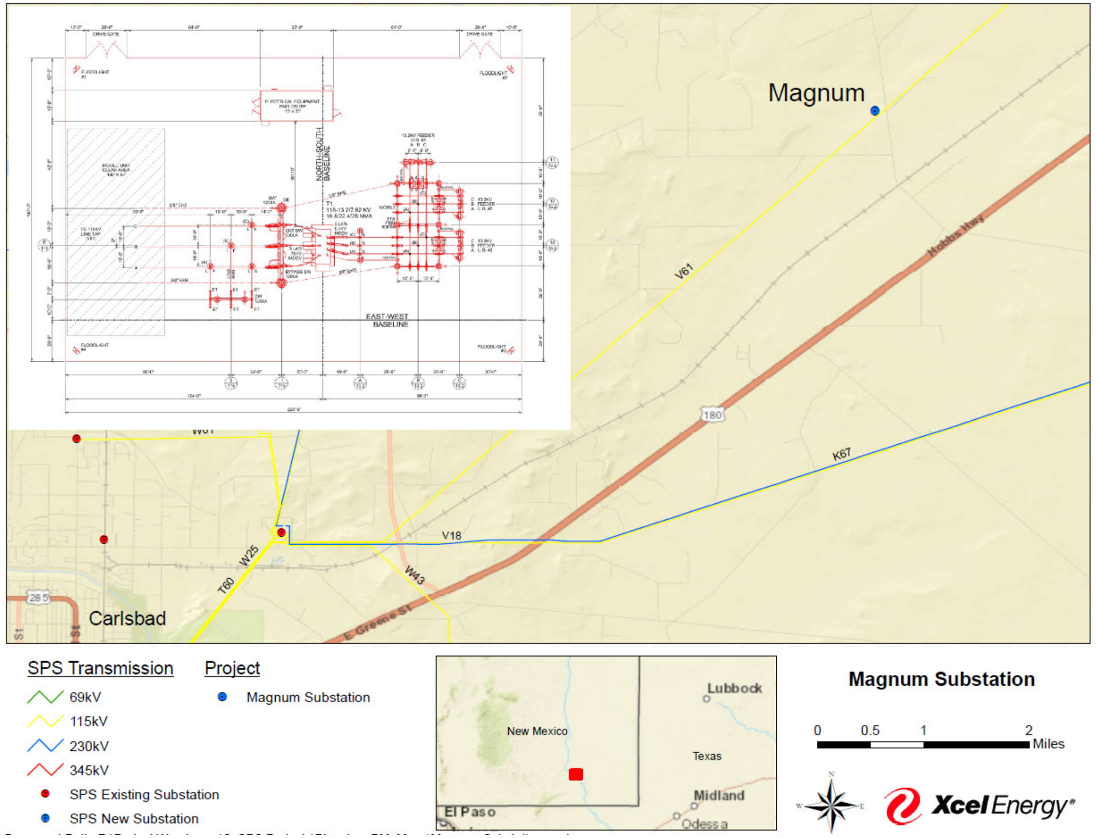
Voltage: 115 kV

ISD: May 2023

NTC: No

Description: 115kV Substation off V61

Need: Distribution Driven/Load Growth SENM



Arnot Substation (New)

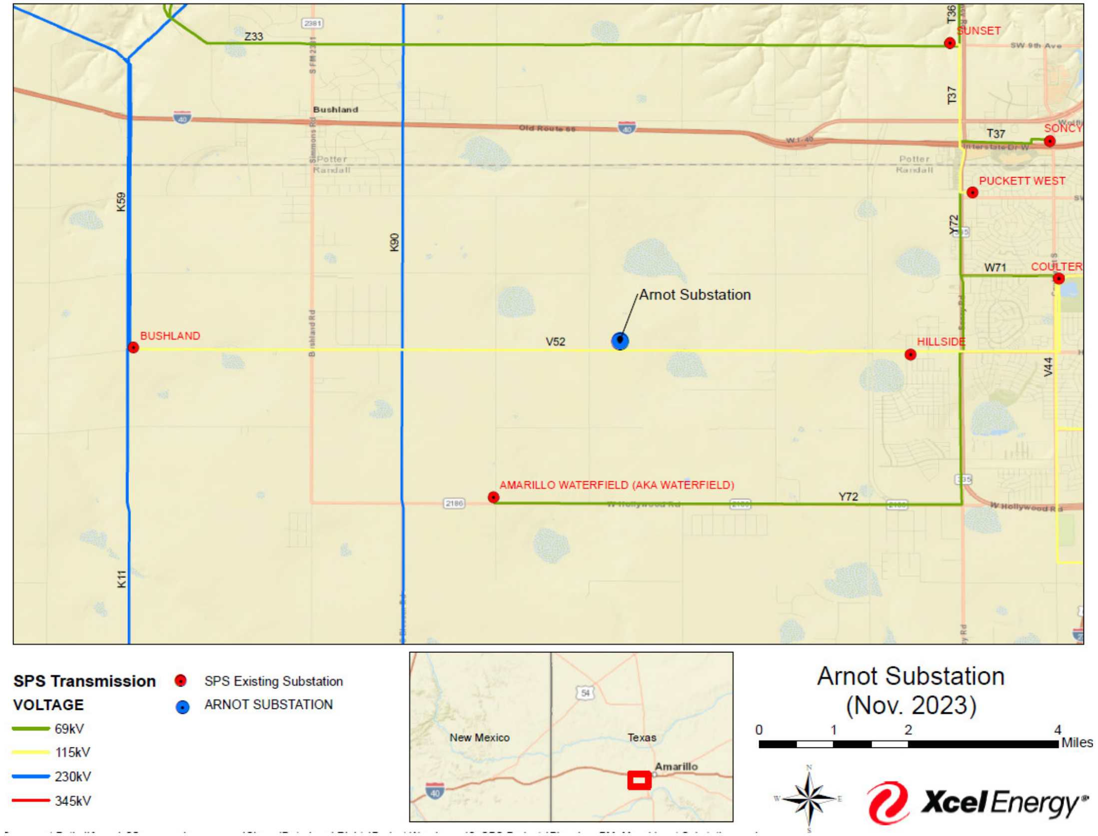
Voltage: 69 kV

ISD: November 2023

NTC: No

Description: 115kV distribution substation

Need: Distribution Driven/Load Growth



Battle Axe Substation (New)

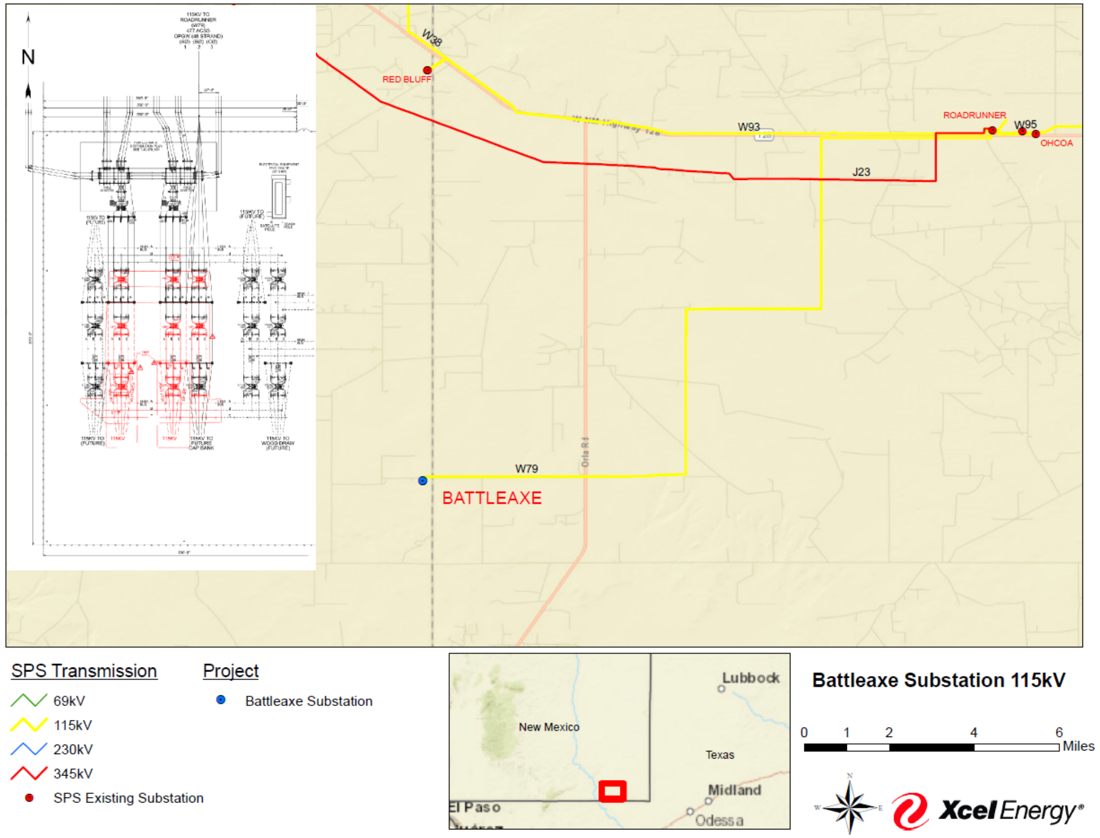
Voltage: 115 kV

ISD: TBD*

NTC: No

Description: Expand substation bus for new 115kV line terminal + Second Distribution Transformer

Need: Load Growth



Red Bluff Substation Expansion (New)

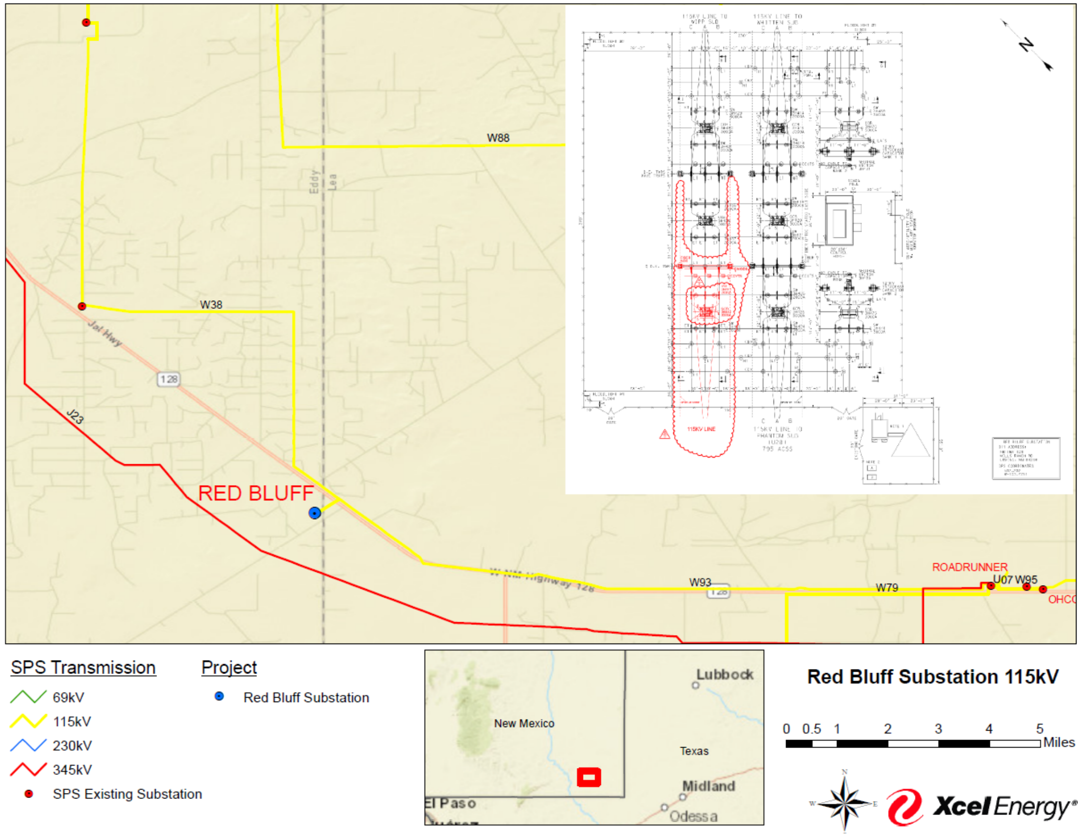
Voltage: 115 kV

ISD: September 2024

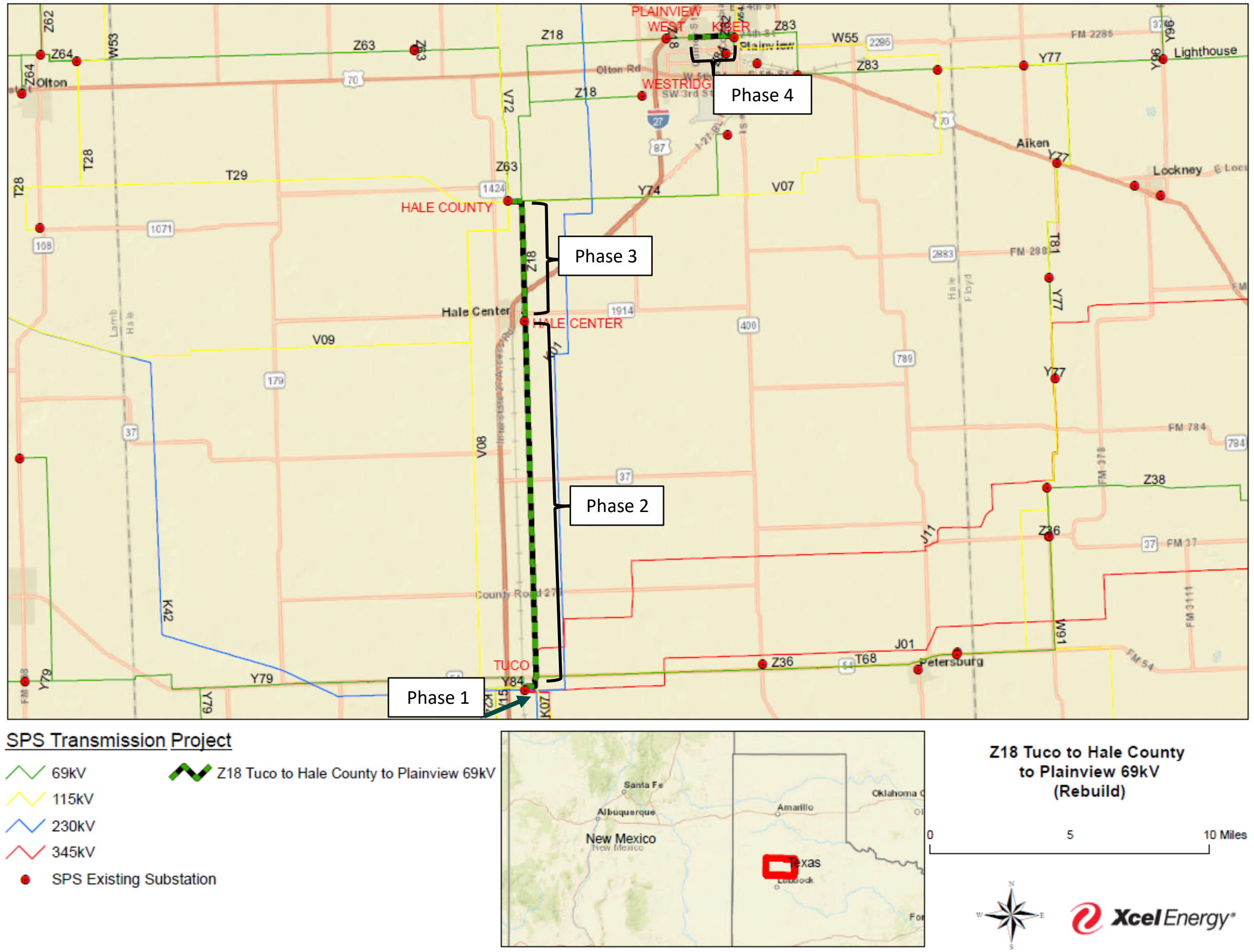
NTC: No

Description: Expand substation bus for new 115kV line terminal

Need: Load Growth



Z18 Tuco to Hale County to Plainview West (Rebuild)



Voltage: 69 kV

ISD: varied

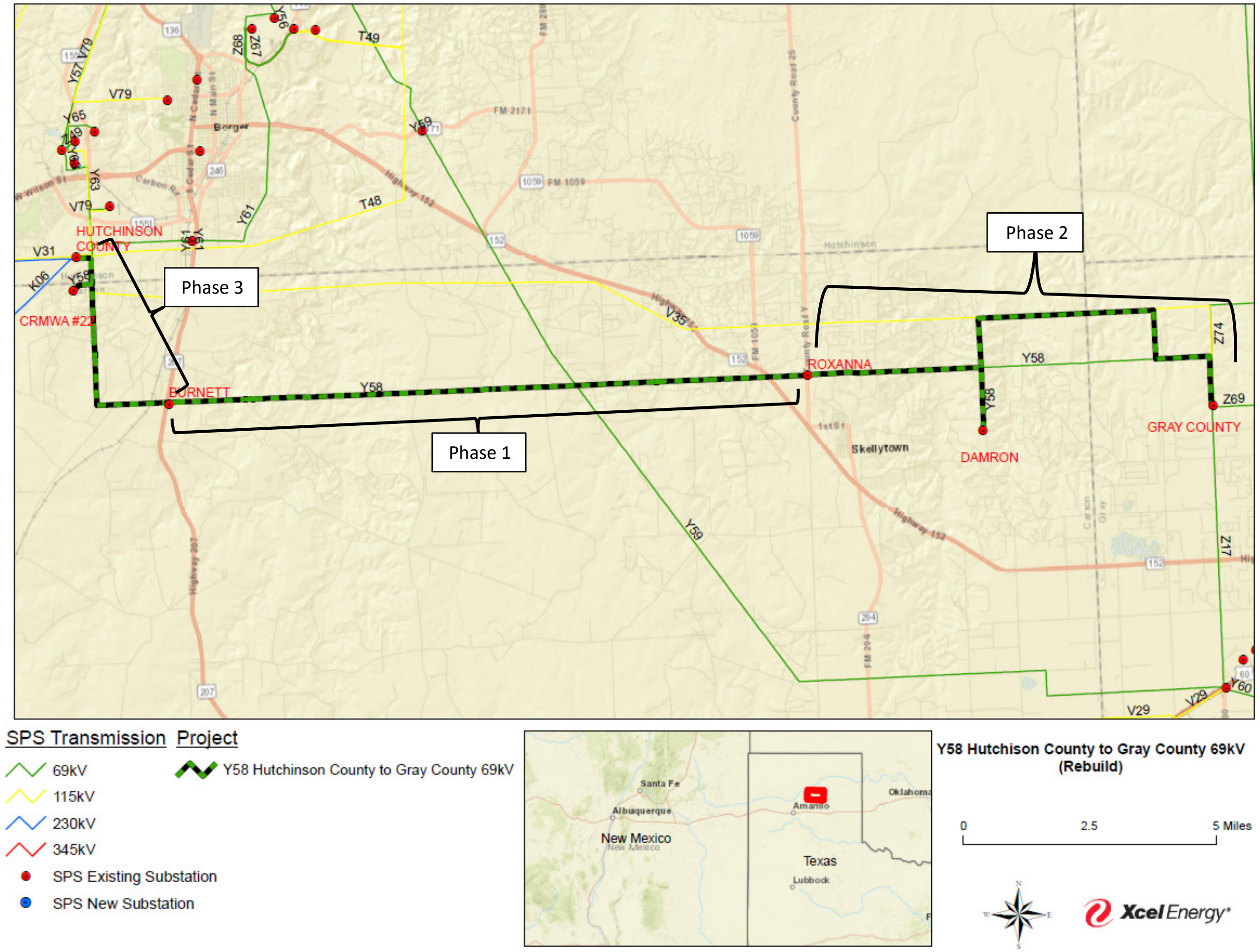
- Phase 1: Dec 2019
- Phase 2: April 2021
- **Phase 3: April 2022**
- Phase 4: Oct 2020

NTC: No

Description: Spaced out across 4 stages, rebuild 69 kV line

Need: Asset Renewal

Y58 Hutchinson County to Gray County (Rebuild)



Voltage: 69 kV

ISD: varied

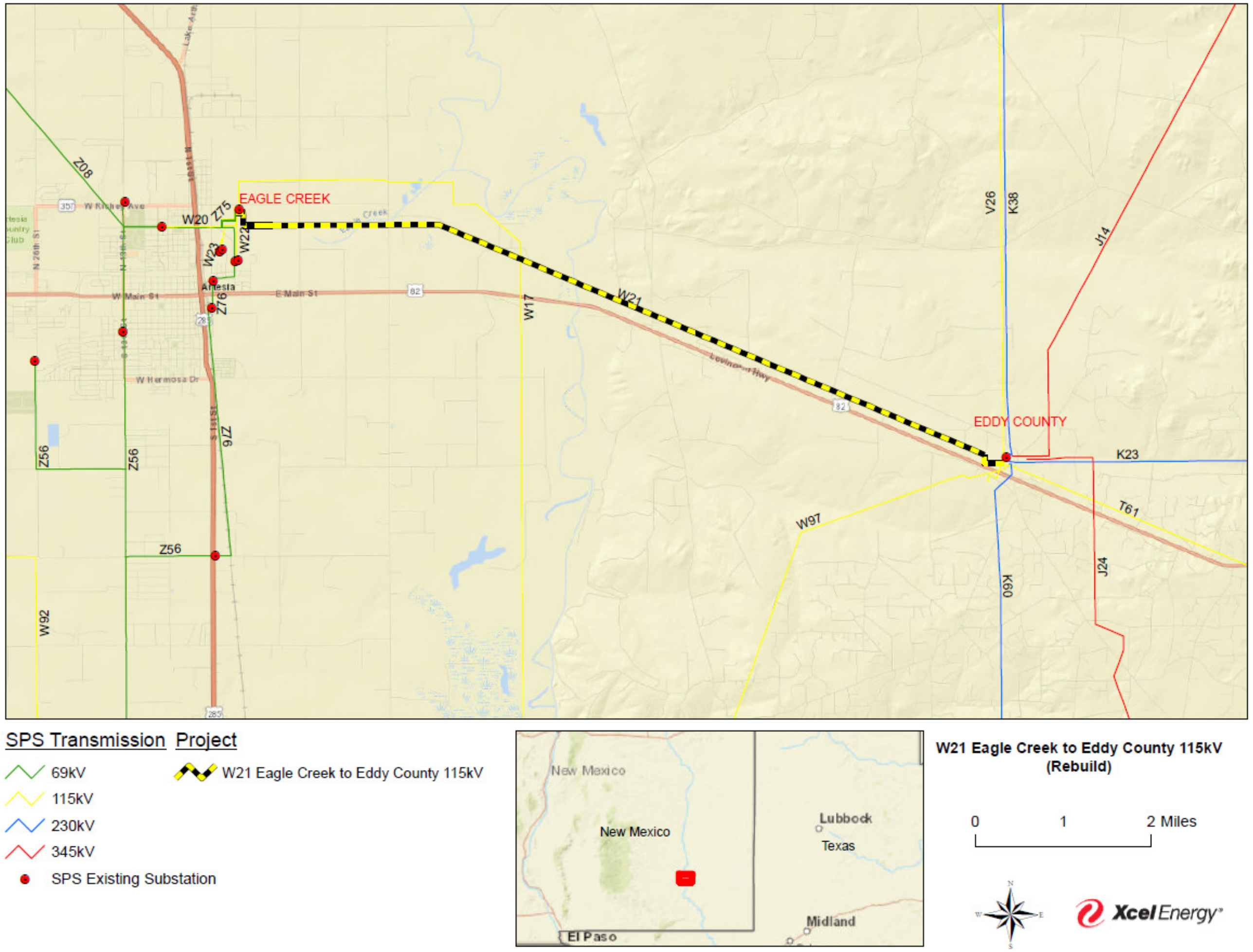
- Phase 1: December 2022
- Phase 2: May 2021
- Phase 3: July 2022

NTC: No

Description: Rebuild existing 69 kV line (~26 miles long)

Need: Asset Renewal

W21 Eagle Creek to Eddy County (Rebuild)



Voltage: 115 kV

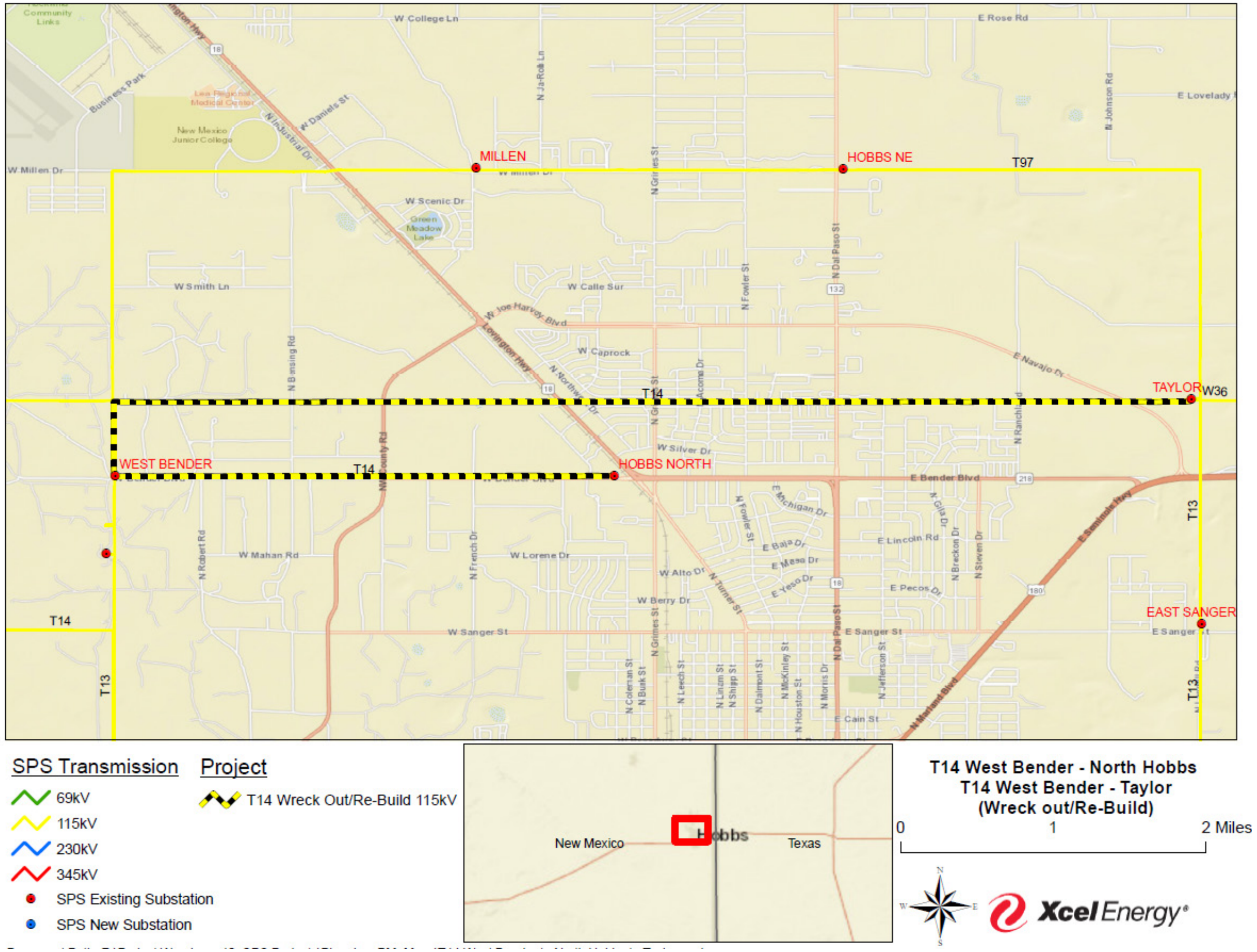
ISD: December 2022

NTC: No

Description: Rebuild existing 115 kV line (~9 mile long)

Need: Asset Renewal

T14 Taylor to Hobbs North (Rebuild)



Voltage: 115 kV

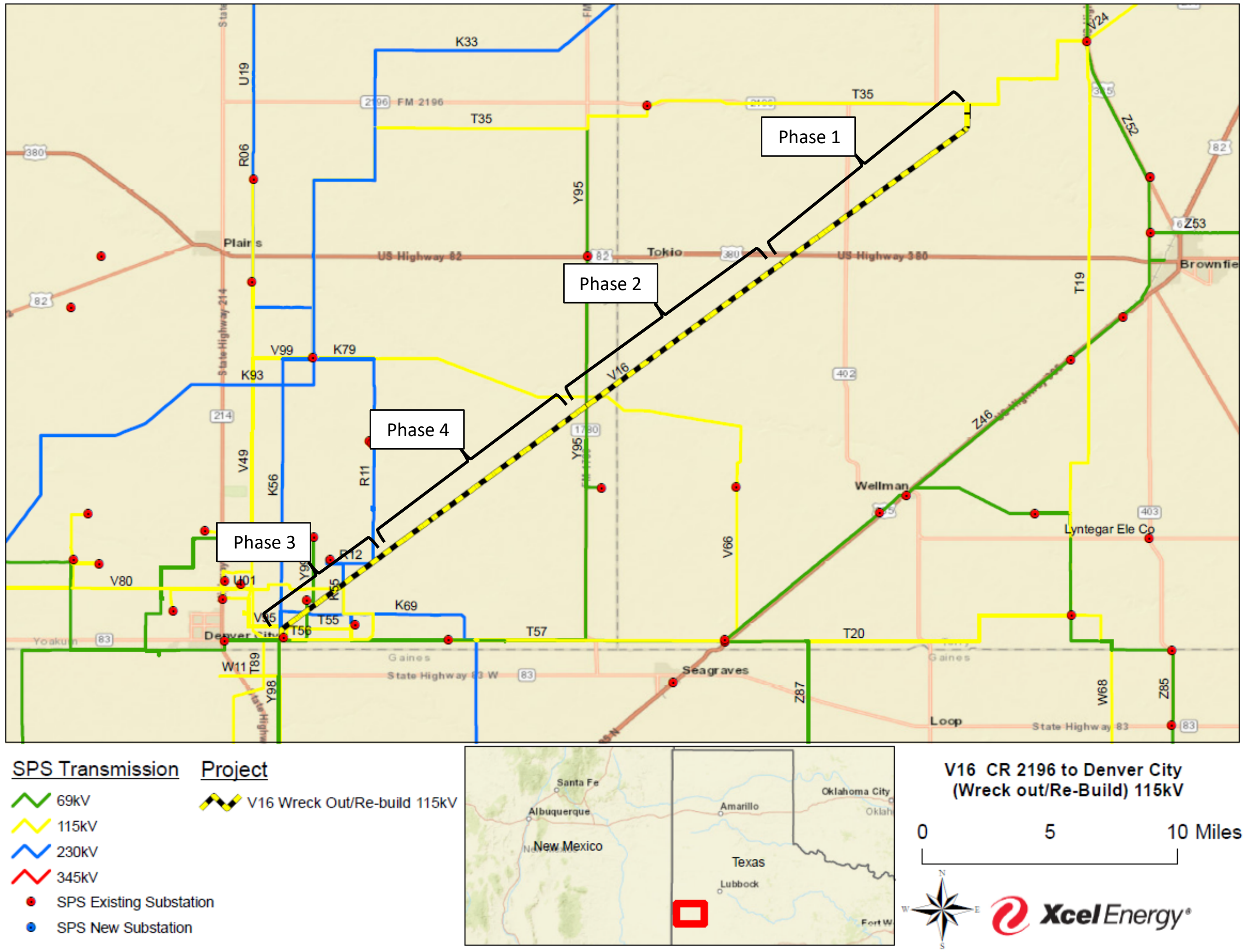
ISD: December 2022

NTC: No

Description: Rebuild 115 kV line (~9 miles long)

Need: Asset Renewal

V16 Terry County to Denver City (Rebuild)



Voltage: 115 kV

ISD: varied

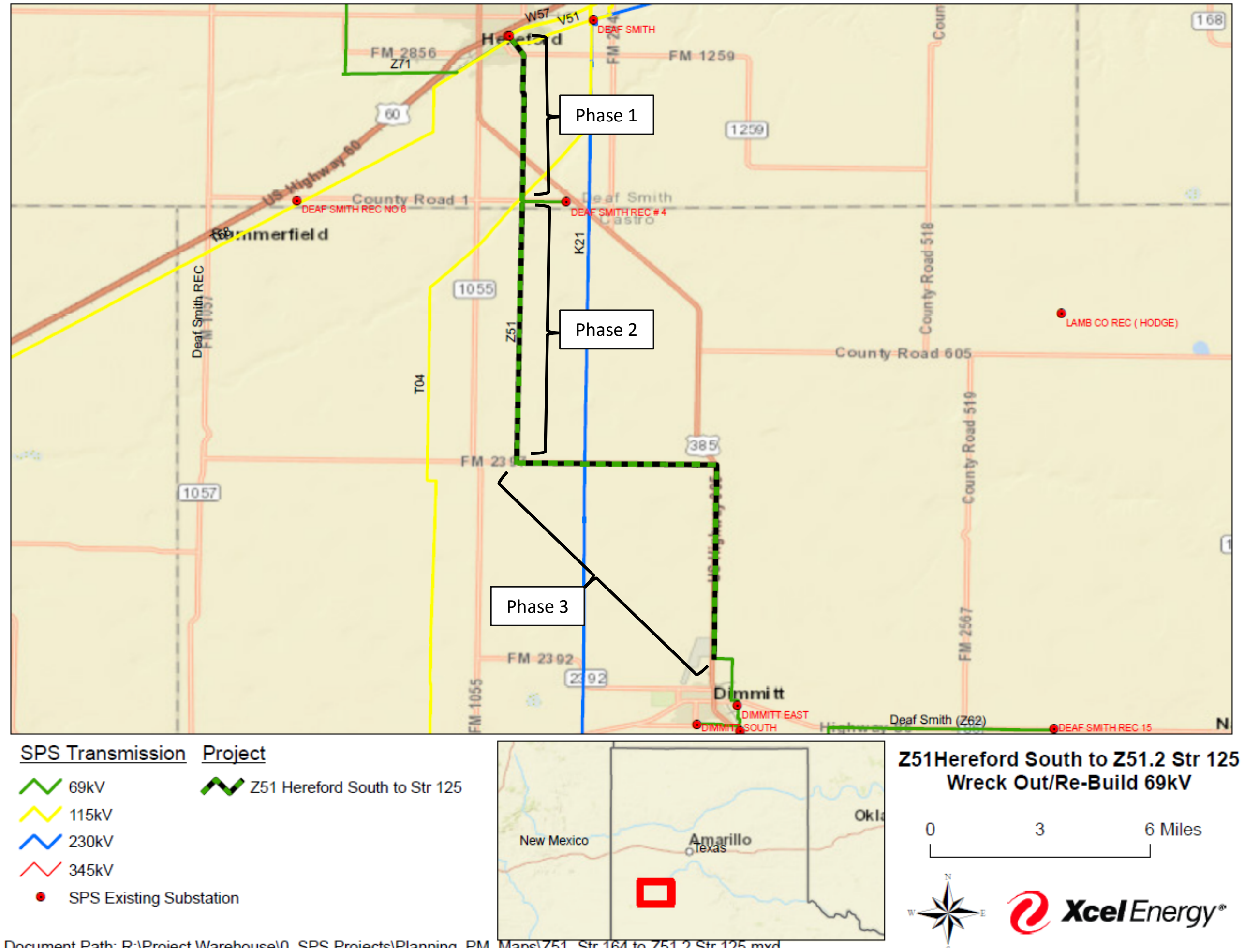
- Phase 1: May 2022
- Phase 2: December 2022
- Phases 3 & 4: May 2023

NTC: No

Description: Rebuild 115 kV line (~35 miles long)

Need: Asset Renewal

Z51 Hereford South toward Dimmit (Rebuild)



Voltage: 69 kV

ISD: varied

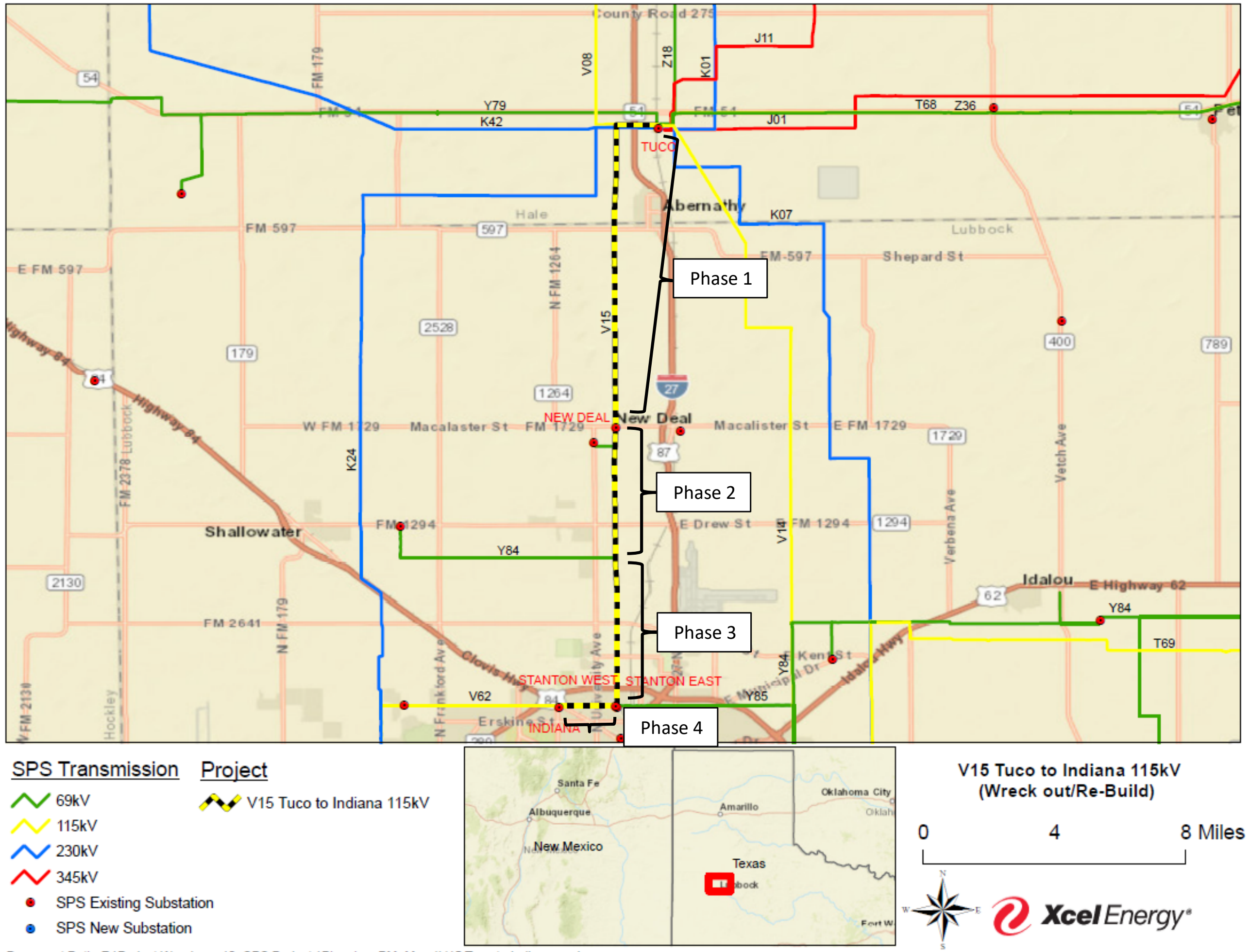
- Phase 1: May 2022
- Phase 2: November 2022
- Phase 3: May 2023

NTC: No

Description: Rebuild 69 kV line (~14 miles) from Hereford South to structure #125, north of Dimmit tap

Need: Asset Renewal

Tuco to Indiana (Rebuild)



Voltage: 115 kV

ISD: varied

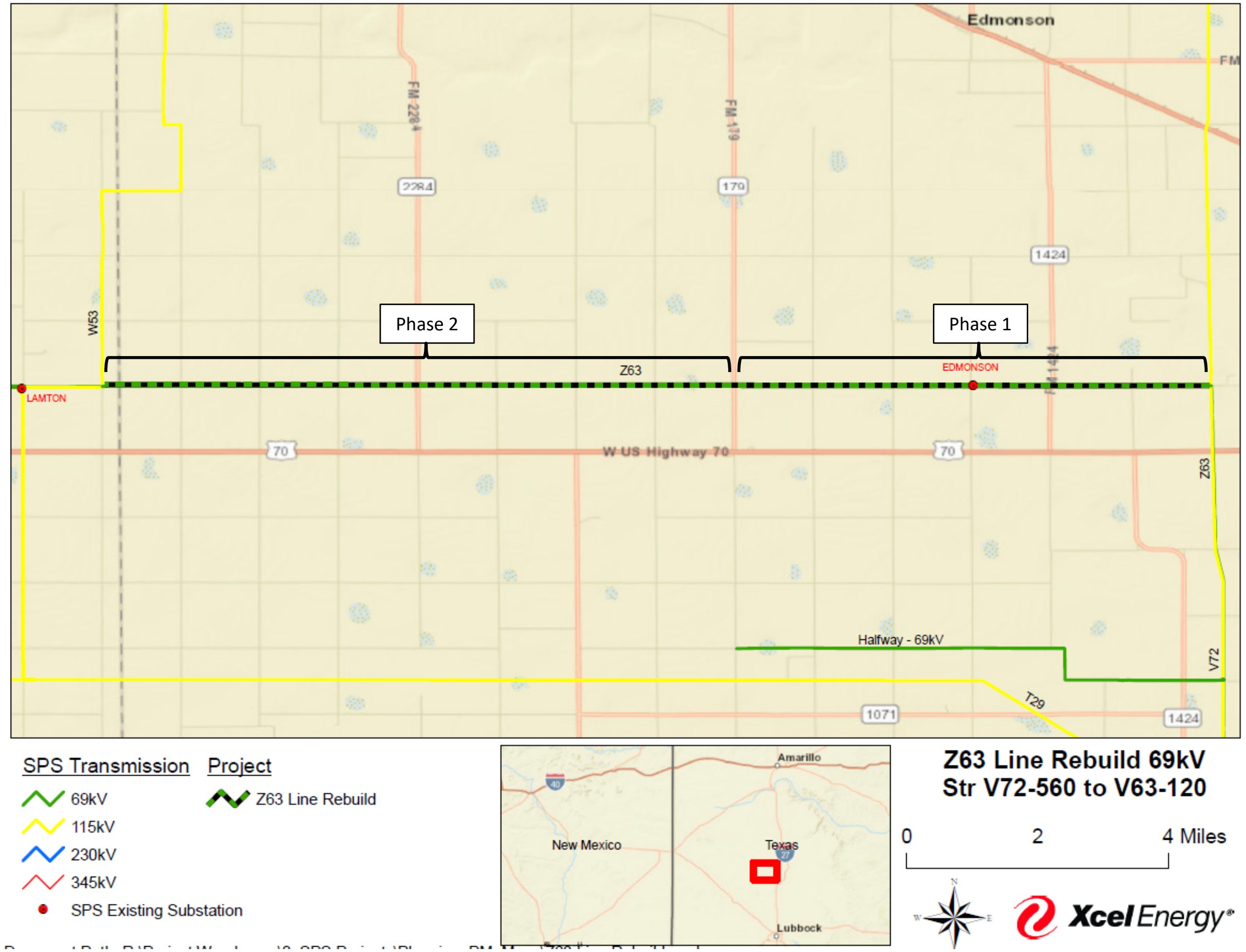
- Phase 1: Oct 2022
- Phase 2: Dec 2022
- Phase 3: May 2023
- Phase 4: Nov 2023

NTC: No

Description: Rebuild the double circuit 115/69 kV line (~19 miles)

Need: Asset Renewal

Z63 From V72 to Structure 310 (Rebuild)



Voltage: 69 kV

ISD: varied

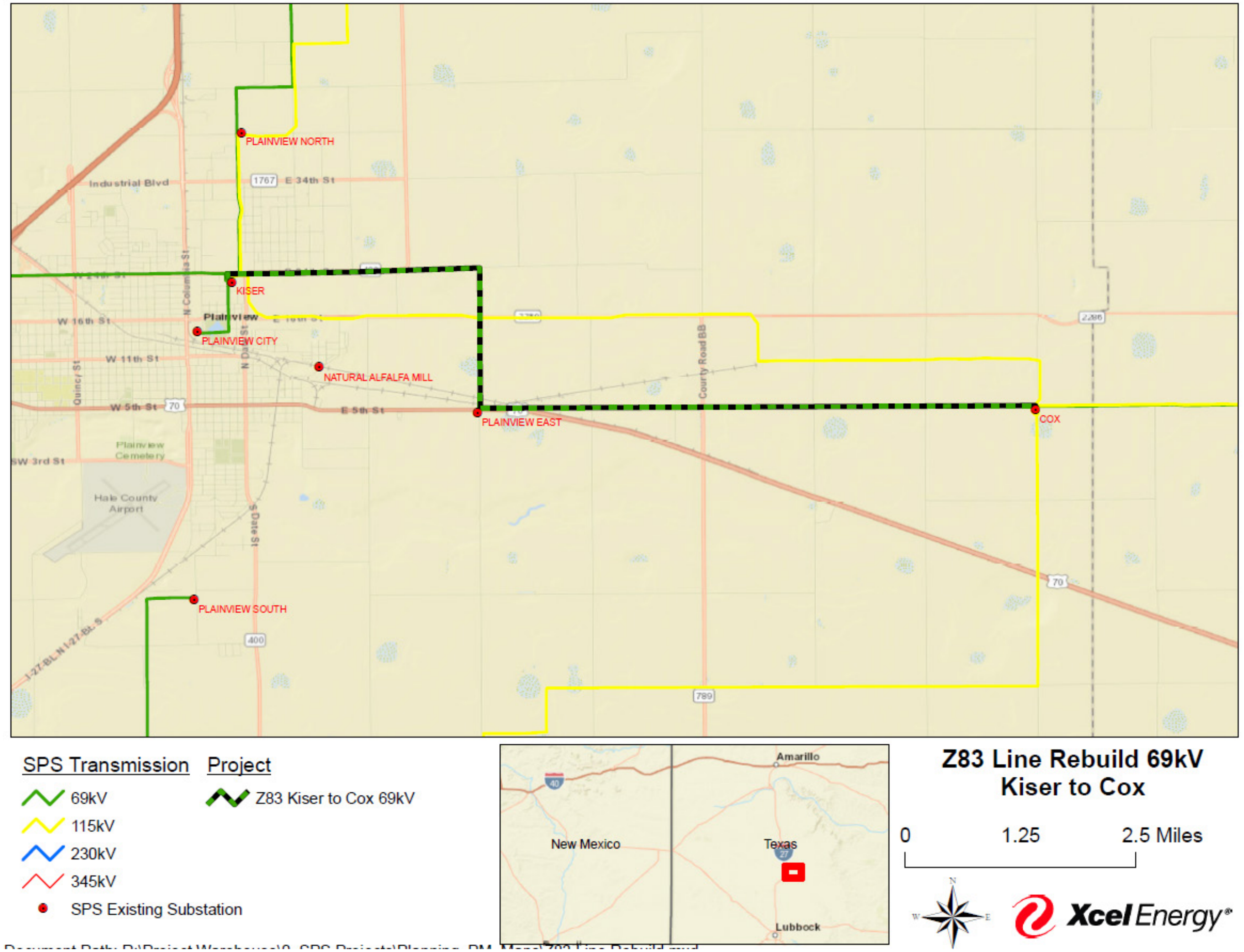
- Phase 1: May 2023
- Phase 2: Nov 2021

NTC: No

Description: Rebuild 69 kV line (~14 miles) from structures #62 to #310

Need: Asset Renewal

Z83 Cox to Kiser (Rebuild)



Voltage: 69 kV

ISD: December 2023

NTC: No

Description: Rebuild 69 kV line (~ 9 miles)

Need: Asset Renewal

ADDITIONAL INFORMATION

Cancelled NTC Projects

Network Upgrades Associated with DISIS Process

2020 Integrated Transmission Plan (ITP) Project list

2021 Integrated Transmission Plan (ITP) Project list

2022 Integrated Transmission Plan (ITP) Project list

Power for the Plains

Cancelled NTC Projects

- Projects and Network Upgrade ID (UID):
  - Amarillo South 230 kV Terminal Upgrades SPP-NTC-200326, UID 51170
  - Potash Junction 230 kV Terminal Upgrade SPP-NTC-200365, UID 51409
  - East Plant 115 kV Terminal Upgrade SPP-NTC-200381, UID 11027
  - Tuco – Stanton 115 kV Terminal Upgrades SPP-NTC-200444, UID 51623
  - Martin-Pantex N 115kV Terminal Upgrades SPP-NTC-200444, UID 61836
  - Pantex South-Highland Tap 115kV Terminal Upgrades SPP-NTC-200444, UID 61837
  - Potter-Newhart Terminal Upgrade SPP-NTC-210574, UID 81756
  - Cargill-Deaf Smith #24 Rebuild SPP-NTC-210574, UID 143168
  - Deaf Smith #24-Parmer Rebuild SPP-NTC-210574, UID 143169
  - Parmer-Deaf Smith #20 Rebuild SPP-NTC-210574, UID 143170

DISIS 2016-002 Network Upgrades*

- Tolk 2nd 345/230 kV transformer — • ISD: January 2022
- Tierra Blanca capacitor bank – 100 MVAR — ➢ ISD: November 2021

DISIS 2017-001 Network Upgrades

- Bull Creek Substation, GEN-2017-047 — ➢ ISD: December 2024
- Guymon South Substation, GEN-2017-100 — ➢ ISD: December 2025

DISIS 2017-002 Network Upgrades

- Several have been identified - Study is not complete

2020 ITP Projects

Lubbock South - Allen V45 (New)

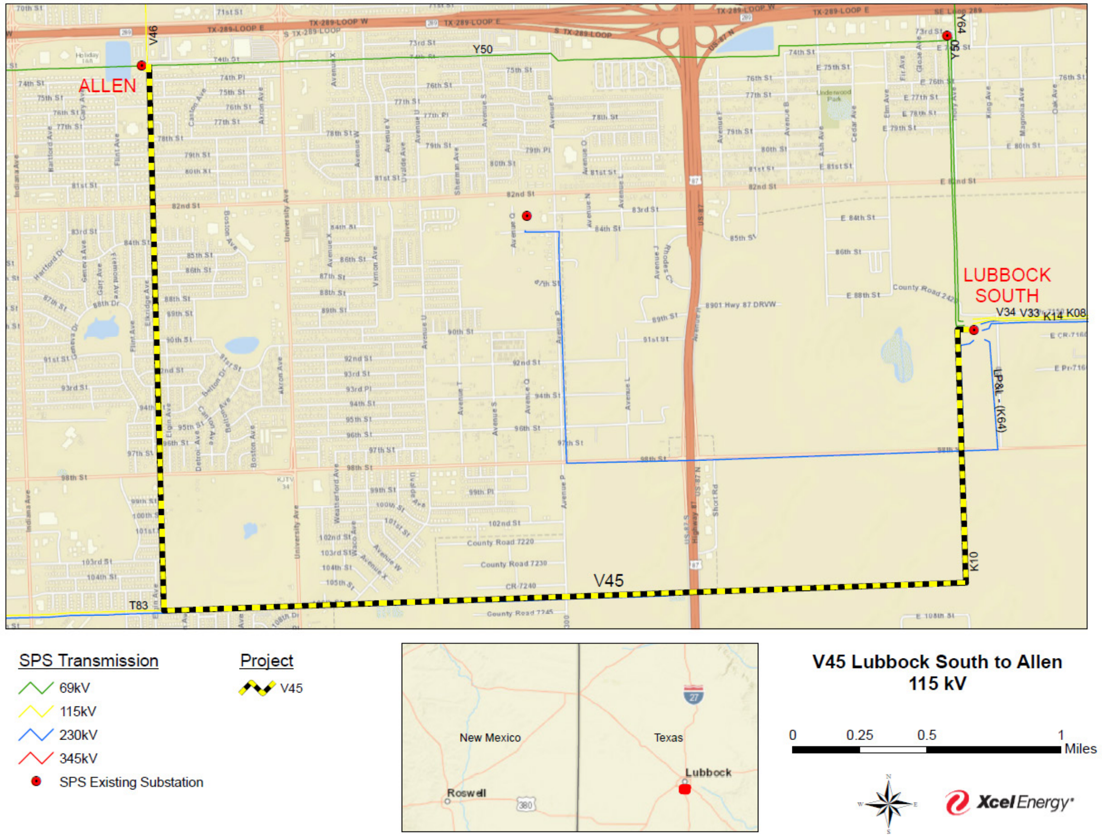
Voltage: 115 kV

ISD: TBD

NTC: Yes

Description: Upgrade terminal equipment and rebuild 6 miles of 115 kV line

Need: Reliability



Allen - Quaker T83 (New)

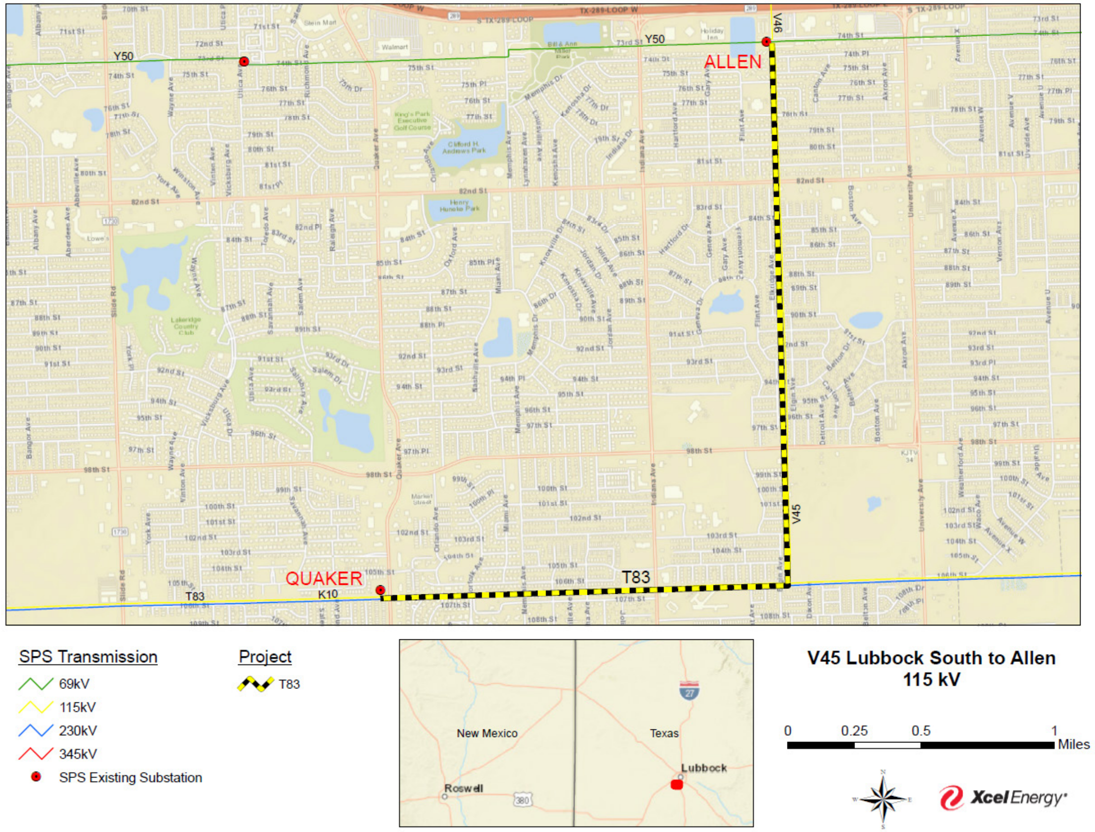
Voltage: 115 kV

ISD: TBD

NTC: Yes

Description: Upgrade terminal equipment and rebuild 3.6 miles of 115 kV line

Need: Reliability



Carlisle – Murphy V40 (New)

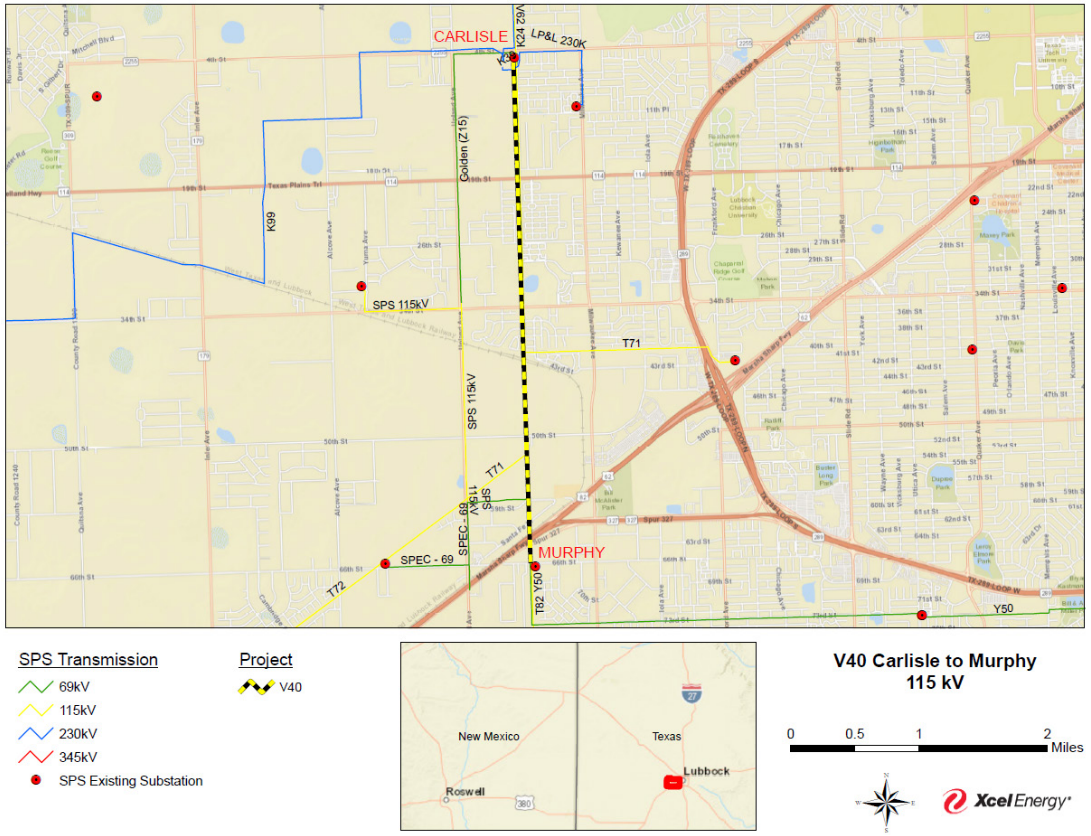
Voltage: 115 kV

ISD: TBD

NTC: Yes

Description: Rebuild 4.0 miles of line

Need: Reliability



Hereford South – Deaf Smith #6 (New)

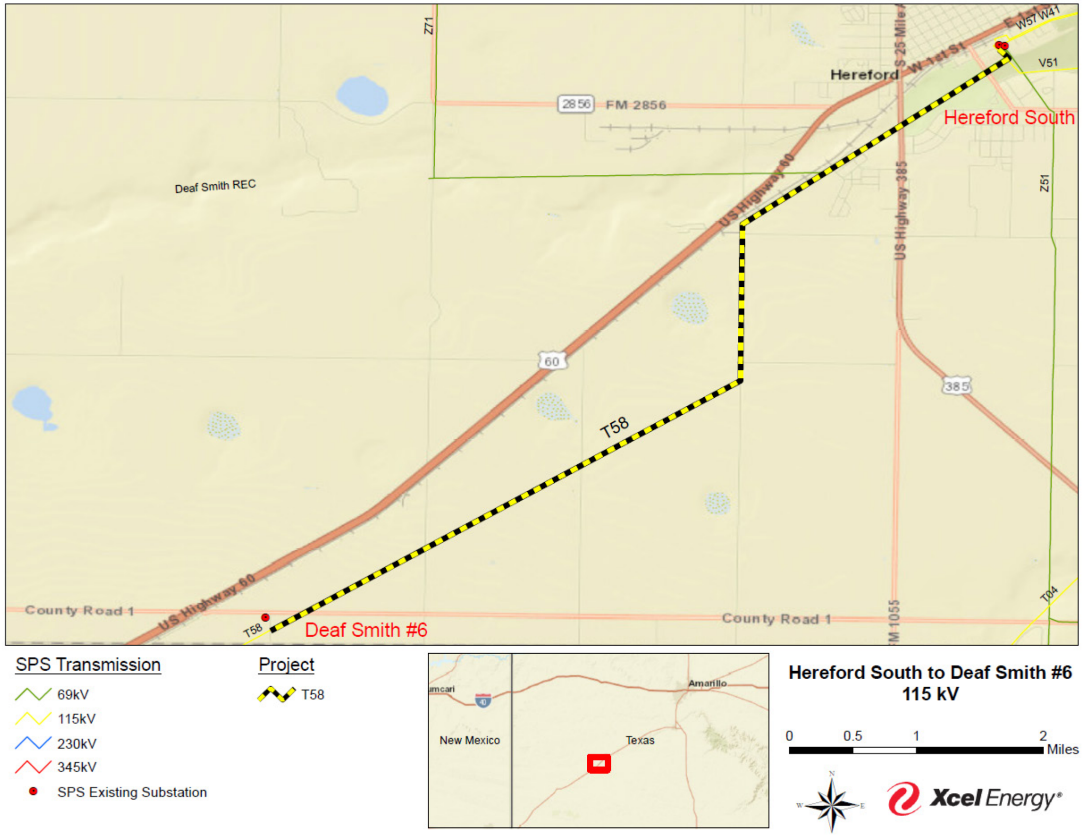
Voltage: 115 kV

ISD: TBD*

NTC: Yes

Description: Rebuild approximately 7.12 miles of 115kV

Need: Reliability



Deaf Smith #6 – Friona Rural (New)

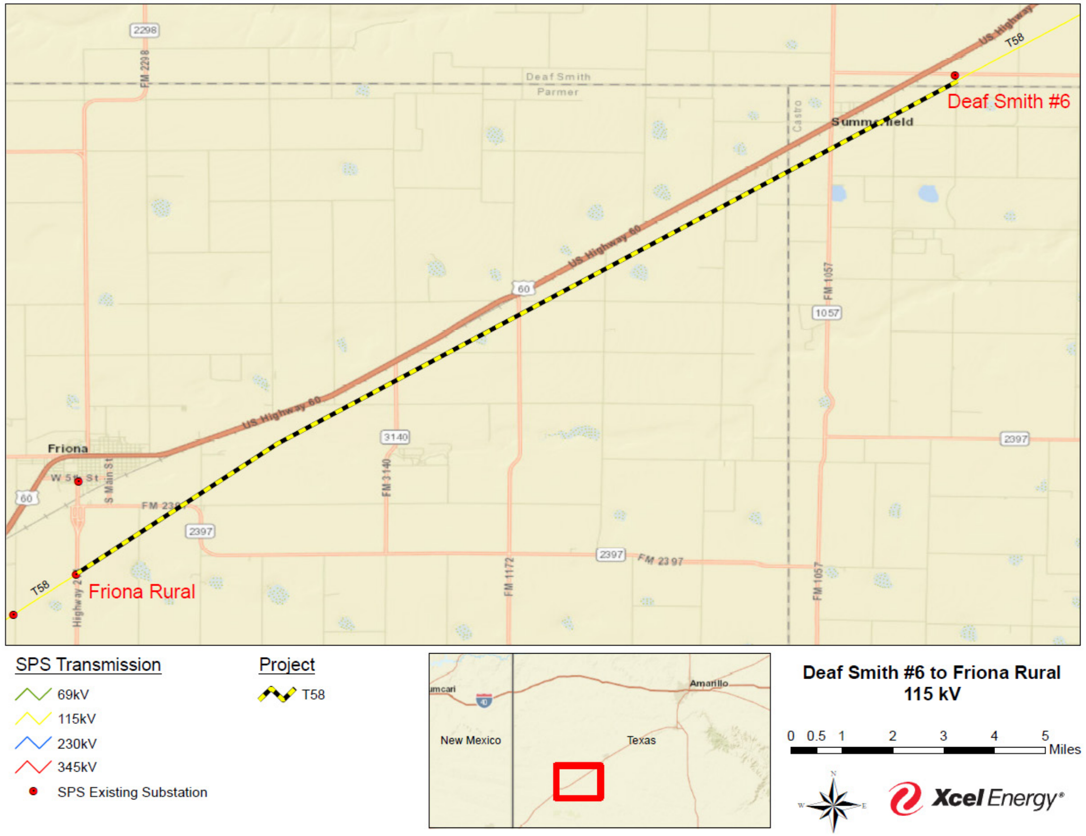
Voltage: 115 kV

ISD: TBD*

NTC: Yes

Description: Rebuild approximately 18.9 miles of 115kV

Need: Reliability



Friona Rural - Cargill (New)

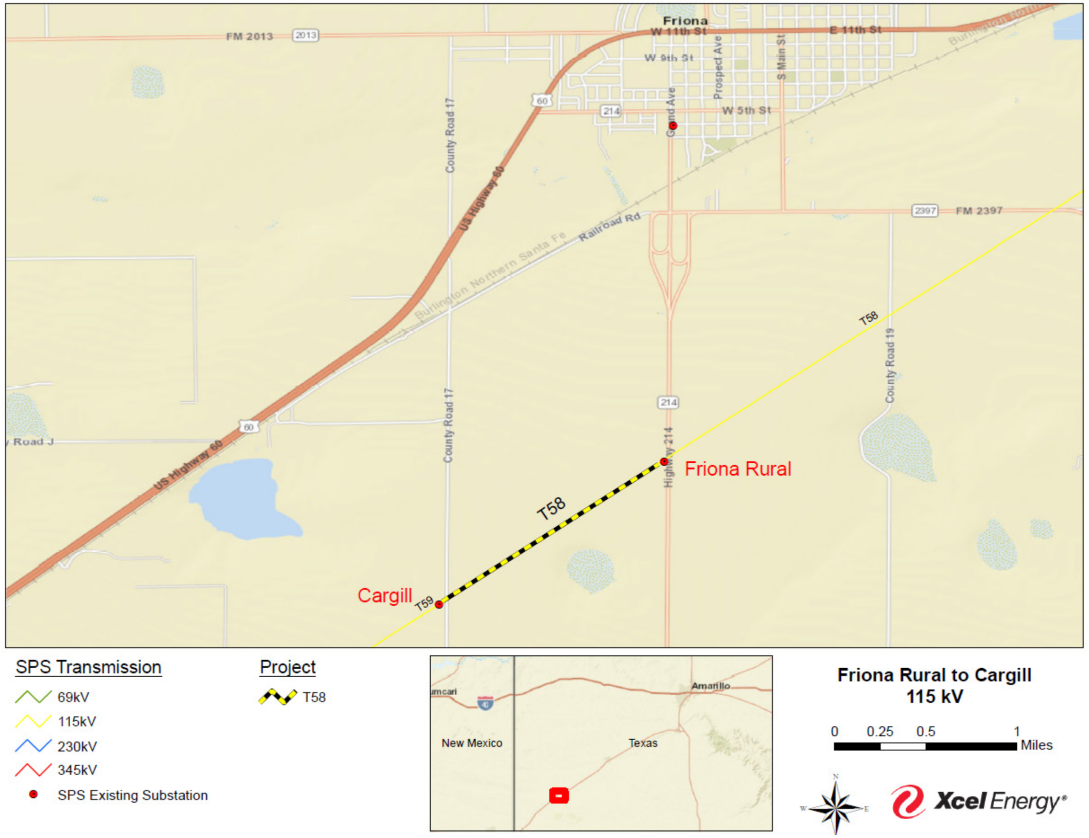
Voltage: 115 kV

ISD: TBD*

NTC: Yes

Description: Rebuild approximately 1.15 miles of 115kV

Need: Reliability



2021 ITP Projects

K08 Terminal Upgrades (New)

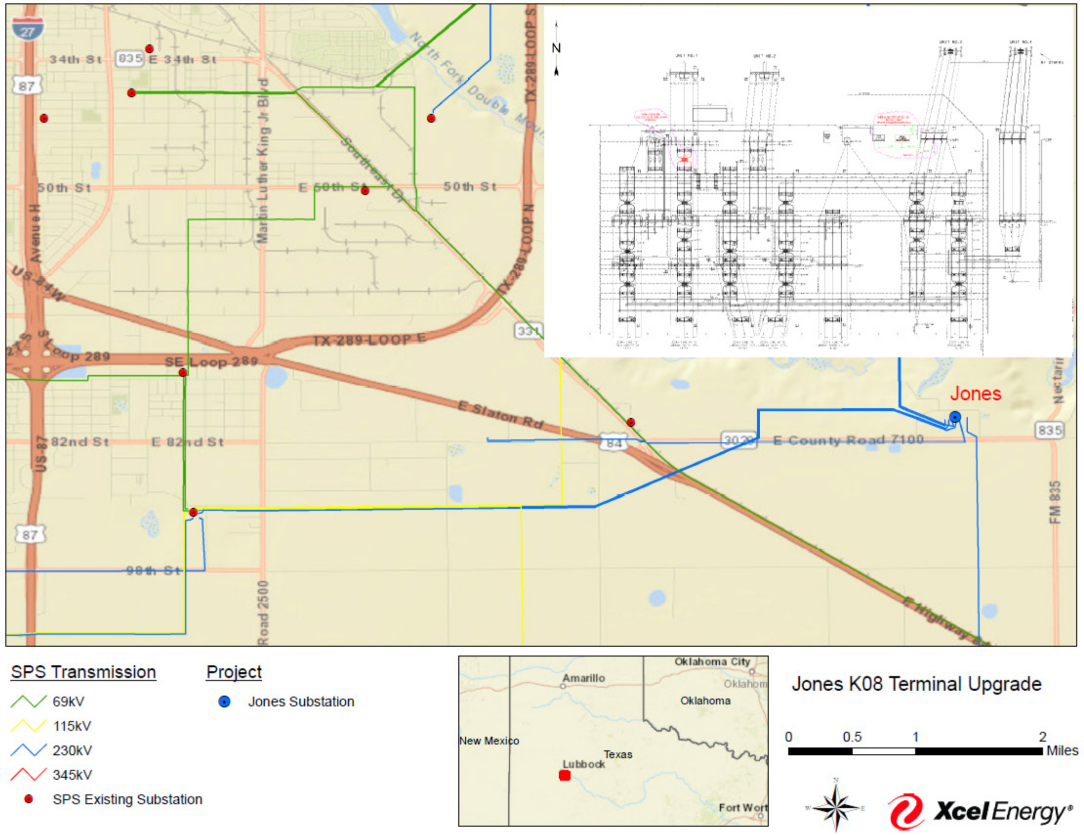
Voltage: 230 kV

ISD: June 2023

NTC: Yes

Description: Increase line clearances and upgrade line terminals.

Need: Reliability



Crossroads-Hobbs-Roadrunner Double Circuit (New)

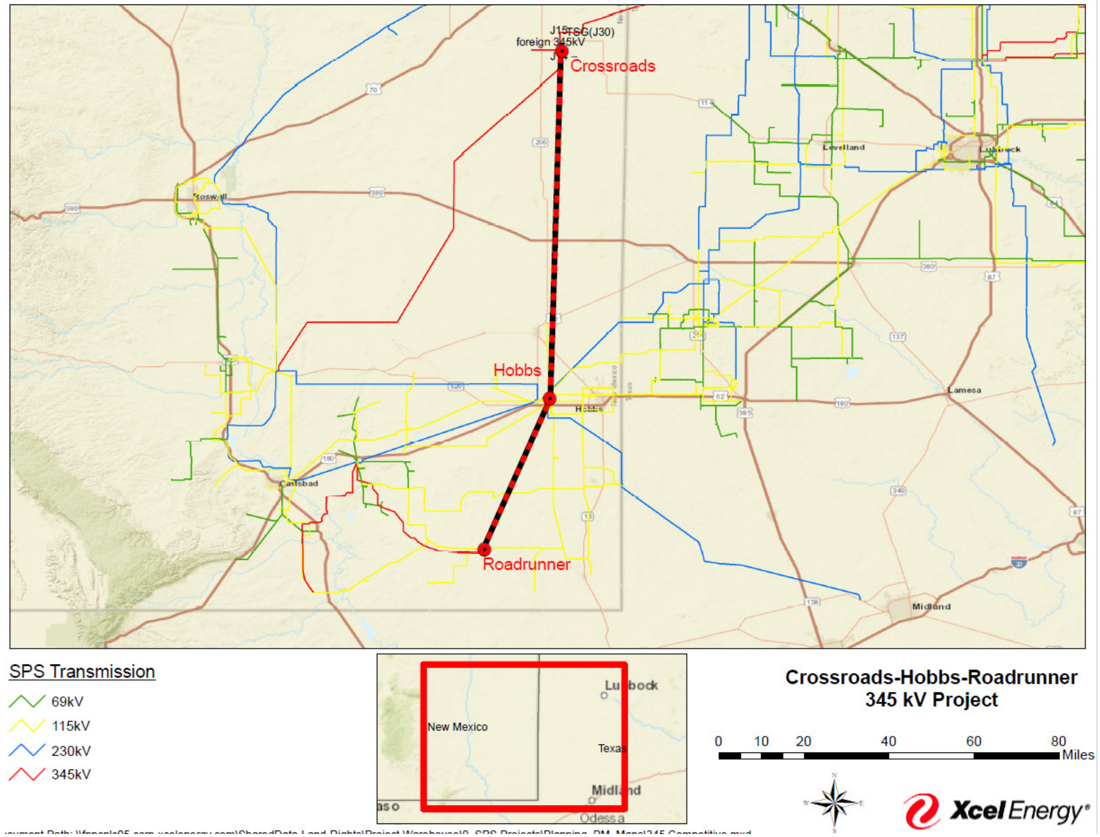
Voltage: 345 kV

ISD: TBD

NTC: Yes

Description: New 345kV substation expansions

Need: Reliability



2022 ITP Projects (Reliability)

Lubbock South Breaker (New)

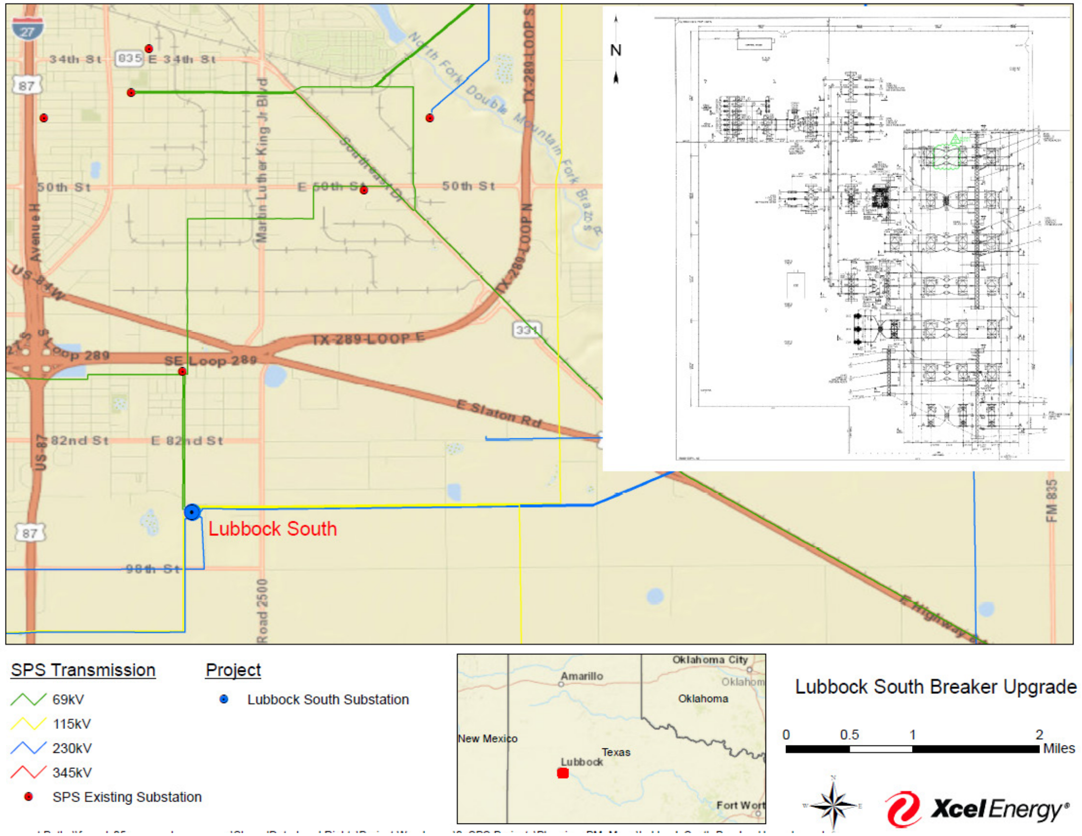
Voltage: 230 kV

ISD: TBD

NTC: Yes*

Description: Replace breaker, fault duty exceeded

Need: Reliability



Capacitor Bank, Lea Road Substation (New)

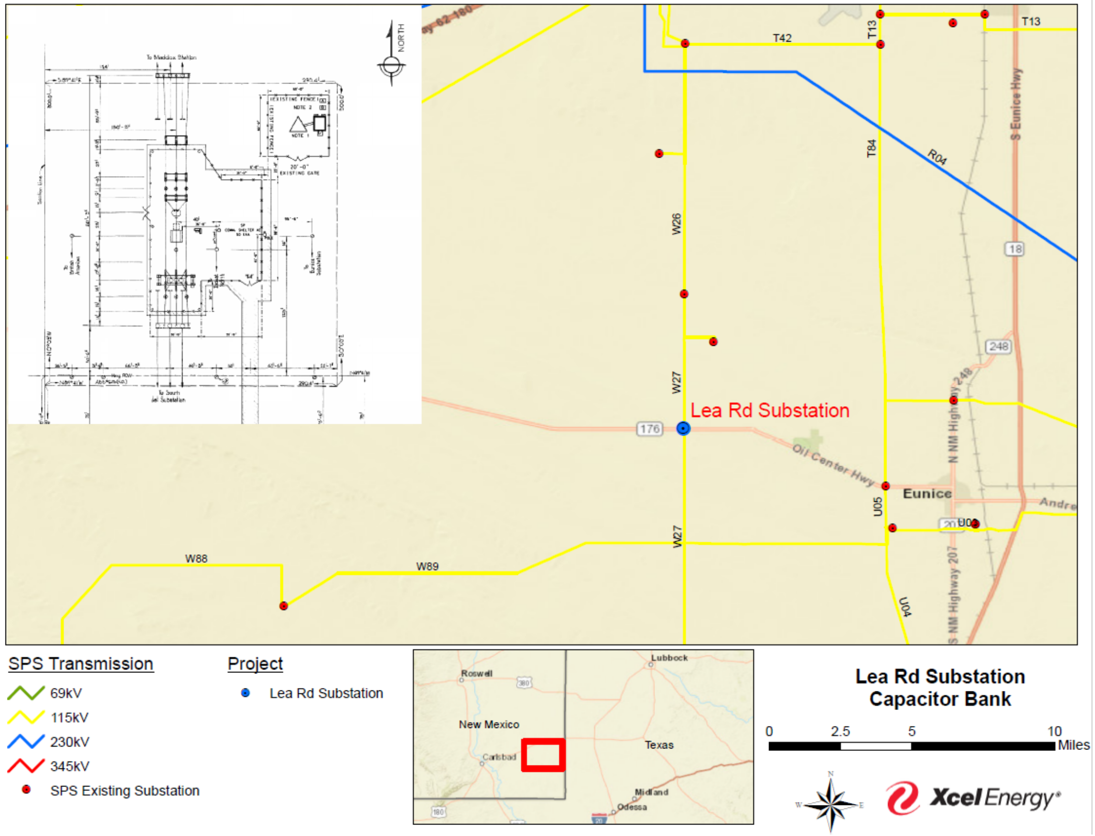
Voltage: 115 kV

ISD: TBD

NTC: Yes*

Description: Adding 2-14.4 MVAr separately switched capacitors

Need: Reliability



NERC TPL-001-5

- Approved 2020
- Enforcement Date: July 1, 2023
- Key Changes
  - Single Point of Failure (SPF)
    - Non-redundant components of a Protection System (FERC Order 754)
    - Single protective relay, single communications path, single DC supply, single control circuitry
    - Not mandate of redundancy in components of protection system
    - Upgrades to relaying, DC supply, breakers,
  - Technical Rationale for Selection of Known Outages
    - Outages removed from Model Build (Requirement R1)
    - Added to assessment part of analysis

Power for the Plains Website

http://www.powerfortheplains.com/

- Description for some of the projects
- Routing maps, when available
- General project information

Additional Questions

If you have questions that we were not able to address during this meeting, please email them to:

Roxanne.l.king@xcelenergy.com

We will take questions until October 28, 2022. The questions and answers will then be communicated out to those that RSVP'd for today's meeting

YOUR XCEL ENERGY POINTS OF CONTACT

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Xcel Energy®

ZONAL PLANNING CRITERIA

Implementation of RR477: Zonal Planning Criteria

Maurisa Hughes and Dee Edmondson - Southwest Power Pool


SPP Southwest Power Pool
XCEL ENERGY-
TEXAS AND NEW MEXICO
SUB-REGIONAL TRANSMISSION
PLANNING MEETING
OCTOBER 12, 2022
Working together to responsibly and economically keep the lights on today and in the future.
SouthwestPowerPool
SPPorg
southwest-power-pool

SPP Southwest Power Pool

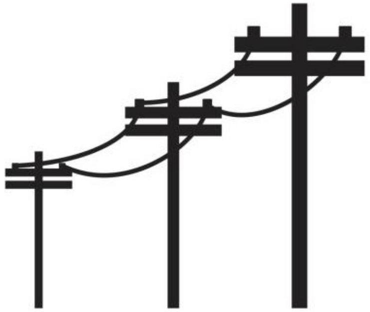
IMPLEMENTATION OF RR477: ZONAL PLANNING CRITERIA

DEE EDMONDSON

MAURISA HUGHES

PREVIOUSLY…

- Each Transmission Owner/Customer could develop their company specific Local Planning Criteria (LPC)
- Zonal Reliability Upgrades (ZRUs) would be issued based on violations of a company's LPC
- A company could be required to pay for an upgrade on another company's system that resulted from a violation of criteria that was more strict than their own



PREVIOUSLY…

Zone A

Transmission Owner 1

LPC: Post Contingent Voltage: 0.9-1.05
Load: 100 MW

Contribution to TO 3's upgrade= <u>Upgrade Cost x 100</u> (100+50+5) = 65% of Total Cost

Transmission Owner 2

LPC: Post Contingent Voltage: 0.9-1.05
Load: 50 MW

Contribution to TO 3's upgrade = <u>Upgrade Cost x 50</u> (100+50+5) = 32% of Total Cost

Transmission Owner 3

LPC: Post Contingent Voltage: **0.95**-1.05
Load: 5 MW

Contribution to TO 3's upgrade = <u>Upgrade Cost x 5</u> (100+50+5) = 3% of Total Cost

Planning & Cost Allocation

GO

#2 Establish uniform Schedule 9 local planning criteria

- Establish uniform local planning criteria within each Schedule 9 pricing zone
- Criteria can vary between zones
- Transmission Owners (TOs) within each zone should be subject to same local criteria in determining need for zonal reliability upgrades within zone
- Host TO should invite zone's TOs & transmission customers to participate when developing zonal criteria before submitting to SPP

FERC REJECTION RR391

- Reasons for Rejection
  - Proposal would give undue preference to the network customer with the largest total network load in the zone
  - Proposal is unduly discriminatory against other transmission owners in the zone who were not the largest TO in the zone
    - No formal process rights or ability to influence the Facilitating Transmission Organization's (FTO) decision-making in establishing the Zonal Planning Criteria.
    - The proposal does not ensure that input from other transmission owners, customers, and stakeholders in the zone are considered in the development of the Zonal Planning Criteria.
    - The FTO could prevent the local reliability needs of other transmission owners in the zone from being considered
  - Unclear from the proposed tariff revisions whether a TO may continue to use separate local transmission planning criteria in its local transmission planning process (i.e., outside of SPP's regional transmission planning process)

IMPLEMENTATION OF RR477: ZONAL PLANNING CRITERIA

- On June 28, 2022, in Docket No. ER22-1719-000, FERC accepted tariff revisions for the implementation of Zonal Planning Criteria (ZPC) to evaluate the need for Zonal Reliability Upgrades in SPP's regional transmission planning process. This presentation steps through the resulting changes and the implementation timeline.

WHAT IS ZONAL PLANNING CRITERIA (ZPC)?

ZONAL PLANNING CRITERIA

- Zonal Planning Criteria (ZPC) establishes a uniform planning criteria for all Transmission Owners (TO) and Transmission Customers (TC) within a Zone
- Zonal Reliability Upgrades (ZRU) will be driven by violations of the ZPC and the cost will be allocated to all load in the Zone
- Examples
  - Thermal Loading Criteria
  - Voltage Criteria
  - MW-Mile

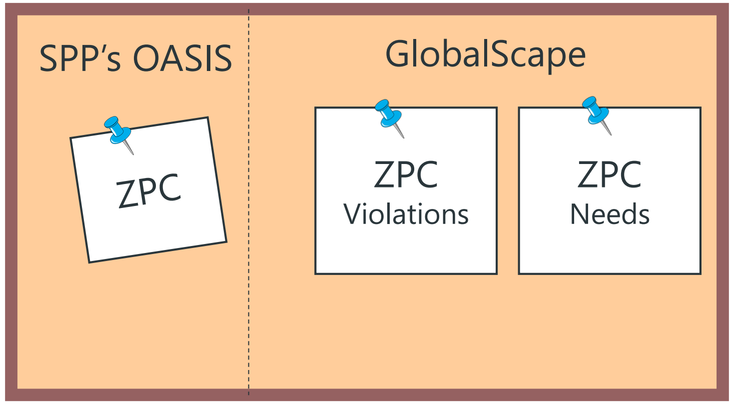
WHAT IS REMAINING THE SAME?

WHAT IS REMAINING THE SAME?

- Like its predecessor, Local Planning Criteria (LPC), ZPC will be due to SPP each year on April 1
- TOs and TCs will be able to
  - apply planning criteria that is more stringent than SPP's planning criteria to their equipment
  - receive zonal funding for ZRUs based on approved ZPC
- SPP Planning Criteria may be used

WHAT IS REMAINING THE SAME?

- ZPC will be posted to SPP's OASIS
- ZPC violations will be posted to GlobalScape with the ITP preliminary violations
- ZPC Needs will be posted to GlobalScape with the ITP Needs



WHAT IS REMAINING THE SAME?

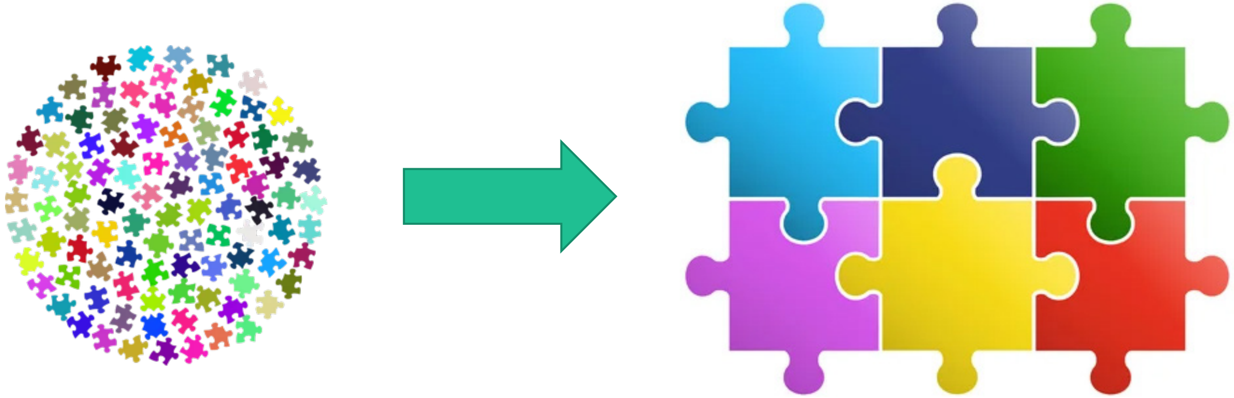
- Transmission Owners may continue to utilize their own company specific local planning process or their own FERC-approved local planning process to identify system upgrades (*i.e.*, outside of SPP's regional planning process)
  - Any cost associated with a system upgrade exclusively identified as needed through a Transmission Owner's local planning process or FERC-approved local planning process, and not identified through the Transmission Provider's regional planning process using the SPP Planning Criteria or the Zonal Planning Criteria, shall not be included in rates as a Base Plan Upgrade or a Zonal Reliability Upgrade

WHAT HAS CHANGED?

ZONAL REPLACES LOCAL

- The planning criteria used in SPP’s planning process, **which will be used to issue ZRUs**, will be submitted at the zonal level, instead of by individual TOs and TCs
- A Facilitating Transmission Owner (FTO) from each Zone will coordinate the development of each Zone’s ZPC

TOs and TCs **Zones**



HOW WILL THE FTO BE SELECTED?

FACILITATING TRANSMISSION OWNER (FTO) SELECTION

- SPP will calculate the Network Load of each Network customer in each Zone and notify the Network Customer with the largest Network Load by April 2
  - The Network Load shall be computed in accordance with Sections 34.4 and 34.5 of Part III of the Tariff on an average calendar year basis for the prior calendar year
- The Network Customer with the largest Network Load shall designate a Transmission Owner as the Facilitating Transmission Owner (FTO) for the Zone each year
  - This TO must have a Zonal Annual Transmission Revenue Requirement for facilities in the Zone
- The FTO is responsible for the ZPC coordination as described in Attachment O of the Tariff
- ZPC for Zone 10 shall be subject to Attachment AD of the Tariff

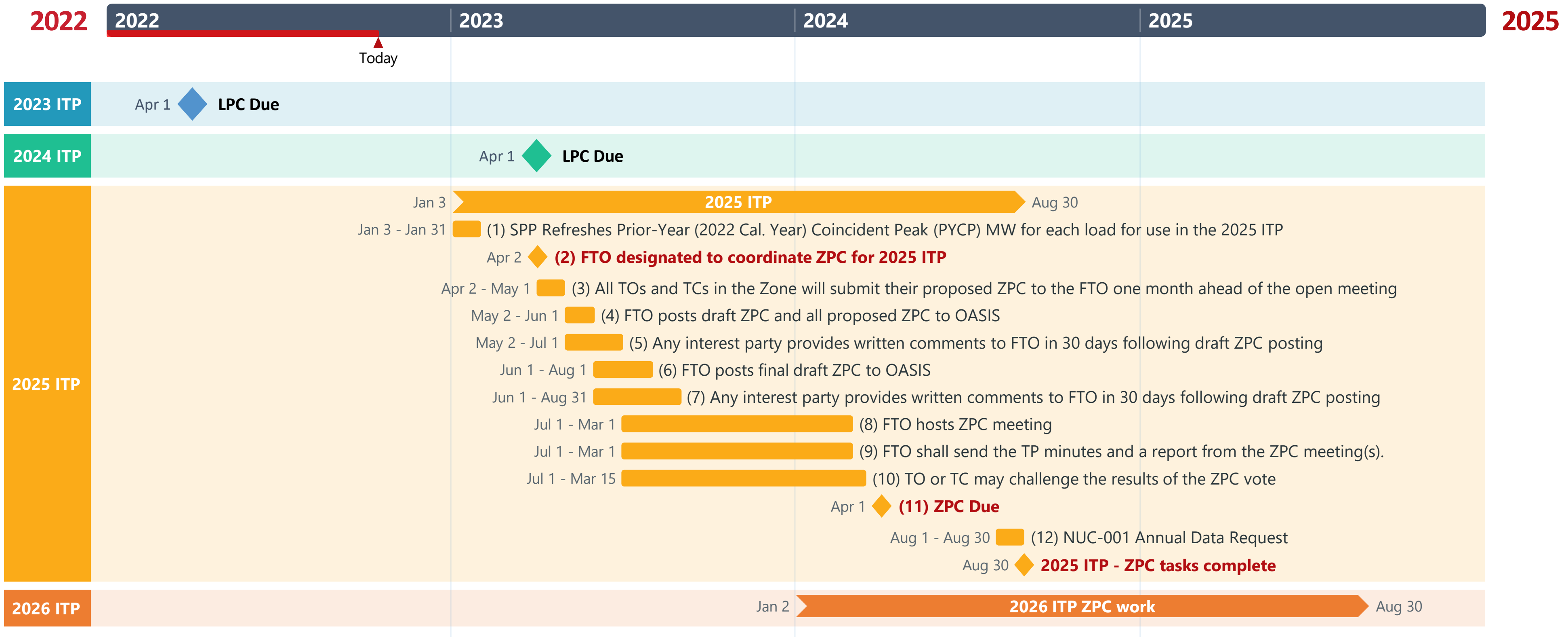
ATTACHMENT O
FACILITATING TRANSMISSION OWNER ROLE

- The FTO within the Zone shall hold open meeting(s) to discuss the development of the ZPCand shall invite all other TOs and TCs that receive Long-Term Service to serve load within that Zone
- Any initial development of and subsequent modification(s) to the Zonal Planning Criteria of a Zone shall be discussed in open meeting(s)
- The developed ZPC shall, **at a minimum**, conform to the NERC Reliability Standards and SPP Planning Criteria and only one set of ZPC shall be submitted per Zone

ANNUAL ZPC TIMELINE

ZPC TIMELINE

ZPC will first be implemented in the **2025 ITP**



SPP

KEY DATES

Year 1 | Year 2

1) **In January,** the Transmission Provider (SPP) will calculate each TO's and TC's prior calendar year's 12-month peak load in that Zone to **identify the Network Customer with the largest total Network Load in the Zone**

2) **By April 2,** the Network Customer with the largest total Network Load in the Zone shall **designate a TO as the FTO for the Zone.** This TO must have a Zonal Annual Transmission Revenue Requirement for facilities in the Zone

3) **By May 1,** TOs and TCs that receive Long-Term Service to serve load within that Zone may **submit proposed ZPC to the FTO**

KEY DATES

Year 1 Year 2

4) **By June 1**, the FTO will **post a proposed draft ZPC and all proposed ZPC received** to the FTO's Open Access Same-Time Information System (OASIS) linked from the TP's website for review and input by any interested party within that Zone

5) Any interested parties within that Zone will have **thirty (30) days** from the time any proposed draft ZPC is posted to the FTO's OASIS to **provide written comments to the FTO**. Any written comments provided in this timeframe, will be posted to the FTO's OASIS linked from the TP's website within **one week** from receipt of such written comment(s)

KEY DATES

Year 1 Year 2

6) **By August 1**, after consideration of all proposed draft ZPC and written comments related to any proposed draft ZPC, **the FTO shall post a final draft ZPC** to the FTO's OASIS linked from the Transmission Provider's website

7) After the final draft ZPC has been posted, interested parties within that Zone will have **thirty (30) days** to **provide written comments** to the FTO that will be posted to the FTO's OASIS linked from the Transmission Provider's website within one week from receipt of such written comment(s)

- By October 1, the FTO shall coordinate with TOs and TCs that receive Long-Term Service to serve load in that Zone to determine a date and time for the open meeting and shall post a notice of the open meeting, where development or revision of ZPC shall be discussed, on the FTO's OASIS linked from the Transmission Provider's website

8) FTO shall **host the open meeting** **before March 1** of the following year

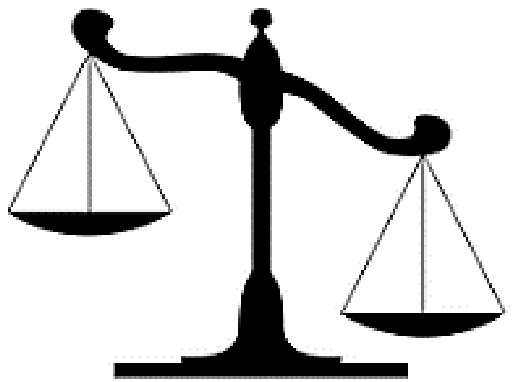
TWO-STEP VOTING

Voting Step 1: Load-Weighted Vote

- **Who:** All TCs receiving Point-to-Point or NITS Long-Term Service to serve load in that Zone based on the summation of the coincident peak load of each of the 12 months of the prior calendar year in that Zone
- **Passing Percentage Required:** The passing percentage is **greater than or equal to the largest load in the Zone plus one-half of the remainder of the load in the Zone**

Example: Largest TC owns 55% of the load

$$Passing\ Vote = 77.5\% = 55\% + \frac{(100\% - 55\%)}{2}$$



TWO-STEP VOTING

Voting Step 1: Load-Weighted Vote

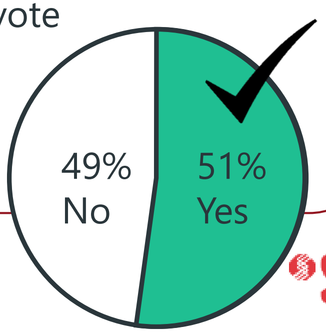
- **Who:** All TCs receiving Point to Point or NITS Long-Term Service to serve load in that Zone based on the summation of the coincident peak load of each of the 12 months of the prior calendar year in that Zone
- **Passing Percentage Required:** The passing percentage is **greater than or equal to the largest load in the Zone plus one-half of the remainder of the load in the Zone**

Example: Largest TC owns 55% of the load

$$Passing\ Vote = 77.5\% = 55\% + \frac{(100\% - 55\%)}{2}$$

Voting Step 2: 50% Approval

- **Who:** TOs and TCs that receive Long-Term Service to serve load within that Zone
  - Entities that are both a TO and TC will be allowed one vote
- **Passing Percentage Required:** **>50%**



KEY DATES

Year 1 | Year 2

9. **By March 1 of the following year**, the FTO shall **send the TP minutes and a report** from the ZPC meeting(s)

10. **By March 15 of the following year,** if a TO or TC that receives Long-Term Service to serve load within that Zone wishes to challenge the results of the ZPC vote, the TO or TC that receives Long-Term Service to serve load within that Zone may **submit to the TP a dispute of the voting tabulation** that approved the ZPC

- Disputes should be submitted through the SPP RMS
  - Request Template: Submit Information
  - Subtype 1: Integrated Transmission Planning (ITP)
  - Subtype 2: ZPC Vote Tabulation Dispute

KEY DATES- DISPUTING THE VOTE TABULATION

- A designated senior representative of the TP and a senior representative of the FTO shall determine a resolution on an informal basis as promptly as practicable
- If the TP and the FTO find that the disputed voting tabulation was in error and would have resulted in the voting process
  - failing instead of passing, the ZPC would revert to the most recently approved ZPC or if no ZPC has been approved, then the Transmission Provider's Planning Criteria shall be used
  - passing instead of failing, the ZPC voted on shall be used
- Nothing in this section shall restrict the rights of any party to file a Complaint with FERC under relevant provisions of the Federal Power Act

KEY DATES

Year 1 Year 2

11. **By April 1 of the following year**, the FTO will **provide the approved ZPC to the TP**, the TOs, and TCs that receive Long-Term Service to serve load within that Zone for incorporation into the TP's Transmission Planning Process

12. **In August of the following year**, the TP will issue the Annual Data Request, including criteria for NUC-001

SUMMARY OF ZPC IMPLEMENTATION

1

LPC is replaced by ZPC
On June 28, 2022, RR 477 established ZPC

2

ZPC creates uniform criteria
ZRUs will be driven by violations of the ZPC and the cost will be allocated to all load in the Zone

3

First ZPC inclusion: 2025 ITP
By beginning in January 2023, ZPC can be included in the 2025 ITP

APPENDIX

WHAT IF THE ZONE DOESN'T APPROVE ZPC?

- If no set of approved ZPC is provided by the FTO by April 1, then the TP would use the most recently approved ZPC provided to it for that Zone, or, if no ZPC has been approved, then **only the TP's Planning Criteria** shall be used
  - The TO's previously submitted LPC will <u>not</u> be defaulted to

HOW ARE ZONAL RELIABILITY UPGRADES FUNDED?

HOW ARE ZONAL RELIABILITY UPGRADES FUNDED?

- Section 1, Definitions:
  - Zonal Reliability Upgrades: Those upgrades included in and constructed pursuant to the SPP Transmission Expansion Plan in order to ensure the reliability of the Transmission System identified because of application of a TO's company-specific ZPC. ZPC for Zone 10 shall be subject to Attachment AD of the Tariff
- Attachment O, Section III, e)
  - In accordance with Section II.5 of this Attachment O, the Transmission Provider shall review, and include as appropriate, all Zonal Reliability Upgrades as proposed by the Transmission Owners to meet Zonal Planning Criteria, including such plans developed by Transmission Owners that have their own FERC approved local planning process, to ensure coordination of the projects set forth in such plans with the potential solutions developed in the regional planning process.

OATT ATTACHMENT J SECTION V

D. Zonal Reliability Upgrades

1. The cost of Zonal Reliability Upgrades (i) included in the 2005 SPP Transmission Expansion Plan and (ii) placed in service prior to January 1, 2008, shall be allocated in accordance with Section III to this Attachment
2. The cost of all other Zonal Reliability Upgrades shall be includable in the applicable Zonal Annual Transmission Revenue Requirement

OATT SCHEDULE 7
THE ZONES ARE AS FOLLOWS:

- Zone 1:American Electric Power – West
- Zone 2:Kansas City Board of Public Utilities
- Zone 3:City Utilities of Springfield, Missouri
- Zone 4:Empire District Electric Company
- Zone 5:Grand River Dam Authority
- Zone 6:Evergy Metro, Inc.
- Zone 7:Oklahoma Gas & Electric Company
- Zone 8:Midwest Energy, Inc.
- Zone 9:Evergy Missouri West, Inc.
- Zone 10:Southwestern Power Administration
- Zone 11:Southwestern Public Service
- Zone 12:Sunflower Electric Power Corporation
- Zone 13:Western Farmers Electric Cooperative
- Zone 14:Evergy Kansas Central, Inc. (Evergy Kansas South, Inc. and Evergy Kansas Central, Inc.)
- Zone 15:Reserved for Future Use
- Zone 16:Lincoln Electric System
- Zone 17:Nebraska Public Power District
- Zone 18:Omaha Public Power District
- Zone 19:Upper Missouri Zone

Appendix C

2022 ITP Assessment Report
(Southwest Power Pool)

2022 INTEGRATED TRANSMISSION PLANNING ASSESSMENT REPORT

SPP Engineering
Version 1.0
Published December 9, 2022

SPP Southwest Power Pool

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
09/21/2022 v0.1	SPP	Draft Report	Posted for TWG/ESWG stakeholder review
09/28/2022 v.0.2	SPP	Updated based upon feedback	Approved by TWG/ESWG
10/10/2022 v0.2	SPP	Final Report	Approved by MOPC
10/25/2022 v0.2	SPP	Final Repot	Approved by Board
12/09/2022 v1.0	SPP	Final Report	Posted approved final report to SPP.org

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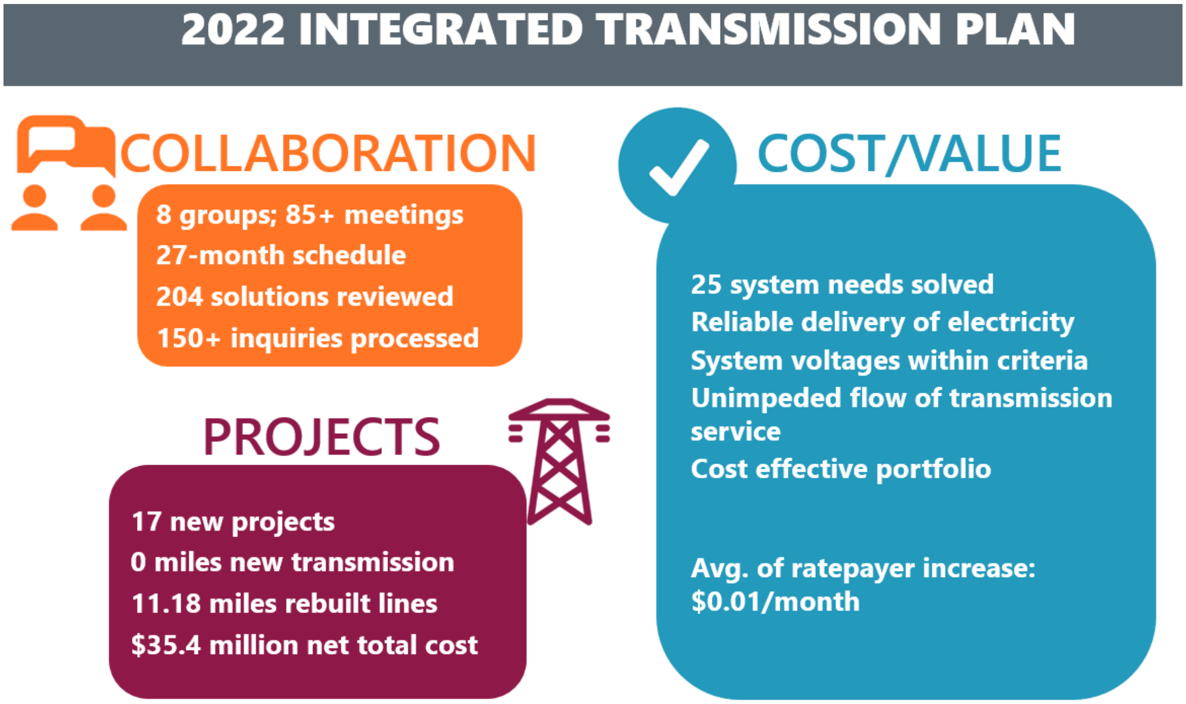
FIGURES

TABLES

EXECUTIVE SUMMARY



SPP's annual Integrated Transmission Planning (ITP) assessment delivers a recommended transmission plan to strengthen and expand the bulk power system while lowering the cost of electricity to end users. The 2022 ITP assessment is different from the three previous ITP assessments completed since SPP's stakeholders and staff revamped the process. Instead of a comprehensive assessment that considers solutions to address reliability, economic, policy, and operational issues on the system, the 2022 ITP assessment is focused exclusively on reliability of the system.

The 2022 ITP Scope was originally developed as a traditional ITP assessment, however multiple set-backs, including the late completion of the 2021 ITP assessment, required SPP staff and stakeholders to develop mitigations that could put the cyclical ITP process back on schedule. Paramount to this effort was the removal of the economic, policy, and operational assessments from the 2022 ITP assessment scope.

Consistent with the reduced scope of work, the cost of the recommended transmission plan is significantly lower than recent ITP assessments. The 2022 ITP assessment also identified fewer reliability needs that can be attributed to two distinct drivers: relatively stagnant load growth and a change to wind dispatch methodology.

The 2022 ITP assessment resembles the ITP near-term (ITPNT) assessments completed in 2017 and 2018 when comparing load forecast projections on a regional level. Figure 0.1 below shows a comparison of reliability-driven transmission investment for reliability needs over multiple assessment cycles, where load forecasts project growth followed by stagnant or reduced load forecast projections. Prior ITPNT assessments in 2015 and 2016 observed significant investment[1] accompanying periods of load forecast growth, followed by an investment reduction as load forecasts reduced for the region. Regional load forecasts in the 2022 ITP have declined from 2020 and 2021 levels, consistent with the reduction in proposed transmission investment needed to address reliability issues.

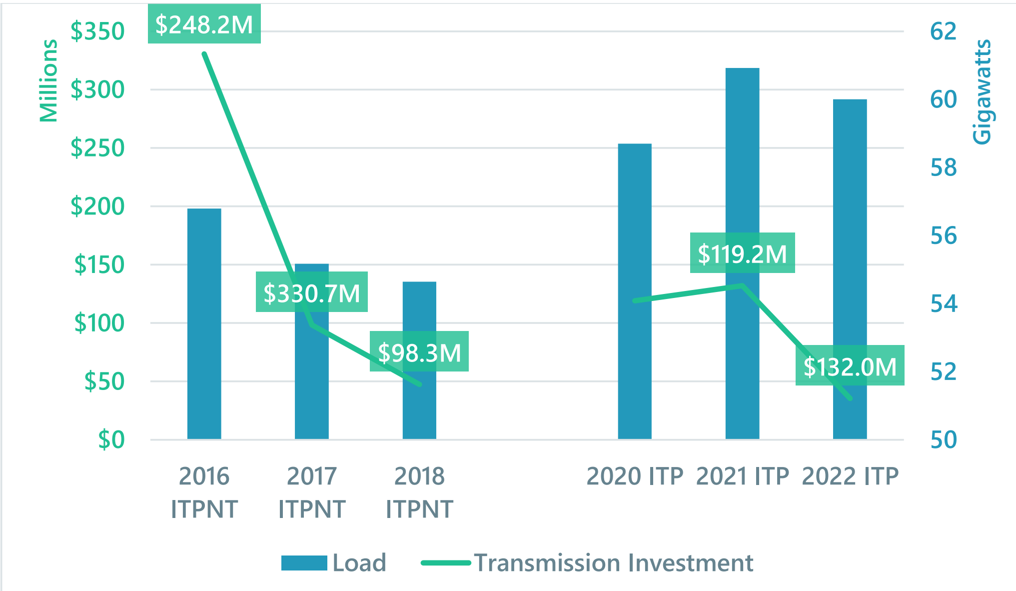


Figure 0.1: Comparison of reliability-driven transmission investment

Along with the reduced scope and stymied regional load growth projections, SPP is also observing limited need for transmission investment in the 2022 ITP due to wind dispatch methodology adjustments concurrent with the revamped ITP process. Prior to the 2019 ITP, SPP created two unique dispatch scenarios as a way to stress the transmission system and find its weak points. Scenario 0 (S0) modeled wind with long-term firm transmission service at expected usage levels, while Scenario (5) modeled wind with long-term firm transmission service at granted service levels. These two scenarios resulted in major differences in system power flows. Projects could be driven by, recommended, and built based upon an overload or voltage violation identified in one scenario. When this occurred, it was usually attributed to wind dispatch.

As SPP moved forward into its current wind dispatch methodology, the S0 and S5 cases were discarded for an alternative methodology that considers historical wind generation output during summer peak hours over the previous 5 years[2]. This new approach resulted in a shift in the amount of wind dispatched in SPP's reliability powerflow models. Instead of modeling wind at an extreme low value or high value, wind dispatch amounts reflect typical output. Figure 0.2 below compares the resulting wind generation dispatch of the previous and current methodologies. With the wind dispatch

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[1] 2016 ITPNT included significant investment ($140+M) in the Upper Missouri Zone area upon joining in 2015. Investment in that area did not occur in the 2015 ITPNT.
[2] Wind dispatch methodology for the ITP process is found in section 2.1.2 of the ITP Manual

methodology utilized today, wind is less likely to drive the need for a reliability project. This becomes clearer when recognizing this wind dispatch methodology has been utilized for four assessment cycles and new long-term firm service requests for wind resources are not common.

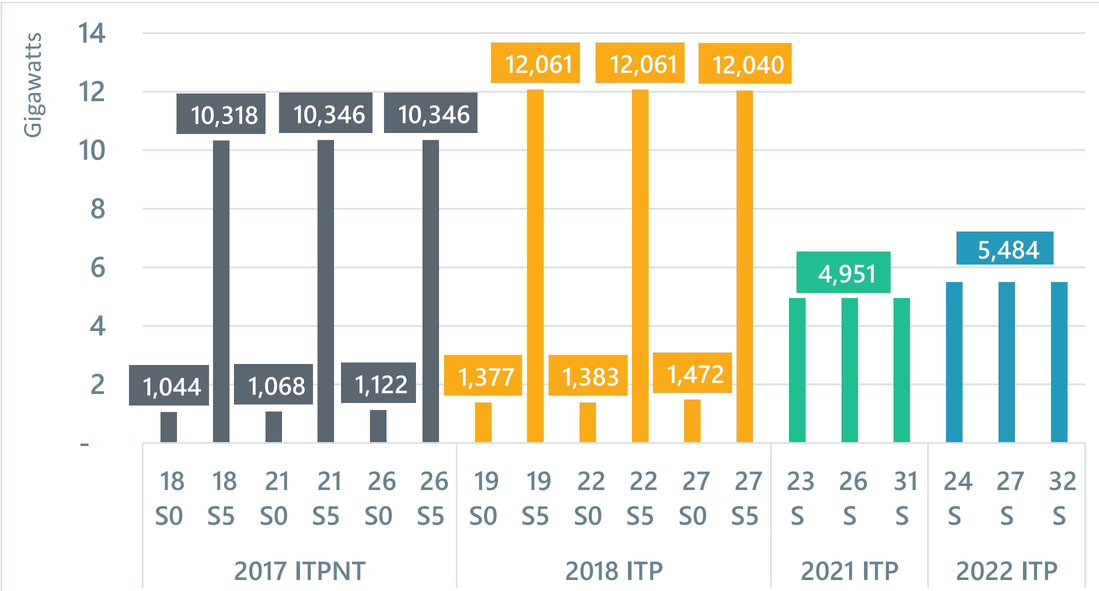

Figure 0.2: Wind dispatch comparison between ITP Assessments

The 2022 ITP recommended transmission plan includes 17 projects that address 25 unique reliability issues, totaling $35.4M in engineering and construction costs. These projects will enable SPP to meet its regional compliance requirements and keep the lights on through loading relief, voltage support, and system protection. Although persistent operational needs were not considered in the 2022 ITP, terminal upgrades at Fargo 230 kV are expected to resolve some or all of the historical congestion associated with an operational flowgate for Fargo-Sheyenne for the loss of Buffalo-Jamestown.

The 2022 ITP includes the following projects:

PROJECT	AREA	TYPE	E & C COST[3]	MILES	NTC/ NTC-C
36th & Lewis-52nd & Delaware Tap 138 kV rebuild	AEP	R	$ 5,491,941	.97	NTC
Craig 345 kV redundant relay	EM	R	$ 200,000		NTC
Eagle-J1 Center 69 kV rebuild	NIPCO	R	$ 1,644,058	3.84	NTC
Fargo 230 kV terminal equipment	WAPA	R	$ 2,406,249		NTC

[3] These costs represent engineering and construction (E&C) costs developed during the study period. Those costs were developed by SPP stakeholders or its third-party cost estimator unless noted with an asterisk. Cost estimates with an asterisk (*) are based upon SPP's conceptual cost estimation process using historical information to develop a -50%/+100% cost estimate.

PROJECT	AREA	TYPE	E & C COST[3]	MILES	NTC/ NTC-C
Kerr-Maid 161 kV double-circuit rebuild	GRDA	R	$ 10,924,000	5.6	No
Lea Road 115 kV 28.8 MVAR capacitor bank	SPS	R	$ 5,009,320		NTC
Siloam Springs and Siloam Springs City 161 kV terminal equipment	AEP/GRDA	R	$ 1,022,030		NTC
Utica Junction 115 kV replace CT	WAPA	R	$ 383,947*		NTC
Westmoore - Westmoore Tap 138 kV circuit 1 rebuild	OGE	R	$ 2,400,000	0.77	No
Cherry Creek 138 kV breaker	OGE	R	$ 462,388*		NTC
Dadeville 161 kV breaker	EDE	R	$ 714,104		NTC
Indian Hill 138 kV breaker	OGE	R	$ 462,388*		NTC
Joplin 69 kV breaker	EDE	R	$ 1,719,120		NTC
Lubbock South 115 kV breaker	SPS	R	$ 467,987		NTC
Ozark Dam 161 kV breaker	EDE	R	$ 714,104		NTC
Turner 138 kV breaker	OGE	R	$ 462,388*		NTC
West Oak 138 kV two breakers	OGE	R	$ 924,776*		NTC
		Total	**$35,408,800**		

Table 0.1: 2022 ITP Consolidated Portfolio

Figure 0.3 depicts the 2022 ITP thermal/voltage reliability projects:

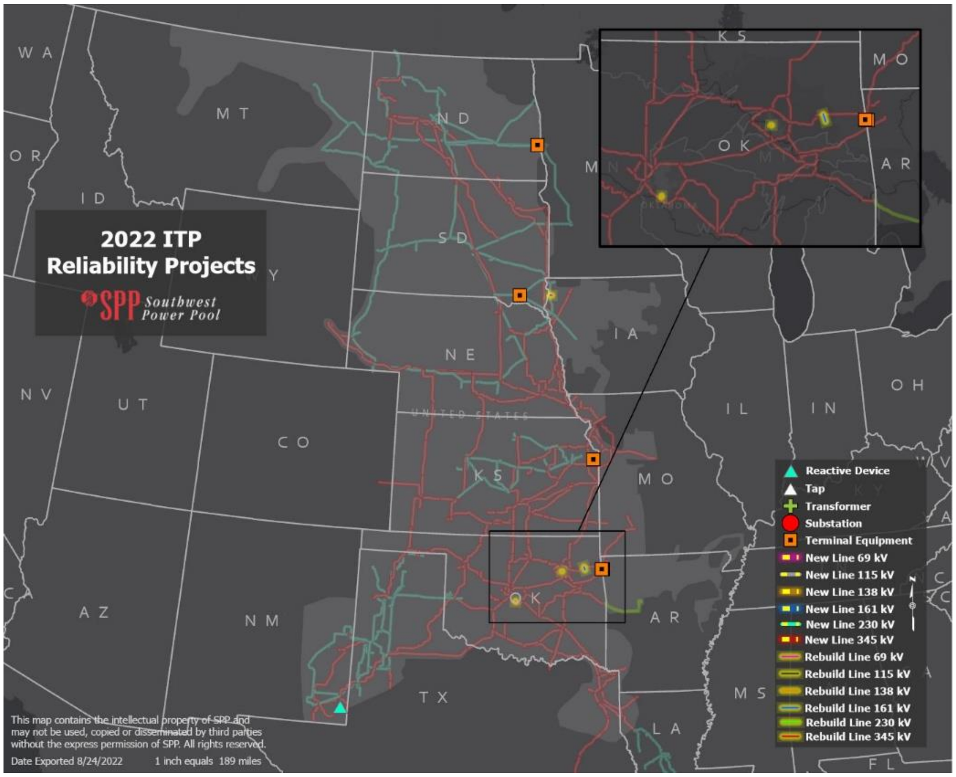

Figure 0.3: 2022 ITP Thermal and Voltage Reliability Projects

Figure 0.4 depicts the 2022 ITP short circuit reliability projects:

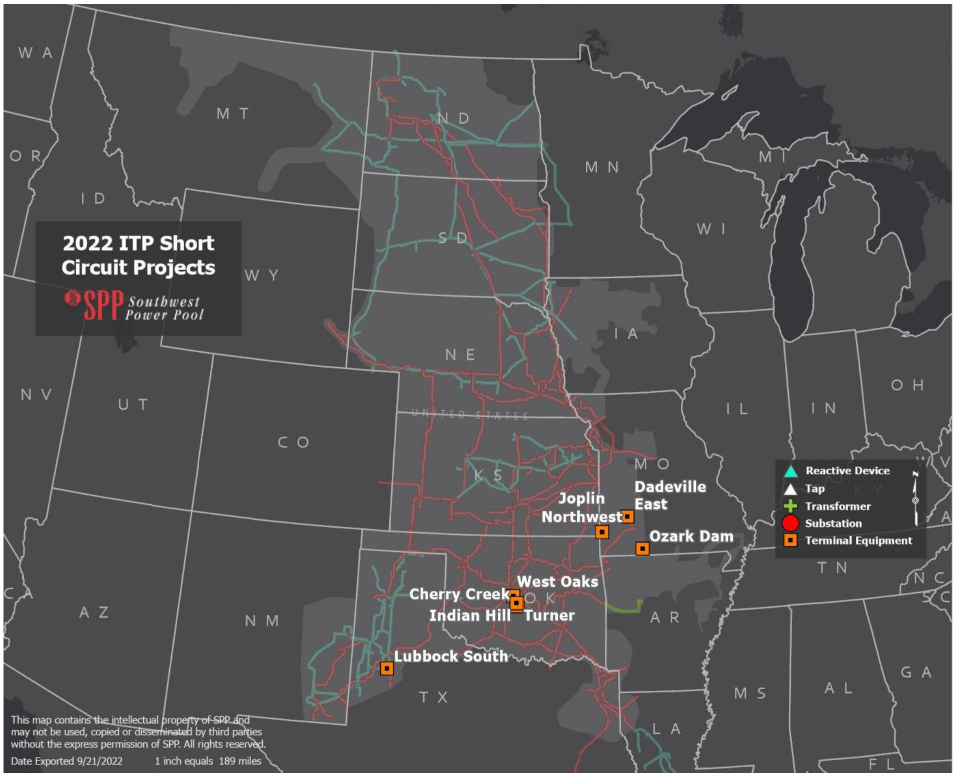

Figure 0.4: 2022 ITP Short Circuit Reliability Projects

SPP makes recommendations for projects included in the consolidated portfolio based on results from the staging process and SPP Business Practice 7060. If financial expenditure is required within four years from board approval, the project is recommended for an NTC or NTC with conditions.

1 INTRODUCTION

1.1 THE ITP ASSESSMENT

The SPP Integrated Transmission Planning (ITP) process promotes transmission investment to meet near- and long-term reliability, economic, public policy and operational transmission needs. The ITP process coordinates solutions with ongoing compliance, local planning, interregional planning and tariff service processes. The goal is to develop a 10-year regional transmission plan that provides reliable and economic energy delivery and achieves public policy objectives, while maximizing benefits to the end-use customers. The 2022 ITP is guided by requirements defined in Attachment O to the SPP Open Access Transmission Tariff (Tariff),[4] the ITP Manual,[5] and the 2022 ITP scope.[6] Per the ITP rebaseline effort approved by the Transmission Working Group (TWG), Economic Studies Working Group (ESWG), and the Markets and Operations Policy Committee (MOPC), the 2022 ITP is a reliability-only assessment.

The ITP process is open and transparent, allowing for stakeholder input throughout the assessment. Study results are coordinated with other entities, including those embedded within the SPP footprint and neighboring first-tier entities.

The objectives of the ITP are to:

- Resolve reliability criteria violations
- Improve access to markets
- Improve interconnections with SPP neighbors
- Meet expected load-growth demands
- Facilitate or respond to expected facility retirements
- Synergize with the Generator Interconnection (GI), Aggregate Transmission Service Studies (ATSS), and Delivery Point Addition (DPA) processes
- Address persistent operational issues as defined in the scope

4 SPP Tariff viewer
5 ITP Manual version 2.11; the ITP assessment follows the current ITP Manual and versions may differ throughout the study process. The version that was current at the time of the study was used.
6 2022 ITP Scope; presents the scope and schedule of work for the 2022 ITP.

- Facilitate continuity in the overall transmission expansion plan
- Facilitate a cost-effective, responsive and flexible transmission network.

1.2 REPORT STRUCTURE

This report describes the 2022 ITP assessment of the SPP transmission system over a 10-year horizon, focusing on years 2024, 2027 and 2032. SPP evaluated these years under a baseline reliability scenario. The Model Development and Benchmarking section 2 summarizes modeling inputs and address the concepts behind this study's approach, key procedural steps in analysis development, and overarching study assumptions. The Needs Assessment, Portfolio Development and Project Selection (section 3) addresses specific results, describes projects that merit consideration, and contains portfolio recommendations.

Any reference to the SPP footprint refers to the Balancing Authority Area, as defined in the Tariff, whose transmission facilities are under the functional control of the SPP regional transmission organization (RTO), unless otherwise noted.

The study was guided by the 2022 ITP Scope and ITP Manual. All reports and documents referenced in this report are available on the SPP website.[7]

Both SPP's staff and stakeholders frequently exchange proprietary information in the course of any study, and such information is used extensively for ITP assessments. This report does not contain confidential marketing data, pricing information, marketing strategies, or other data considered not acceptable for release into the public domain. This report does disclose planning and operational matters, including the outcome of certain contingencies, operating transfer capabilities, and plans for new facilities that are considered non-sensitive data.

1.3 STAKEHOLDER COLLABORATION

Stakeholders developed the 2022 ITP assumptions and procedures in meetings throughout 2020, 2021, and 2022. Members, liaison members, industry specialists and consultants discussed the assumptions and facilitated a thorough evaluation.

The following SPP organizational groups were involved:

- Transmission Working Group (TWG)
- Economic Studies Working Group (ESWG)
- Model Development Advisory Group (MDAG)
- Cost Allocation Working Group (CAWG)
- Project Cost Working Group (PCWG)
- Markets and Operations Policy Committee (MOPC)
- Strategic Planning Committee (SPC)

[7] 2022 ITP Scope and ITP Manual version 2.11

- Regional State Committee (RSC)
- Board of directors (board)

SPP staff served as facilitators for these groups and worked closely with stakeholders to ensure all views were heard and considered, consistent with the SPP value proposition.

These working groups tendered policy-level considerations to the appropriate organizational groups, including the MOPC and SPC. Stakeholder feedback was instrumental in the refinement of the 2022 ITP.

1.3.1 PLANNING SUMMITS

In addition to the standard working group meetings and in accordance with Attachment O of the Tariff, SPP held a planning summit in July 2022 to elicit further input and provide stakeholders with additional opportunities to participate in the process of discussing and addressing planning topics.[8]

1.4 ITP REBASELINE

Multiple issues and the late completion of the 2021 ITP assessment, led SPP to request a schedule rebaseline for the ITP studies. In April 2022, the ESWG, TWG, and MOPC approved the ITP rebaseline recommendation, allowing staff to perform a 2022 ITP reliability-only assessment. Doing so required a waiver to perform a reliability-only assessment and to not use the market powerflow models (MPMs).

[8] The 2022 Engineering Planning Summit was held on the afternoon of Wednesday, July 20, 2022, and the morning of Thursday, July 21, 2022 (Planning Summit)

2 MODEL DEVELOPMENT & BENCHMARKING

2.1 BASE RELIABILITY MODEL DEVELOPMENT

2.1.1 GENERATION AND LOAD

Generation and load data in the 2022 ITP base reliability models was incorporated based on specifications documented in the ITP Manual. For items not specified in the ITP Manual, SPP followed the SPP Model Development Procedure Manual.[9] Renewable dispatch amounts are based on historical averages for resources with long-term firm transmission service for the summer and winter seasons. For the light load models, all wind resources with long-term firm transmission service were dispatched to the lesser of the full long-term firm transmission service amount or nameplate amount, with remaining generation coming from conventional resources. In these base reliability models, all entities are required to meet their non-coincident peak demand with firm resources.

The Powerflow Model Benchmarking section 2.2 details the generation dispatch and load in the base reliability models.

2.1.2 TOPOLOGY

Topology data in the 2022 ITP base reliability models was incorporated in accordance with the ITP Manual. For items not specified in the ITP Manual, SPP followed the SPP Model Development Procedure Manual. The topology for areas external to SPP was consistent with the 2020 Eastern Interconnection Reliability Assessment Group Multi-regional Modeling Working Group (MMWG) model series.

2.1.3 SHORT-CIRCUIT MODEL

A short-circuit model representative of the year two summer peak was developed for short-circuit analysis. This short-circuit model has all modeled generation and transmission equipment in service to simulate the maximum available fault current, excluding exceptions such as normally open lines or retired generation. SPP analyzed this model in consideration of the North American Electric Reliability Corporation (NERC) TPL-001 standard.[10]

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[9] Model Development Advisory Group (MDAG) Model Development Procedure Manual; the MDAG Model Development Procedure Manual may differ throughout the study process. The version that was current at the time of the study was used.
[10] NERC Standard TPL-001-4 - Transmission System Planning Performance Requirements

2.2 POWERFLOW MODEL BENCHMARKING

SPP staff performed two benchmarks related to the 2022 ITP base reliability powerflow models. The first benchmark was a load and generation value comparison between the 2021 ITP and 2022 ITP base reliability powerflow models. The second benchmark was a load and generation value comparison between the 2022 ITP base reliability powerflow models and real-time operational data. Model comparisons were conducted to verify the accuracy of the powerflow model data, including:

- Comparison of the summer and winter peak base reliability model load totals (2021 ITP versus 2022 ITP), as shown in Figure 2.1 and Figure 2.2.

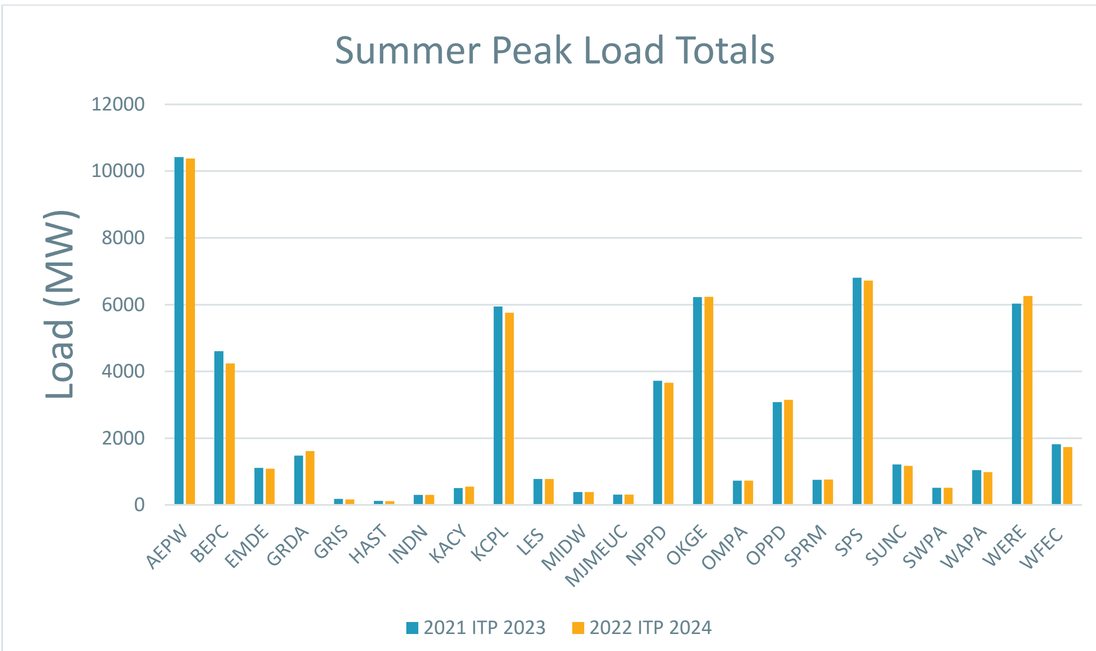

Figure 2.1: Summer Peak Year two Load Totals Comparison

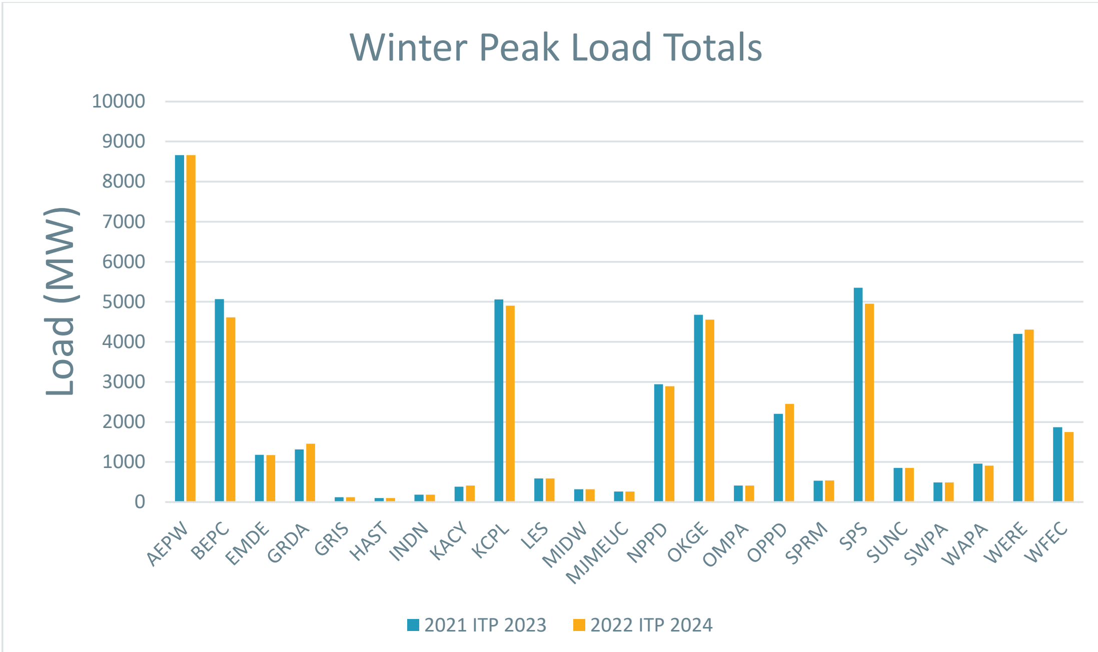

Figure 2.2: Winter Peak Year two Load Totals Comparison

- Comparison of the summer and winter peak base reliability model generation dispatch totals for years two, five and 10 (2021 ITP versus 2022 ITP), as shown in Figure 2.3 and Figure 2.4.

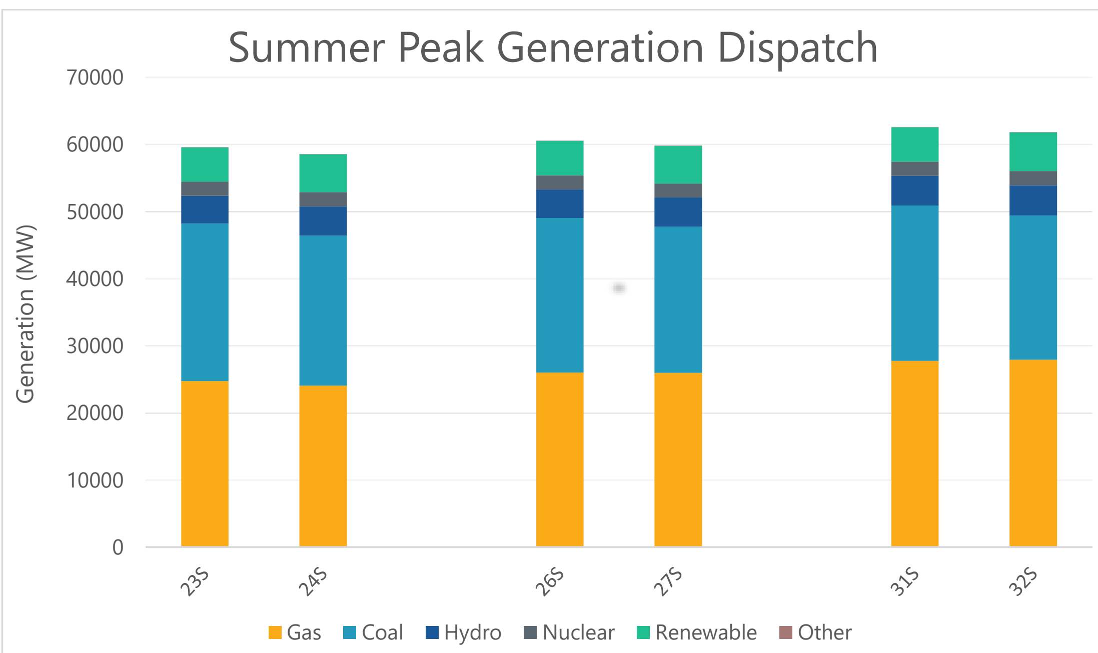

Figure 2.3: Summer Peak (MW) Years two, five and 10 Generation Dispatch Comparison

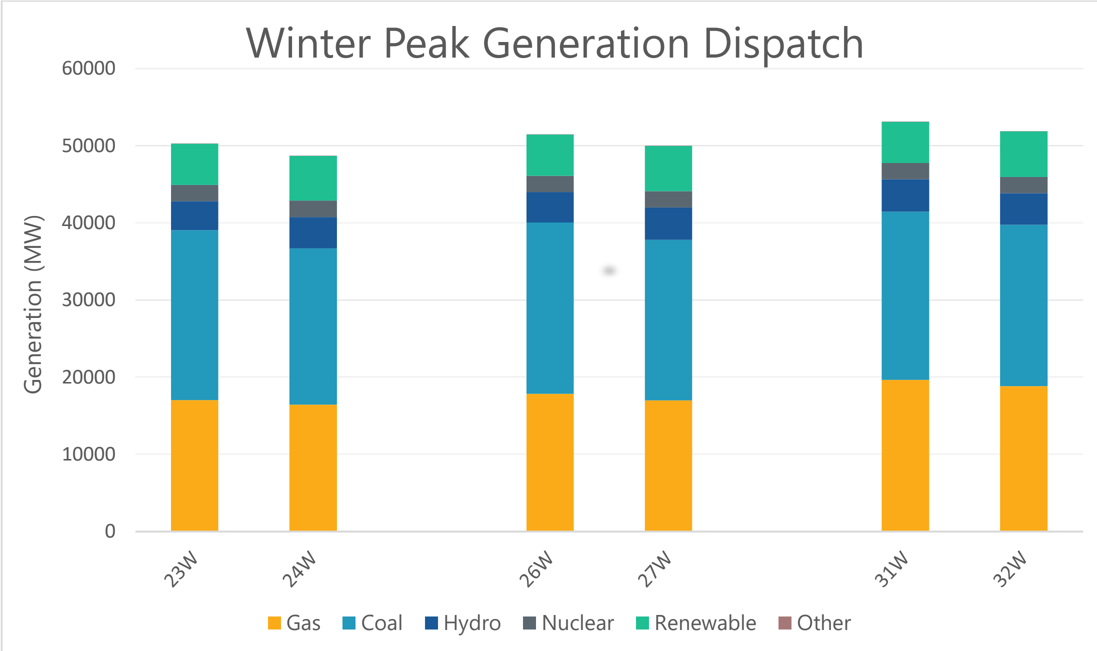

Figure 2.4: Winter Peak (MW) Years two, five and 10 Generation Dispatch Comparison

- Additionally, the year-10 summer and winter peak generator retirements in the 2022 ITP base reliability powerflow models are shown in Figure 2.5.

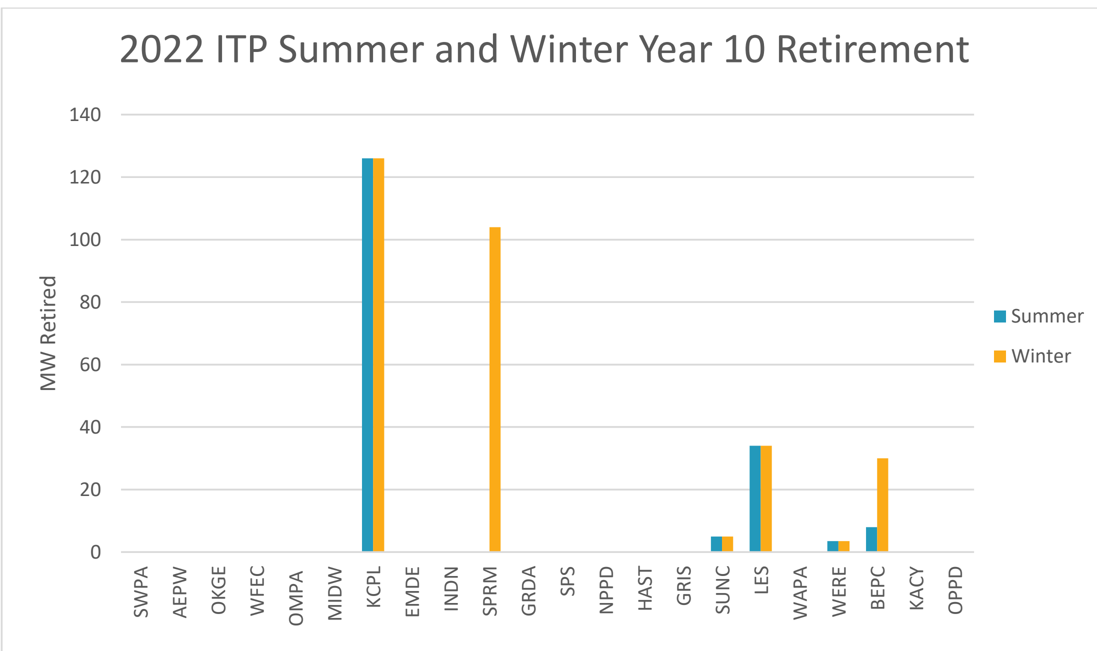

Figure 2.5: 2022 ITP Summer and Winter Year 10 Retirement

Operational model benchmarking for this assessment compared the 2022 summer and winter peak Base Reliability powerflow models against the real-time operational data for the 2021-2022 winter and 2022 summer timeframe. Model comparisons were conducted to verify the accuracy of the powerflow model data, including:

- Comparison of the 2022 summer and winter load totals (base reliability model versus real-time operational data), as shown in Figure 2.6 and Figure 2.7.

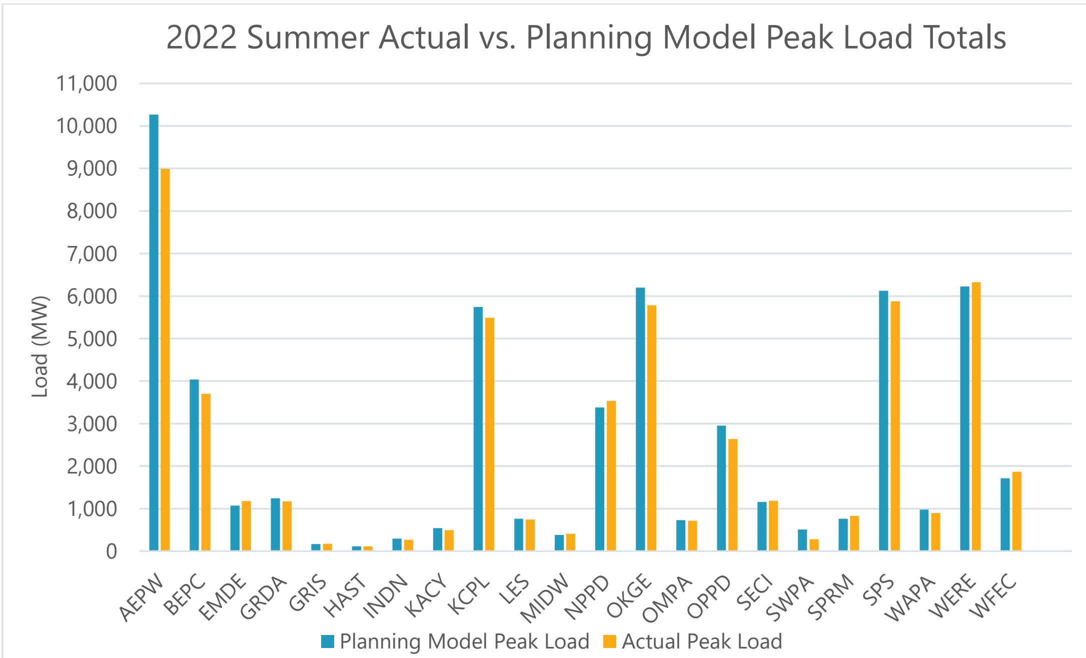

Figure 2.6: 2022 Summer Actual versus Planning Model Peak Load Totals

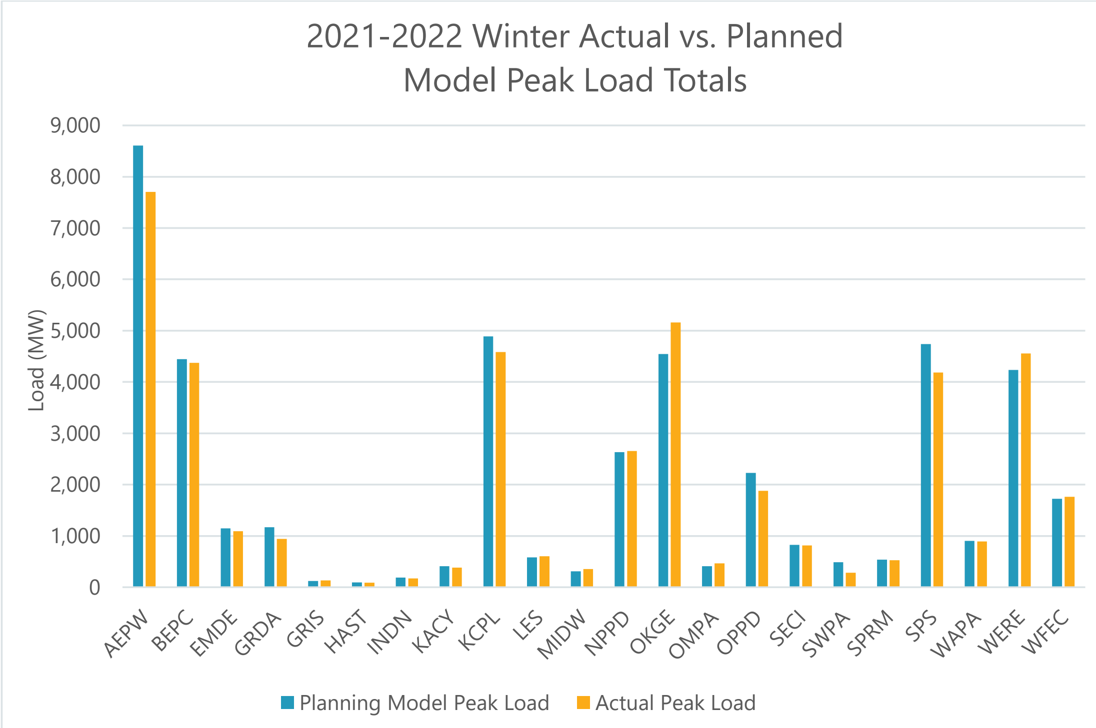

Figure 2.7: 2022 Winter Actual versus Planning Model Peak Load Totals

- Comparison of the 2022 summer and winter generation dispatch totals (base reliability model vs real-time operational data), as shown in Figure 2.8.

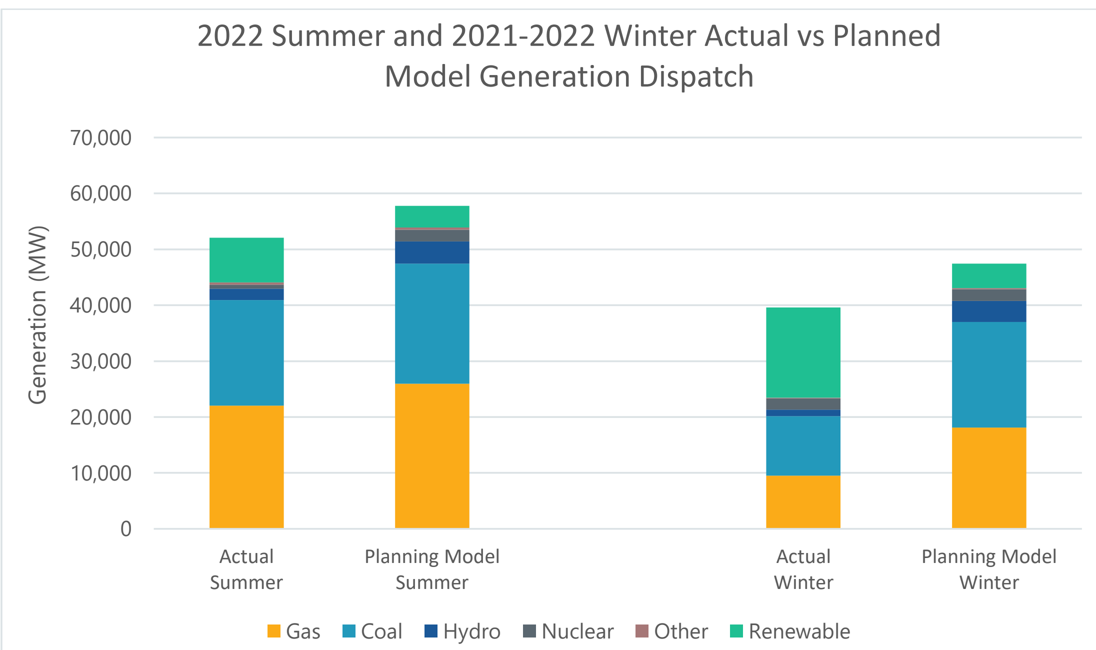

Figure 2.8: 2022 Actual versus Planned Model Generation Dispatch Comparison

3 NEEDS ASSESSMENT, PORTFOLIO DEVELOPMENT AND PROJECT SELECTON

During each ITP assessment, SPP and its member organizations collaborate to develop and analyze the regional transmission system's reliability needs, identify robust solutions and develop a final portfolio.

3.1 RELIABILITY NEEDS

3.1.1 BASE RELIABILITY ASSESSMENT

Contingency analysis for the base reliability models consisted of analyzing P0, P1 and P2.1 planning events from Table 1 in the NERC TPL-001-4 standard,[11] as well as remaining events that do not allow for non-consequential load loss or the interruption of firm transmission service.

In January 2022, the SPP board directed SPP to conduct a further evaluation of the solution to address voltage violations and economic congestion in the 2021 ITP southeast New Mexico target area. As a result, a project to address the needs in the Southwestern Public Service (SPS) area was not approved for inclusion to the 2022 ITP base reliability models. As expected, needs in the SPS area continued into the 2022 ITP. The results of the 2021 ITP further evaluation were presented at the July 2022 MOPC and Board meetings, where the Crossroads-Hobbs-Roadrunner double-circuit 345 kV line was approved. This project was then tested and found to mitigate the needs in the SPS area identified in the 2022 ITP, resulting in no remaining needs related to the 2021 ITP southeast New Mexico target area.

During the needs assessment, potential violations were solved or marked invalid through methods such as reactive device setting adjustments, model updates, and identification of invalid contingencies, non-load-serving buses and facilities not under SPP's functional control. Preliminary violations were posted ahead of the needs assessment to provide Transmission Owners with the opportunity to review the violations and provide invalidation feedback prior to the posting of the needs and opening of the detailed project proposals (DPP) window. Stakeholder feedback improved the quality of the final list of identified needs, helped staff remove invalid needs, and improved the pertinence of DPPs submitted by stakeholders.

[11] NERC Standard TPL-001-4 - Transmission System Planning Performance Requirements

Figure 3.1 and Figure 3.2 summarize the final quantity of thermal and voltage needs[12] that were unable to be mitigated during the screening process and Figure 3.3 and Figure 3.4 shows their locations.

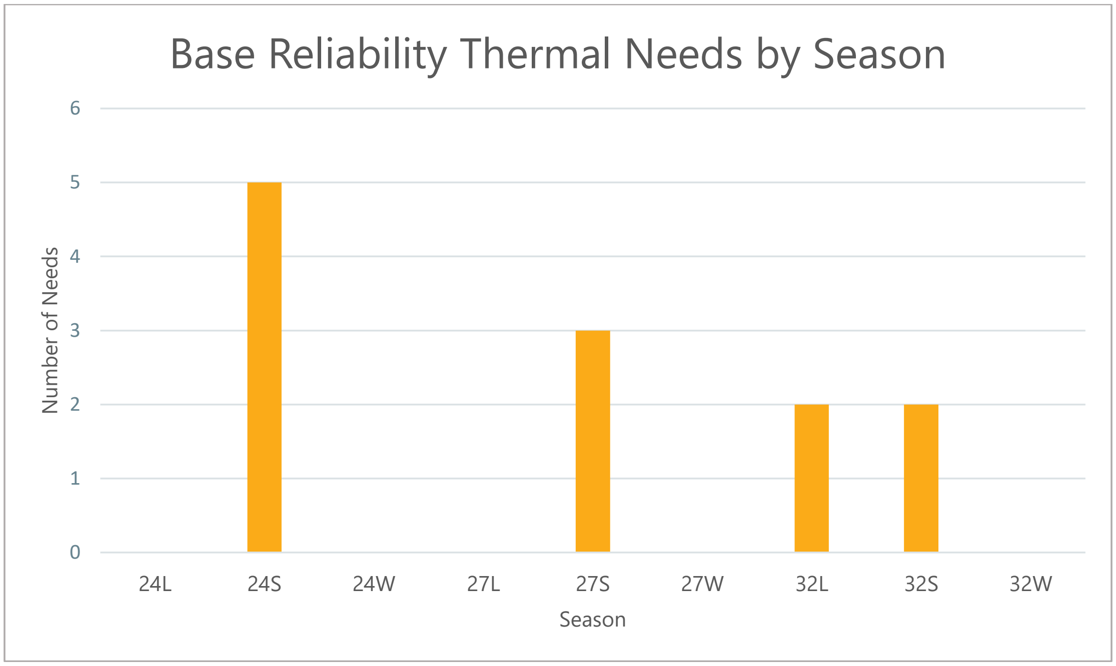

Figure 3.1: Unique Base Reliability Thermal Needs by Season

[12] Figures summarize unique monitored elements.

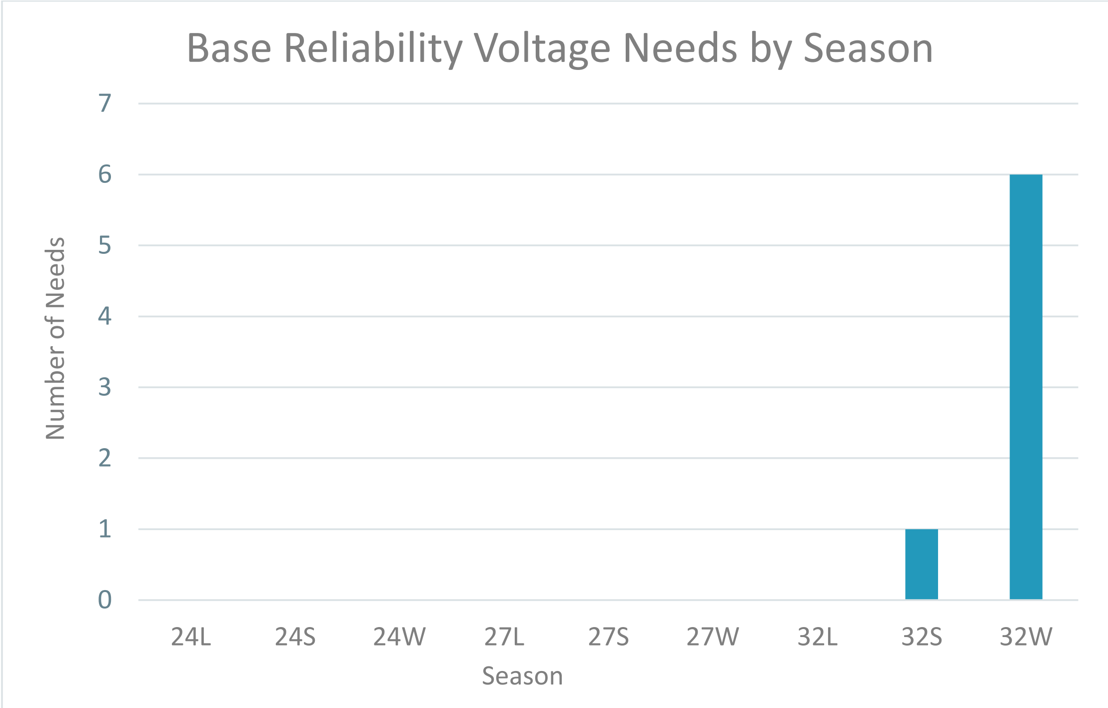

Figure 3.2: Unique Base Reliability Voltage Needs by Season

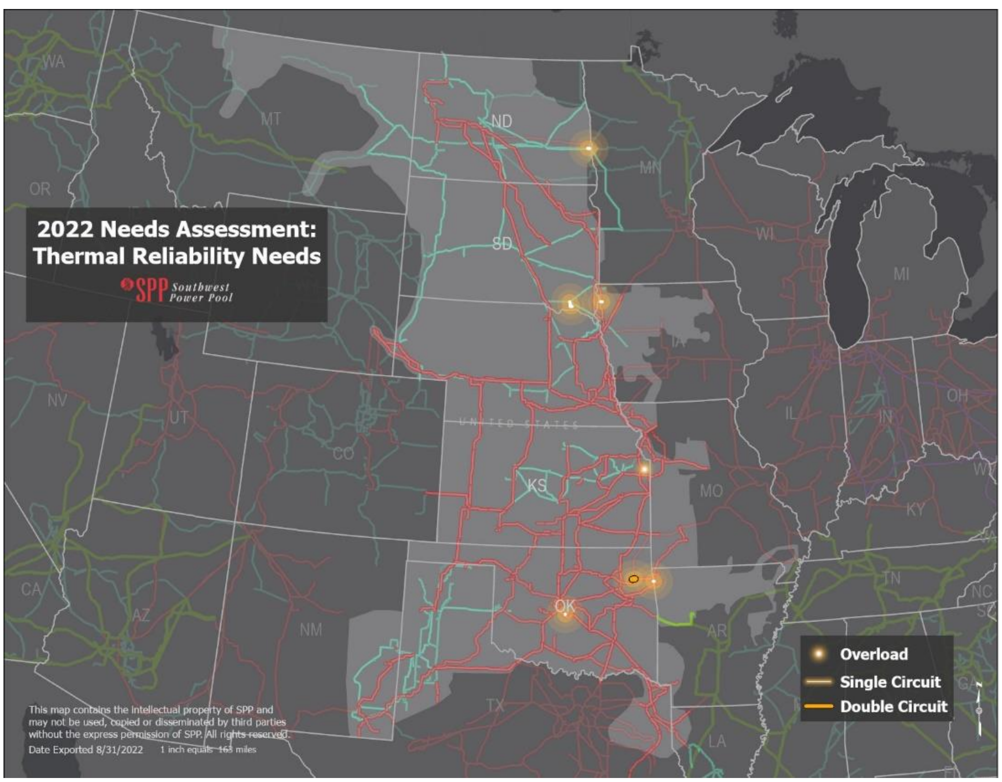

Figure 3.3: Base Reliability Needs-Thermal

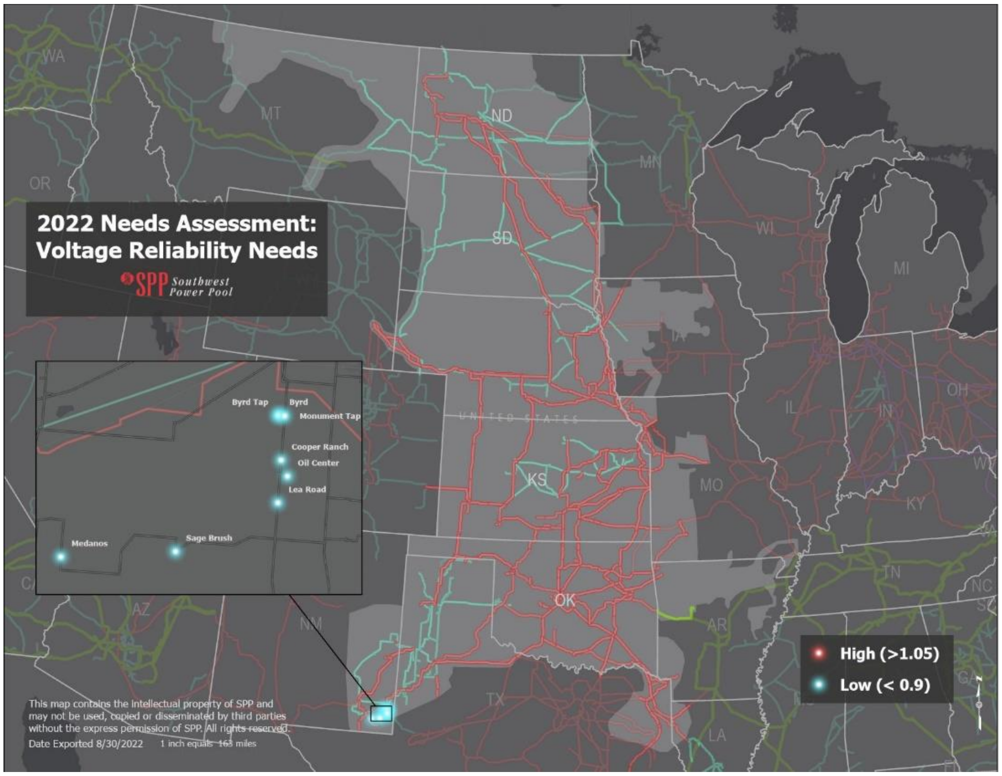

Figure 3.4: Base Reliability Needs-Voltage

MONITORED ELEMENT	MODEL	FROM BUS AREA	TO BUS AREA
SILOAM 5-SILMCTY5 161 kV CKT 1	2022ITPP3a-27S	AEPW	GRDA
KERR GR5-MAID 5 161 kV CKT 2	2022ITPP3a-32L	GRDA	GRDA
KERR GR5-MAID 5 161 kV CKT 1	2022ITPP3a-32L	GRDA	GRDA
WGARDNR5-CEDRCRK5 161 kV CKT 1	2022ITPP3a-32S	KCPL	KCPL
SW134TP4-WESTMOR4 138 kV CKT 1	2022ITPP3a-32S	OKGE	OKGE
EAGLE___-NI8-J1CENTER-NI8 69 kV CKT 1	2022ITPP3a-24S	WAPA	WAPA
UTICAJC7-NAPA JCT 7 115 kV CKT 1	2022ITPP3a-24S	WAPA	WAPA
EAGLE___-NI8-J1CENTER-NI8 69 kV CKT 1	2022ITPP3a-27S	WAPA	WAPA
SHEYNNE4-FARGO 4 230 kV CKT 1	2022ITPP3a-24S	XEL	WAPA

Table 3.1: Most Servere Base Reliability Thermal Needs Sorted by Area and Model

MONITORED ELEMENT	MODEL	AREA
MEDANOS 3 115 kV	2022ITPP3a-32S	SPS
COOPER_RNCH3 115 kV	2022ITPP3a-32W	SPS
OIL_CENTER 3 115 kV	2022ITPP3a-32W	SPS
MONUMNT_TP 3 115 kV	2022ITPP3a-32W	SPS
BYRD_TP 3 115 kV	2022ITPP3a-32W	SPS
BYRD 3 115 kV	2022ITPP3a-32W	SPS
LEA_ROAD 3 115 kV	2022ITPP3a-32W	SPS

Table 3.2: Unique Base Reliability Voltage Needs Sorted by Area and Model

3.1.2 NON-CONVERGED CONTINGENCIES

SPP used engineering judgment to resolve non-converged cases from the contingency analysis. All non-converged cases were resolved either through alternate powerflow solve methodologies, model corrections, or the contingencies were determined to be invalid. No contingencies in scope of the 2022 ITP Assessment were identified as a potential driver for voltage collapse.

3.1.3 SHORT-CIRCUIT ASSESSMENT

SPP provided the total bus fault current study results for single-line-to-ground (SLG) and three-phase faults to the Transmission Planners (TPs) for review.

The TPs were required to evaluate the results and indicate if any fault-interrupting equipment would have its duty ratings exceeded by the maximum available fault current. For equipment that would have its duty ratings exceeded, the TP provided the applicable duty rating of the equipment and the violation was identified as a short-circuit need.

The TPs can perform their own short-circuit analysis to meet the requirements of TPL-001. However, any corrective action plans that result in the recommended issuance of an NTC are based on the SPP short-circuit analysis.

The TPs identifying short-circuit needs were Empire Distric Electric, Oklahoma Gas and Electic Company and Southwestern Public Service. The needs are depicted in Figure 3.5.

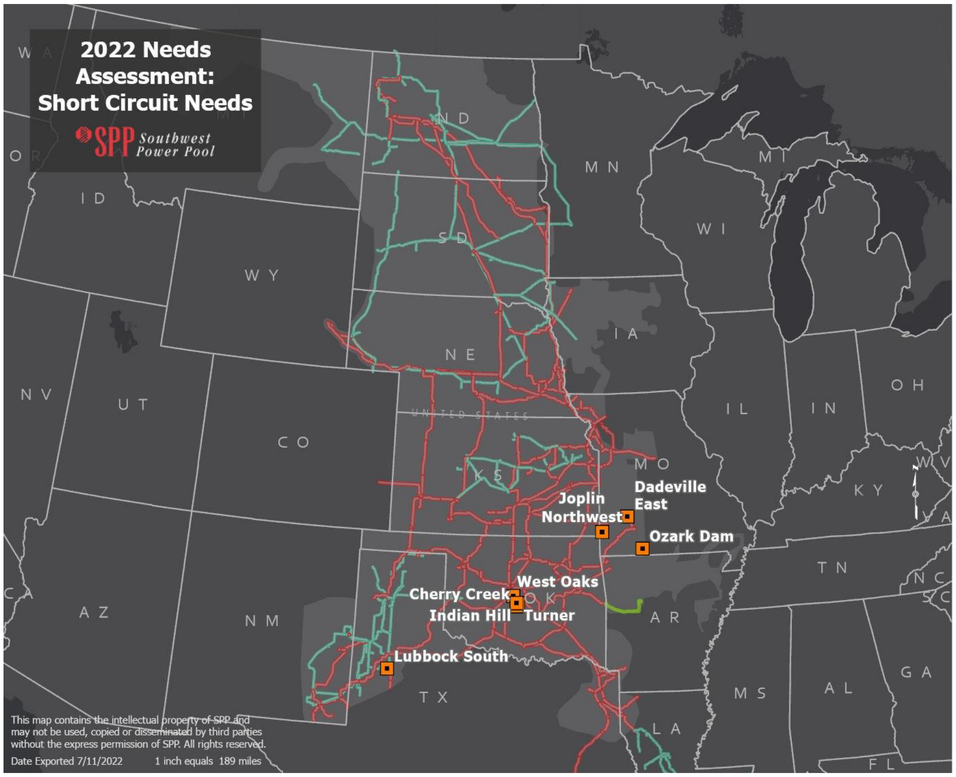

Figure 3.5: Short-Circuit Needs

3.2 SOLUTION EVALUATION, PORTFOLIO DEVELOPMENT, AND PROJECT SELECTION

Solutions were evaluated in each applicable scenario and evaluated to determine their effectiveness in mitigating the needs identified in the needs assessment. The solutions assessed included the Federal Energy Regulatory Commission (FERC) Order 1000 and Order 890 solutions submitted by stakeholders, SPP staff-developed solutions, model adjustments, and model corrections. SPP analyzed 159 DPP solutions received from stakeholders and approximately 45 solutions developed by SPP staff. A standardized conceptual cost[13] template was used to calculate a conceptual cost estimate for each project to utilize during screening.

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[13] SPP OATT Business Practices, Section 8

Reliability Project Screening

Solutions were tested to determine their ability to mitigate reliability criteria violations in the study horizon. Solutions were deemed effective if they resolved system violations to a level allowed by the SPP Planning Criteria and members' more stringent local planning criteria. Figure 3.6 illustrates the reliability project screening process.

Reliability metrics developed by SPP and stakeholders and approved by the TWG were calculated for each project and used as a tool to aid in developing a portfolio of projects to address all reliability needs. The first metric is cost per loading relief (CLR) score, which relates the amount of thermal loading relief a solution provides to its engineering and construction (E&C) cost. The second metric is cost per voltage relief (CVR) score, which relates the amount of voltage support a solution provides to its E&C cost.

Figure 3.6: Portfolio Development Process

Study Cost Estimates and Project Selection

Solutions that performed well using the screening assessments, Solution Development and Evaluation, were sent to the incumbent transmission owner(s) for the development of Study Cost Estimates (SCE).[14] In cases where a study cost estimate was not received, conceptual cost estimates were utilized. Study cost estimates received were used for the remainder of the portfolio development process.

SPP used stakeholder feedback received from ad-hoc and regularly-scheduled working group meetings, the July 2022 SPP transmission planning summit, and SPP's RMS to develop the final 2022 ITP portfolio.

3.2.1 RELIABILITY PROJECT PORTFOLIO

3.2.1.1 *AMERICAN ELECTRIC POWER (AEP)*

36th & Lewis-52nd & Delaware Tap 138 kV Rebuild

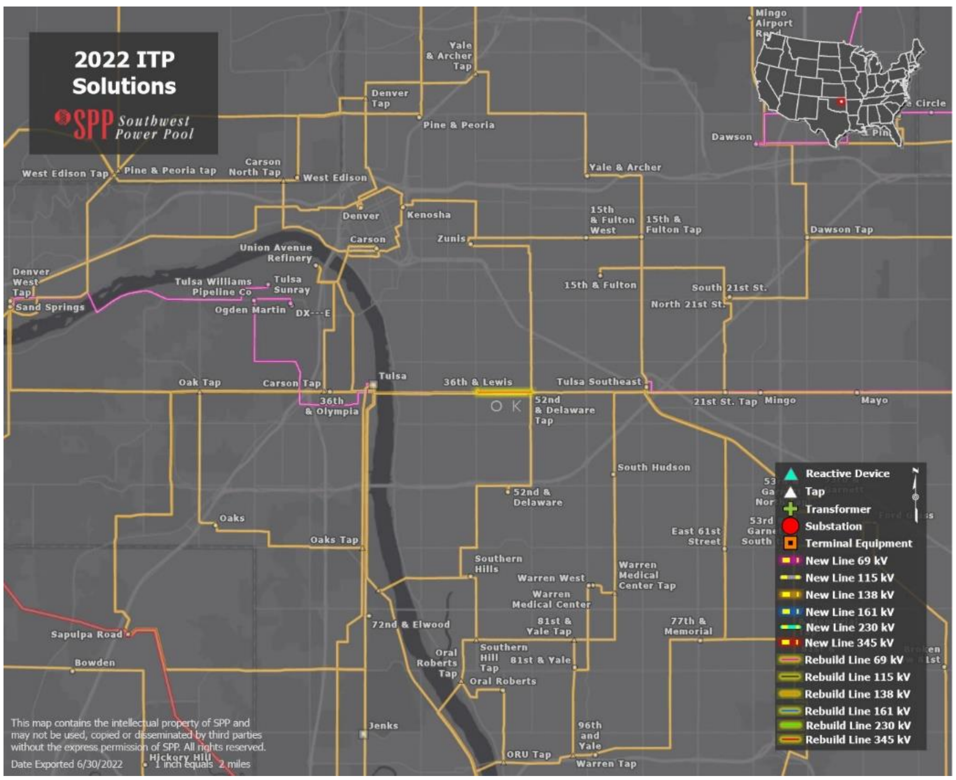

Figure 3.7: 36th & Lewis-52nd & Delaware Tap 138 kV Rebuild

The 36th & Lewis-52nd & Delaware Tap 138 kV line overloads for the loss of either of two contingent lines in Tulsa, Oklahoma. The overloads identified were driven by the loss of a line; Riverside-ORU East Tap in the 2027 and 2032 summer peak and Riverside-ORU West Tap in the 2032 summer peak. The

[14] SPP OATT Business Practices , Section 8

loading on this monitored element increases from 69% of the normal rating in the basecase 2027 and 2032 summer models to 102.4% of the emergency rating.

The rebuild of the monitored element, the 0.97 mile 138 kV line from 36th & Lewis-52nd & Delaware Tap circuit 1, was analyzed. The project provided the necessary loading relief, reducing the loading on the line from 102.4% to approximately 75% of the emergency rating.

Due to surrounding topology conditions, the other proposed projects were deemed to be infeasible. While the substation at 36th & Lewis could likely support the installation of an additional circuit, the facility at 52nd & Delaware Tap cannot support additional circuits. This would prevent upgrade options such as a second circuit being installed parallel to the monitored element.

The solution ultimately chosen to address this need was the rebuild of the 138 kV 36th & Lewis-52nd & Delaware Tap circuit 1 line. This project addresses the overloads caused by the line outages while having the most feasable implementation.

Siloam Springs-Siloam Springs City 161 kV Terminal Equipment

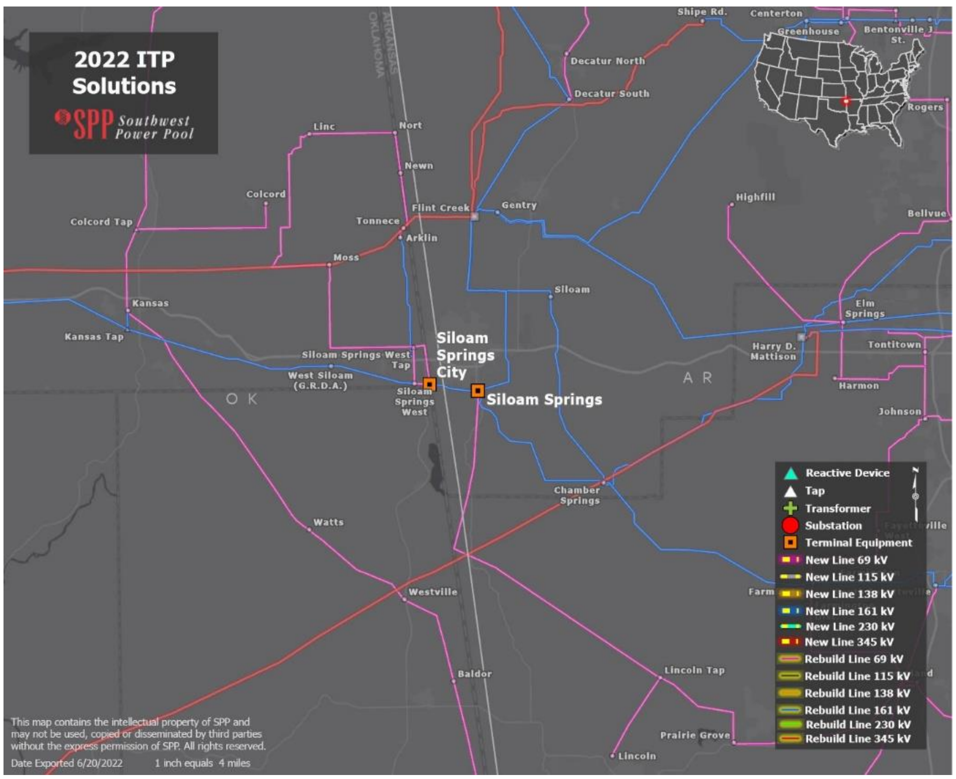

Figure 3.8: Siloam Springs-Siloam Springs City 161 kV Terminal Equipment

The Siloam Springs-Siloam Springs City 161 kV line is situated just west of Fayetteville, Arkansas. With the loss of the Flint Creek generator and the Flint Creek-Tonnece 345 kV line in the 2024 and 2027 summer models, the Siloam Springs-Siloam Springs City 161 kV line overloads to 107% of the emergency rating. The pre-contingency loading on this line is only 20% of its normal rating. The following solutions, in Table 3.3, were considered to address this need.

PROJECT	POST CONTINGENCY LOADING
Tonnece-Flint Creek 345 kV circuit 2 new line	32%
Tonnece-Chamber Springs 345 kV new line	62%
Siloam Springs-Siloam Springs City 161 kV line terminal upgrade	87%

Table 3.3: Post Contingency Loading Project Solutions

A second Tonnece-Flint Creek 345 kV line was proposed to offer another 345 kV path to prevent Siloam Springs- Siloam Springs City 161 kV line from overloading. This solution reduced the post contingent loading to approximately 32% of the line's emergency rating. While a second 345 kV circuit is an effective solution to reduce line loading, 345 kV lines are very expensive when compared to terminal equipment upgrades at both the Siloam Springs and Siloam Springs City 161 kV substations.

Another solution considered to resolve the overloading of the Siloam Springs-Siloam Springs City 161 kV line was a new 12.7 mile 345 kV line between Tonnece-Chamber Springs. This solution only reduced the post contingency loading to 62%, as opposed to the 32% from the new circuit 2 line from Tonnece-Flint Creek. This solution was favorable because it provided significant loading relief and an additional 345 kV line to support the demand in Northwest Arkansas and Eastern Oklahoma. However, the high cost of this solution, approximately $25 million, was not justifiable when terminal upgrades are a feasible option to resolve the violation.

The solution chosen to address the thermal overloading of the Siloam Springs-Siloam Springs 161 kV line is to upgrade the terminal equipment on both ends of the line. The solution reduces the post contingency loading on the Siloam Springs-Siloam Springs City 161 kV line from 107% to 87%. This project is cost effective and provides a satisfactory reduction in the line loading.

3.2.1.2 *GRAND RIVER DAM AUTHORITY (GRDA)*

Kerr-Maid 161 kV Double-Circuit Rebuild

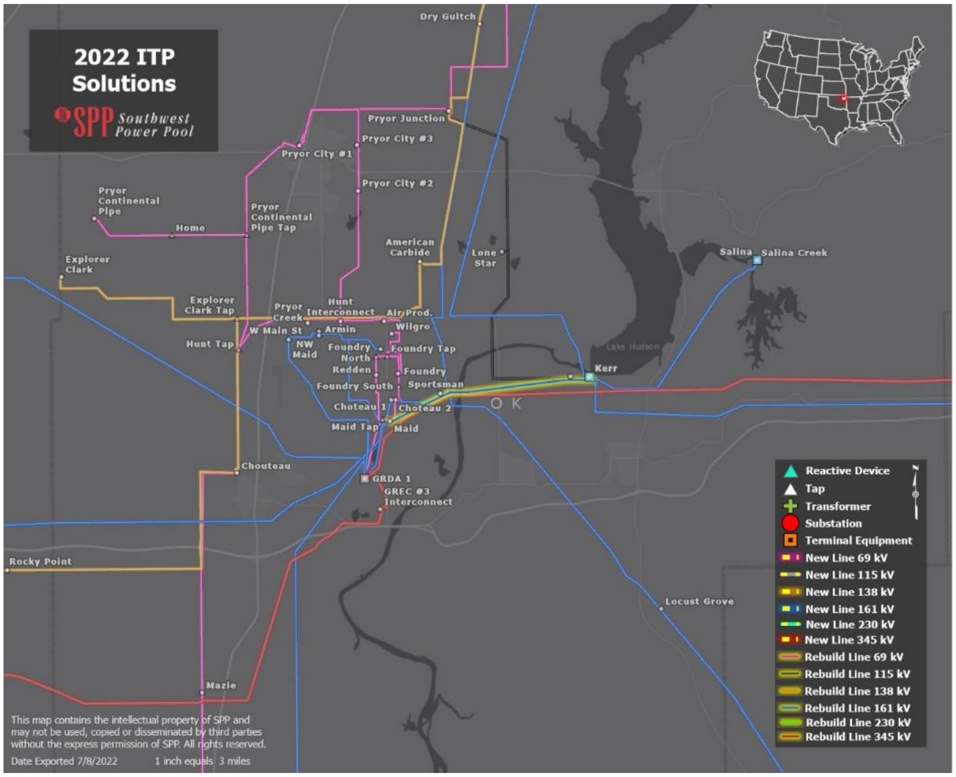

Figure 3.9: Kerr-Maid 161 kV circuit 1 & 2 rebuild

Northeast of Tulsa, the Kerr-Maid 161 kV circuit 1 and 2 each overload for the loss of the other circuit. These overloads are observed in the 2032 light load models and are both loaded to 103.2% of the post contingency limit.

These needs were observed exclusively in the year ten models due to an extra 120 megawatts of generation at the Salina Creek hydroelectric generating facility. An operational guide (op-guide) and flowgate definition have been utilized in real-time operation to mitigate congestion for the same 161kV lines due to certain facilities on the AECI system being taken out of service and/or when pumps are online at the Salina Creek hydroelectric generating facility. Due to operational congestion no longer being observed, the op-guide and the flowgate have been retired.

Three projects were considered to address this need: A new line from Kerr-Locust Grove 161 kV, a third circuit from Kerr-Maid 161 kV, and a rebuild of Kerr-Maid 161 kV circuits 1 and 2. Building a new line from Kerr-Locust Grove 161 kV was significantly more expensive than rebuilding the exising Kerr-Maid 161 kVlines. Adding a third circuit from Kerr-Maid 161 kV was cost effective, but not preferable due to substation constraints. All three options alleviated the loading, but the most feasible and cost effective solution was the rebuild of both 5.5 mile Kerr-Maid 161 kV lines. This solution also provided the greatest loading relief.

Separate from the 2022 ITP assessment, an AECI Affected System Study associated with the SPP Generation Interconnection's DISIS-2017-001 study identified a project in this area that consisted of re-terminating Kerr-412 161 kV line from the Kerr substation to Sportsman. This project also included building a third Maid-Kerr 161 kV line and was found to resolve the 2022 ITP need driving its consideration. AECI is re-evaluating this Network Upgrade due to higher-queued withdrawals from their GI Queue. Because a signed Facility Construction Agreement with AECI has not been filed per the generator interconnection process, the ITP must address the issue with its preferred solution.

SPP evaluated this project within the 2022 ITP, but did not select it for the final portfolio because it provided less relief and was more expensive than the other projects being considered.

3.2.1.3 *EVERGY METRO (EM)*

Craig 345 kV Redundant Relay

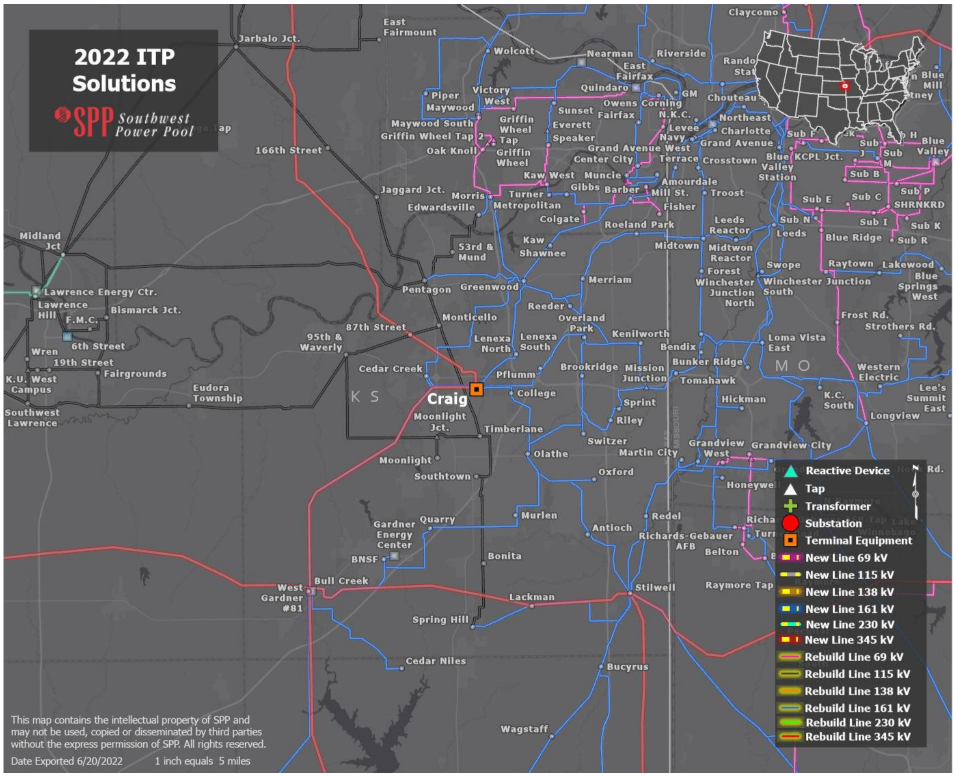

Figure 3.10: Craig 345 kV Redundant Relay

On the southwest side of Kansas City, Kansas, the 161 kV line from West Gardner-Cedar Creek overloads for the loss of Craig 345 kV bus. These overloads were observed in both 2024 and 2032 summer models. The loading on this monitored element increases from 100.1% to 101.4% of the post contingency rating in the 2024 and 2032 summer models, respectively.

The need was driven by a P5.2 contingency, which occurs when a non-redundant relay, designed to protect a transmission circuit, fails. To resolve this need, a second relay will be installed, making the relaying redundant. This project prevents the overload from occurring on the monitored element by elilminating the P5.2 event, which is the loss of the 345 kV bus as a result of relay failure.

3.2.1.4 *NORTHWEST IOWA POWER COOPERATIVE (NIPCO)*

Eagle-J1 Center 69 kV

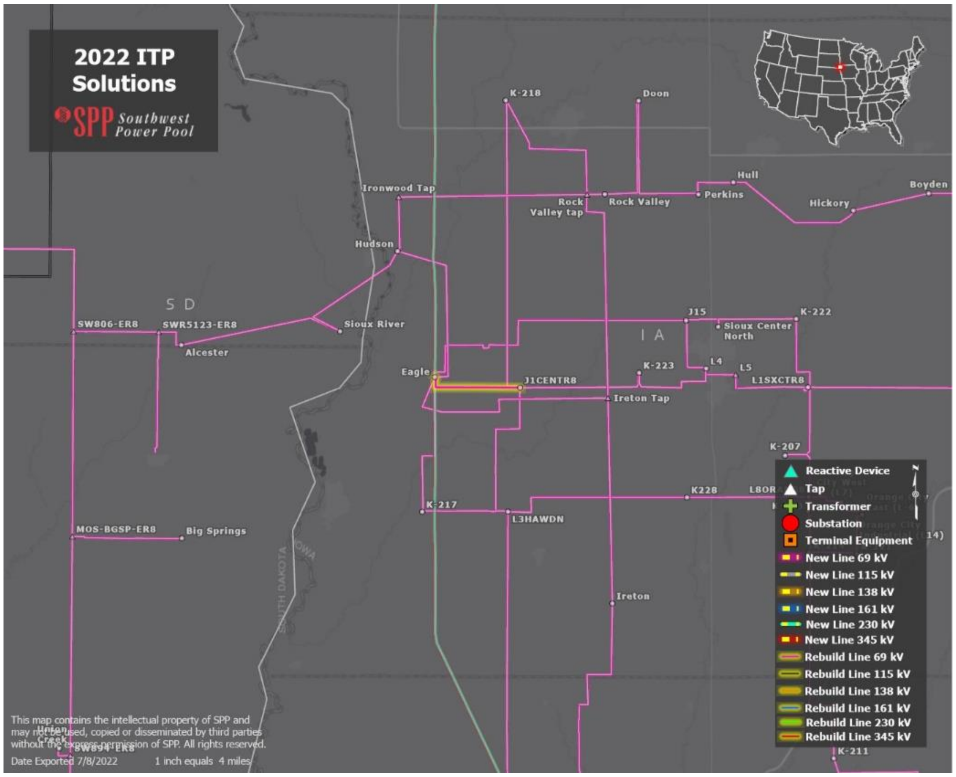

Figure 3.11: Eagle-J1 Center 69 kV

The Eagle-J1 Center 69 kV line is located in the northwest corner of Iowa, a few miles from the South Dakota border. The Eagle 69 kV substation serves as a voltage step-down from the nearby 230 kV system and has several 69 kV branches that proceed eastward. Of these lines, the Eagle-J1 Center 69 kV line is both the highest loaded and the lowest rated. Losing any of the other 69 kV lines from the Eagle substation shifts flows to the Eagle-J1 Center 69 kV line, overloading the line.

Two projects were considered to address this issue: a rebuild of the monitored element, and a tap and interconnection of the Rock Valley-Ireton Tap 69 kV line and the J1 Center-Siouxland 69 kV line, to the east of Eagle-J1 Center, in order to provide a source on the other side of the constraint. The final project selected was the rebuild of the 3.5-mile Eagle-J1 Center 69 kV line because of its lower cost.

3.2.1.5 *OKLAHOMA GAS AND ELECTRIC COMPANY (OGE)*

Westmoore-Westmoore Tap 138 kV Circuit 1 Rebuild

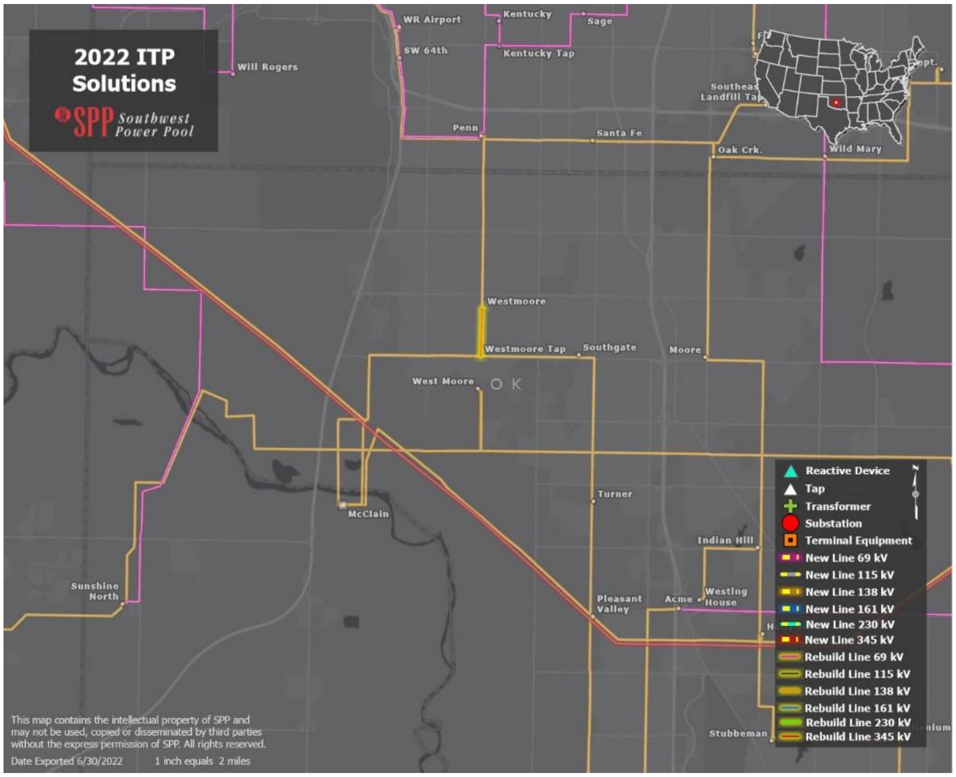

Figure 3.12: Westmoore-Westmoore Tap 138 kV Circuit 1 Rebuild

South of Oklahoma City, Oklahoma, the Westmoore-Westmoore Tap 138 kV line overloads for the loss of any of the following 138 kV lines in the 2032 summer models: Pleasant Valley-Normhill, Pleasant Valley-Hollywood, Hollywood-Indian Hill. The pre- and post-contingent loading of the monitored element was observed to be trending upward. In the basecase 2027 and 2032 summer models, the loading on the 138 kV line from Westmoore-Westmoore Tap increased from 89% to 99% of the normal rating. In the 2027 summer models, the Westmoore-Westmoore Tap 138 kV line was loaded to approximately 93% of the emergency rating for the loss of Pleasant Valley-Normhill and Pleasant Valley-Hollywood. These increased flows on this line were caused by incremental increases in load north of the 138 kV Westmoore-Westmoore Tap line, the most notable being a 10.4 megawatt increase in the load at the 138 kV Westmoore substation. In the 2032 summer models, the post-contingent loading on the Westmoore-Westmoore Tap 138 kV line increased and resulted in the three contingencies causing thermal violations. The worst violation was a 103.2% overload for the loss of the Pleasant Valley-Hollywood 138 kV line.

The following solutions were considered to address the need on the Westmoore-Westmoore Tap 138 kV line.

PROJECT	POST CONTINGENCY LOADING
Bailey-McClain 138 kV new line	90%
Sunshine Canyon Station-McClain 138 kV new line	91%
Westmoore-Westmoore Tap 138 kV circuit 1 rebuild	64%
Westmoore-Westmoore Tap 138 kV circuit 2 new line	51%

Table 3.4: Post Contingency Loading Project Solutions

A new 138 kV line from Bailey-McClain was considered to provide an additional 138 kV path around the overloaded Westmoore-Westmoore Tap 138 kV line. This solution reduced the post contingent loading on the Westmoore-Westmoore Tap 138 kV line to an acceptable level, approximately 90% of the lines emergency rating. This project presented unique complications as it requires crossing the Canadian River, which causes an increase in cost and logistical complexity of line routing.

As an alternative to a new 138 kV line from Bailey-McClain, a logistically preferable option was proposed: a new 138 kV line from Sunshine Canyon Station-McClain. This option would not require a crossing of Canadian River, thus reducing the project's overall cost. A new 138 kV line from Sunshine Canyon Station-McClain performed comparably to a new line from Bailey-McClain, reducing the post-contingent loading to approximately 91% of the line's emergency rating.

The rebuild of the monitored element, the 0.77 mile 138 kV line from Westmoore-Westmoore Tap, was also analyzed. The project was favorable as it was also logistically less complex than a new 138 kV line from Bailey-McClain, requiring no river crossing, and considerably less expensive than constructing a new 138 kV line. Analysis of this project identified that the post contingent loading would be reduced to 64% of the lines emergency rating.

Finally, the construction of a new second 138 kV circuit from Westmoore-Westmoore Tap was considered. This solution would open up additional capacity for north flows. Adding a second circuit reduced the post contingent loading to approximately 51% of the line's emergency rating. This project provided the greatest loading relief to the monitored element, the 138 kV Westmoore-Westmoore Tap circuit 1 line, but did so at a higher cost than rebuilding the existing Westmoore-Westmoore Tap 138 kV circuit 1 line.

The solution chosen was a rebuild of the Westmoore-Westmoore Tap 138 kV circuit 1 line. The project combined logistical feasibility and loading relief while remaining cost-effective.

3.2.1.6 *SOUTHWESTERN PUBLIC SERVICE (SPS)*

Lea Road Capacitor Bank

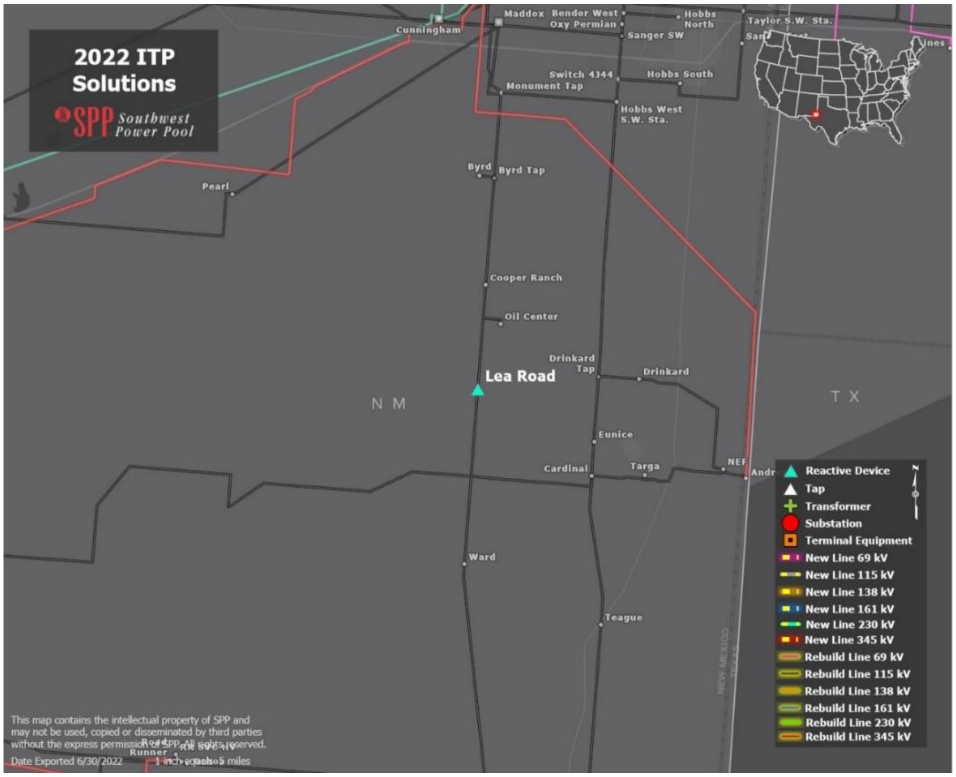

Figure 3.13: Lea Road Capacitor Bank

In the southeast corner of New Mexico, low voltages arise on the 115 kV system in the 2032 models for the loss of the following key lines into the 115 kV pocket: Cunningham-Monument Tap 115 kV, Monument-Byrd Tap 115 kV, or Livingston Ridge-Medanos 115 kV. As a result of inadequate voltage support in the area, the 115 kV buses experiencing low voltages in this area include Medanos, Sage Brush, Lea Road, Cooper Ranch, Monument, Byrd, Byrd Tap and Oil Center. The trend towards low voltages is related to the increase in load.

One solution considered was to adjust the LTC settings of both 230/115 kV transformers at Andrews County. This solution resolved the low voltages at Lea Road, but not the more widespread voltage issues.

To provide reactive support, competing solutions were considered that modeled 28.8 MVAR capacitor banks at Sage Brush and Lea Road. When the capacitor bank was modeled at Sage Brush, the low voltages were only resolved at Sage Brush and Medanos. Ultimately, the most effective solution was determined to be installing a capacitor bank at Lea Road, which resolved the low voltages at each of the buses experiencing post-contingent low voltages.

3.2.1.7 *WESTERN AREA POWER ADMINISTRATION-UPPER GREAT PLAINS REGION (WAPA-UGPR)*

Fargo 230 kV Terminal Equipment Upgrades

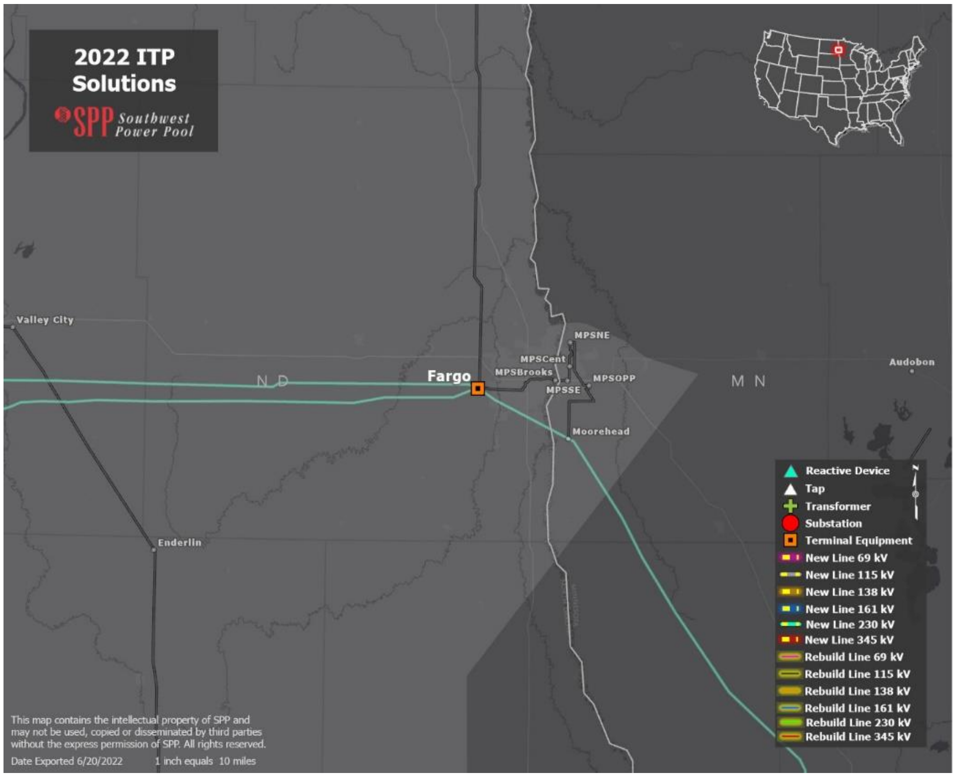

Figure 3.14: Fargo 230 kV Terminal Equipment Upgrades

Located on the eastern border of North Dakota, the Fargo-Sheyenne 230 kV line serves as a tie line between WAPA-UGPR and Northern States Power Company (NSP) (Xcel). Losing any of the parallel 345 kV lines (Jamestown-Buffalo, Buffalo-Bison) during the summer seasons causes an overload on the Fargo-Sheyenne line as power transfers to the 230 kV facilities. This need was driven by topology changes on the NSP (Xcel) side that exacerbated a line already near overload in the 2021 ITP.

The chosen solution was a terminal equipment upgrade at the Fargo 230 kV substation to raise its emergency rating to a minimum of 505 MVA.

Utica-Napa Junction 115 kV Replace CT

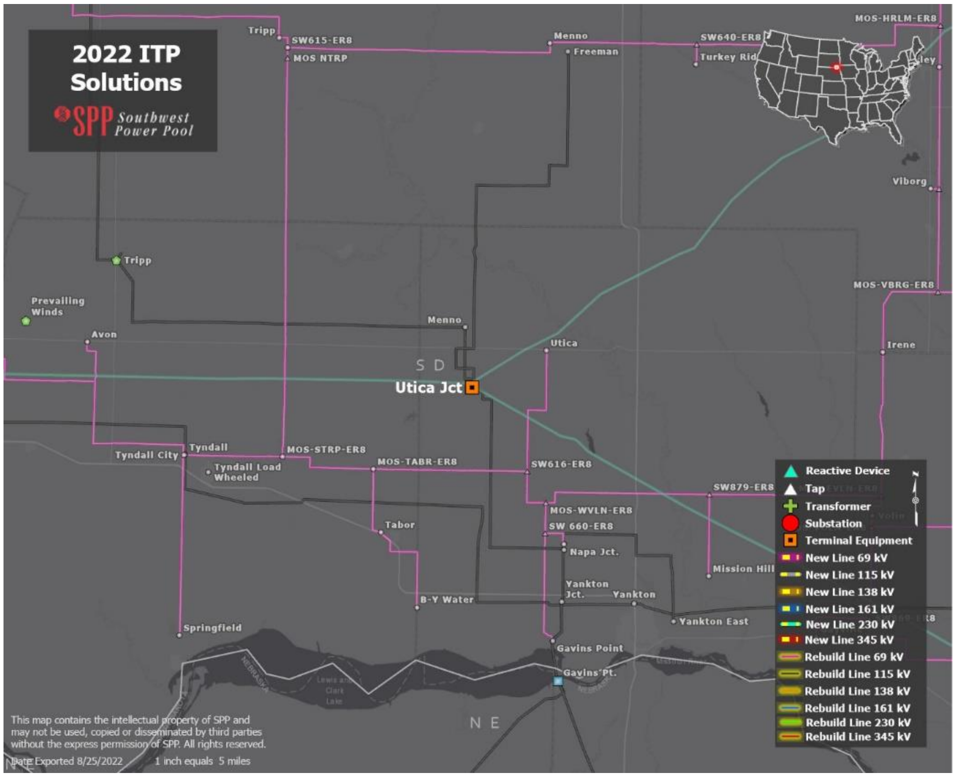

Figure 3.15: Utica-Napa Junction 115 kV

The Utica-Napa Junction 115 kV line is located near the border between Nebraska and South Dakota. This line acts as a feeder from the 230 kV system to serve the nearby towns. This line can overload in the Year 2 models for a P3 contingency, the loss of the Gavins generator to the south and the Tyndall-White Swan 115 kV line to the west. When those two sources are removed, Utica-Napa Junction becomes the primary feed of the area.

These needs are not present in later year models in the 2022 ITP. This is due to generation being dispatched at Spirit Mound to the east. Removing this need from scope due to its temporary nature was discussed with the local transmission owners, but the generation at Spirit Mound is not likely to dispatch and is not cost-effective to relieve the violation. Therefore, the project to address the need, a replacement of terminal equipment on the Utica-Napa Junction line, is included in this portfolio.

3.2.1.8 *RELIABILITY PROJECT PORTFOLIO SUMMARY*

DESCRIPTION	AREA	E&C COST	MILES	NTC/ NTC-C
36th & Lewis-52nd & Delaware Tap 138 kV rebuild	AEP	$5,491,941	0.97	NTC
Craig 345 kV redundant relay	EM	$200,000		NTC
Eagle-J1 Center 69 kV rebuild	NIPCO	$1,644,058	3.5	NTC
Fargo 230 kV terminal equipment	WAPA-UGPR	$2,406,249		NTC
Kerr-Maid 161 kV circuit 1 & 2 rebuild	GRDA	$10,924,000	5.5	No
Lea Road 115 kV 28.8 MVAR capacitor bank	SPS	$5,009,320		NTC
Siloam Springs and Siloam Springs City 161 kV terminal equipment	AEP/ GRDA	$1,022,030		NTC
Utica Junction 115 kV replace CT	WAPA-UGPR	$383,947		NTC
Westmoore-Westmoore Tap 138 kV circuit 1 rebuild	OGE	$2,400,000	0.77	No

Table 3.5: Reliability Project portfolio

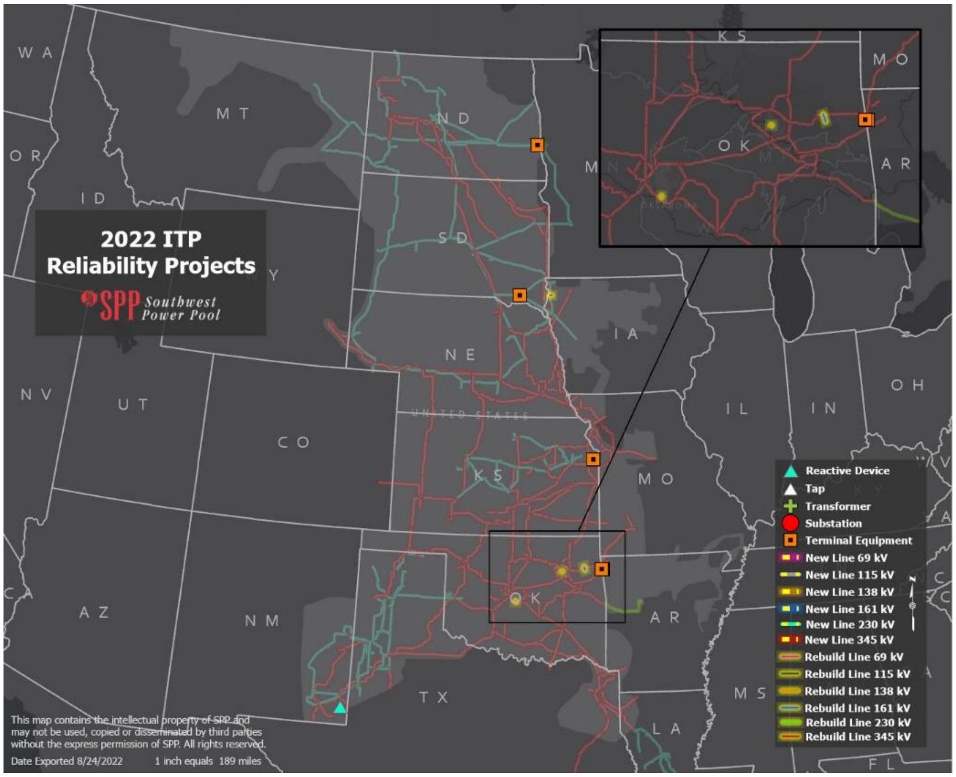

Figure 3.16: Reliability Project Portfolio

3.2.2 SHORT-CIRCUIT PROJECT PORTFOLIO

Short-Circuit Project Screening

Solutions submitted to address overdutied fault-interrupting equipment were reviewed to ensure the updated fault-interrupting equipment ratings submitted were greater than the maximum available fault current identified in the short-circuit needs assessment.

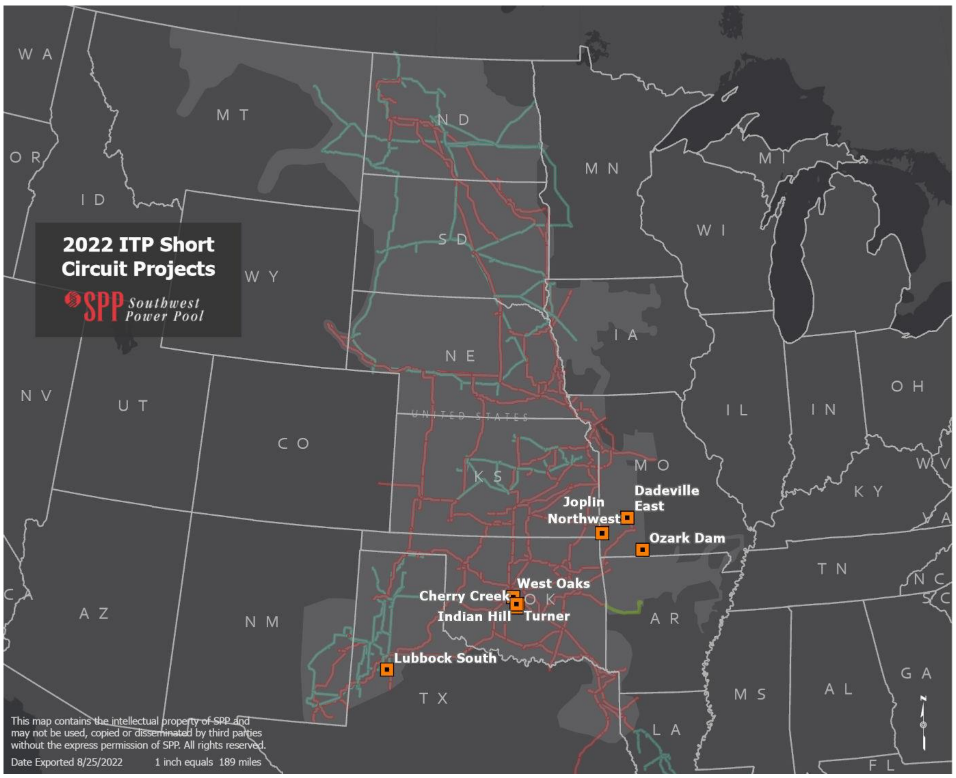

Figure 3.17: Short Circuit Project portfolio

2022 ITP short-circuit projects consist of eight overdutied fault interputing equipment upgrades. These upgrades ensure SPP's members can meet short-circuit analysis requirements in the NERC TPL-001-4 standard. The short-circuit projects were all staged with need dates and projected in-service dates of June 1, 2024.

SHORT-CIRCUIT PROJECT	AREA	IMPLEMENTATION SCENARIO
Cherry Creek 138 kV breaker	OGE	24S / BR
Dadeville 161 kV breaker	EDE	24S / BR
Indian Hill 138 kV breaker	OGE	24S / BR

SHORT-CIRCUIT PROJECT	AREA	IMPLEMENTATION SCENARIO
Joplin 69 kV breaker	EDE	24S / BR
Lubbock South 115 kV breaker	SPS	24S / BR
Ozark Dam 161 kV breaker	EDE	24S / BR
Turner 138 kV breaker	OGE	24S / BR
West Oak 138 kV two breakers	OGE	24S / BR

Table 3.6: Short-Circuit Projects

4 STAGING

Staging is the process by which the need date for each project is determined. The staging methodology can be found in the ITP Manual.[15]

4.1 RELIABILITY PROJECTS

The results of staging for the reliability projects are shown in Table 4.1 below. The projects with a Projected In-Service Date of "N/A" are not recommended to receive an NTC.

DESCRIPTION	NEED DATE	PROJECTED IN-SERVICE DATE	MODEL
36th & Lewis-52nd & Delaware 138 kV rebuild	6/1/2027	6/1/2027	BR
Craig 345 kV redundant relay	6/1/2024	6/1/2024	BR
Eagle-J1 Center 69 kV rebuild	6/1/2024	10/27/2024	BR
Fargo 230 kV terminal equipment	6/1/2024	6/1/2024	BR
Kerr-Maid 161 kV circuit 1 & 2 rebuild	4/1/2032	N/A	BR
Lea Road 115 kV 28.8 MVAR capacitor bank	6/1/2028	6/1/2028	BR
Siloam Springs and Siloam Springs City 161 kV terminal equipment	6/1/2024	6/1/2024	BR
Utica Junction 115 kV replace CT	6/1/2024	6/1/2024	BR
Westmoore-Westmoore Tap 138 kV circuit 1 rebuild	6/1/2031	N/A	BR

Table 4.1: Project Staging Results - Reliability

[15] ITP Manual version 2.11, section 6.3

4.2 SHORT-CIRCUIT PROJECTS

The short-circuit projects were all staged with need dates and projected in-service dates of June 1, 2024.

`	NEED DATE	PROJECTED IN-SERVICE DATE	MODEL
Cherry Creek 138 kV breaker	6/1/2024	6/1/2024	BR
Dadeville 161 kV breaker	6/1/2024	6/1/2024	BR
Indian Hill 138 kV breaker	6/1/2024	6/1/2024	BR
Joplin 69 kV breaker	6/1/2024	6/1/2024	BR
Lubbock South 115 kV breaker	6/1/2024	6/1/2024	BR
Ozark Dam 161 kV breaker	6/1/2024	6/1/2024	BR
Turner 138 kV breaker	6/1/2024	6/1/2024	BR
West Oak 138 kV two breakers	6/1/2024	6/1/2024	BR

Table 4.2: Project Staging Results-Short Circuit

5 INFORMATIONAL PORTFOLIO ANALYSIS

5.1 RATE IMPACTS

The projected impact of the project plan on the energy bill of a typical residential customer within the SPP region was calculated and reported on a $/kWh basis. The first step in this process is to estimate the zonal cost allocation of the Annual Transmission Revenue Requirement (ATRR). This cost-allocated ATRR is calculated specifically for the ITP upgrades using the ATRR forecast. The forecast allocated 2022 ITP upgrade costs to the zones using the highway/byway cost-allocation method. This method allocates costs to the individual zones and to the region based on the voltage level of the upgrade. Regional ATRRs are summed and allocated to the zones based on their individual load ratio share percentages.

Highway Byway Cost Allocation		
Voltage (kV)	Regional	Zonal
300 and above	100%	0%
100 – 299	33%	67%
Below 100	0%	100%

Table 5.1: Highway Byway Cost Allocation

The following inputs and assumptions were required to generate the forecast:

- Initial investment of each upgrade
- TO's estimated individual annual carrying charge percent
- Voltage level of each upgrade
- In-service year of each upgrade
- 2.5% annual straight-line rate-base depreciation
- 2% construction price inflation applied to 2022 base-year estimates
- Mid-year in-service convention

The 2022 ITP upgrades were evaluated in the SPP Cost Allocation Forecast model and the study year was shown to be 2032.

Zone	One-Year ATRR Costs	Rate Impact-Cost	Net Impact
AEPW	$664.67	$0.01	$0.01
EMDE	$282.82	$0.05	$0.05
GMO	$42.46	$0.00	$0.00

Zone	One-Year ATRR Costs	Rate Impact-Cost	Net Impact
GRDA	$844.76	$0.07	$0.07
KACY	$9.96	$0.00	$0.00
KCPL	$81.61	$0.01	$0.01
LES	$16.34	$0.00	$0.00
MIDW	$8.41	$0.00	$0.00
NPPD	$70.15	$0.00	$0.00
OKGE	$462.96	$0.01	$0.01
OPPD	$57.23	$0.00	$0.00
SPRM	$14.74	$0.00	$0.00
SPS	$500.66	$0.01	$0.01
SUNC	$25.05	$0.00	$0.00
SWPA	$7.48	$0.01	$0.01
UMZ	$575.11	$0.01	$0.01
WERE	$112.35	$0.00	$0.00
WFEC	$38.20	$0.00	$0.00
TOTAL	**$3,814.95**	**$0.01**	**$0.01**

Table 5.2: 2032 Retail Residential Rate Impacts by Zone

Zone	One-Year ATRR Costs	Rate Impact-Cost	Net Impact
Arkansas	$213.95	$0.01	$0.01
Iowa	$65.78	$0.01	$0.01
Kansas	$280.86	$0.01	$0.01
Louisiana	$91.79	$0.01	$0.01
Minnesota	$6.93	$0.01	$0.01
Missouri	$334.43	$0.01	$0.01
Montana	$24.56	$0.01	$0.01
Oklahoma	$1,521.53	$0.02	$0.02
Nebraska	$160.50	$0.00	$0.00
New Mexico	$183.01	$0.01	$0.01

Zone	One-Year ATRR Costs	Rate Impact-Cost	Net Impact
North Dakota	$303.73	$0.01	$0.01
South Dakota	$152.56	$0.01	$0.01
Texas	$470.56	$0.01	$0.01
Wyoming	$4.75	$0.01	$0.01
TOTAL	**$3,814.95**	**$0.01**	**$0.01**

Table 5.3: 2032 Retail Residential Rate Impacts by State (2022$)

5.2 FINAL RELIABILITY ASSESSMENT

5.2.1 METHODOLOGY

The 2022 ITP recommended portfolio and model corrections were incorporated into the base reliability and short-circuit models. A contingency analysis of equivalent scope to the analysis described in sections 4.2.1 and 4.2.2 of the ITP Manual was performed to determine if the selected projects caused any new reliability violations.

5.2.1.1 *SHORT-CIRCUIT MODEL*

A proxy automatic sequencing fault calculation (ASCC) short-circuit analysis was performed on the 2022 ITP year-two summer maximum fault current model to find percent increases in fault currents in relation to the base case model on which the needs assessment was performed. All consolidated portfolio projects expected to alter or need zero sequence data were added to the model regardless of their in-service dates. After performing this analysis, eight of the 10,718 buses monitored experienced a 5% or more increase in fault current. None of the eight buses appeared to exceed common breaker duty ratings of 20kA and 40kA. The subsequent short-circuit analysis performed in the next ITP will confirm whether or not the duty ratings are exceeded given the latest modeling assumptions.

5.2.2 SUMMARY

5.2.2.1 *BASE RELIABILITY MODELS*

No thermal or voltage violations were identified as a result of the recommended projects in the 2022 ITP assessment.

5.2.2.2 *SHORT-CIRCUIT MODEL*

The final reliability assessment for the short-circuit model did not show any new fault-interrupting equipment to have its duty ratings exceeded by the maximum available fault current (potential violation) due to the addition of the consolidated portfolio.

5.2.3 CONCLUSION

The final reliability assessment showed no new reliability violations caused by the 2022 ITP recommended portfolio that require additional project recommendations.

6 NTC RECOMMENDATIONS

SPP makes NTC recommendations for projects included in the consolidated portfolio based on results from the staging process and SPP Business Practice 7060. If financial expenditure is required within four years of board approval, the project is generally approved for construction (NTC, NTC-C, RFP). To determine the date when financial expenditure is required, the project's lead time is subtracted from its need date. Expected lead times for transmission projects are determined using historical data on construction timelines from SPP's project tracking process. NTC-Cs are issued for projects with an operating voltage greater than 100 kV and a Study Estimate greater than $20 million.

Table 6.1 below shows SPP's NTC recommendations when, factoring in staging results, expected lead times and other qualitative information related to the recommended projects.

Description	Need Date	Lead Time (months)	Financial Expenditure Date	NTC/ NTC-C
36th & Lewis-52nd & Delaware Tap 138 kV rebuild	6/1/2027	24	6/1/2025	NTC
Craig 345 kV redundant relay	6/1/2024	12	6/2/2023	NTC
Eagle-J1 Center 69 kV rebuild	6/1/2024	24	10/28/2022	NTC
Fargo 230 kV terminal equipment	6/1/2024	18	12/1/2022	NTC
Kerr-Maid 161 kV circuit 1 & 2 rebuild	4/1/2032	24	4/2/2030	No
Lea Road 115 kV 28.8 MVAR capacitor bank	6/1/2028	24	6/2/2026	NTC
Siloam Springs and Siloam Springs City 161 kV terminal equipment	6/1/2024	18	12/1/2022	NTC
Utica Junction 115 kV replace CT	6/1/2024	18	12/1/2022	NTC
Westmoore-Westmoore Tap 138 kV circuit 1 rebuild	6/1/2031	24	6/1/2029	No
Cherry Creek 138 kV breaker	6/1/2024	18	12/1/2022	NTC
Dadeville 161 kV breaker	6/1/2024	18	12/1/2022	NTC
Indian Hill 138 kV breaker	6/1/2024	18	12/1/2022	NTC
Joplin 69 kV breaker	6/1/2024	18	12/1/2022	NTC
Lubbock South 115 kV breaker	6/1/2024	18	12/1/2022	NTC
Ozark Dam 161 kV breaker	6/1/2024	18	12/1/2022	NTC
Turner 138 kV breaker	6/1/2024	18	12/1/2022	NTC
West Oak 138 kV two breakers	6/1/2024	18	12/1/2022	NTC

Table 6.1: 2022 NTC Recommendations

7 GLOSSARY

Acronym	Name
ABB	ABB Group licenses the PROMOD enterprise software SPP uses for economic simulations
APC	Adjusted production cost = Production Cost $ + Purchases $-Sales $
ARR	Auction Revenue Rights
ATC	Available transfer capacity
BAA	Balancing Authority Area
BAU	Business as usual
B/C	Benefit-to-Cost Ratio
BES	Bulk-Electric System
CC	Combined cycle
CLR	Cost per loading relief
CT	Combustion turbine
CVR	Cost per voltage relief
DPP	Detailed Project Proposal
E&C	Engineering and construction cost
ERCOT	Electric Reliability Council of Texas (ERCOT)
EHV	Extra-high voltage
ESWG	Economic Studies Working Group
FCITC	First contingency incremental transfer capacity
FERC	Federal Energy Regulatory Commission
FTLO	For the loss of
GI	Generator Interconnection
GIA	Generator Interconnection Agreement
GOF	Generator outlet facilities
GW	Gigawatt

Acronym	Name
GWh	Gigawatt hour
HV	High voltage
IFTS	Interruption of firm transmission service
IRP	Integrated resource plan
IS	Integrated System, which includes the Western Area Power Administration's Upper Great Plains Region (Western-UGP), Basin Electric Power Cooperative, and the Heartland Consumers Power District
ITP	Integrated Transmission Planning
ITP Manual	Integrated Transmission Planning Manual
kV	Kilovolt
LMP	Locational Marginal Price = the market-clearing price for energy at a given Price Node equivalent to the marginal cost of serving demand at the Price Node, while meeting SPP Operating Reserve requirements
MISO	Midcontinent Independent System Operator
MTEP19	2019 MISO Transmission Expansion Plan
MTEP20	2020 MISO Transmission Expansion Plan
MTEP	MISO Transmission Expansion Plan
MDAG	Model Development Advisory Group
MMWG	Multi-regional Modeling Working Group
MOPC	Markets and Operations Policy Committee
MW	Megawatt
NERC	North American Electric Reliability Corporation
NITSA	Network Integration Transmission Service Agreement
NPV	Net present value
NREL	National Renewable Energy Laboratory
NCLL	Non-consequential load loss
NTC	Notification to Construct
PPA	Power Purchase Agreement
PST	Phase-shifting transformer

Acronym	Name
RCAR	Regional Cost Allocation Review
RPS	Renewable portfolio standards
SASK	Saskatchewan Power
SPC	Strategic Planning Committee
SPP OATT	SPP Open Access Transmission Tariff
TO	Transmission Owner
TSR	Transmission Service Request
TVA	Tennessee Valley Authority
TWG	Transmission Working Group
US EIA	United States Energy Information Administration
VSL	Voltage stability limit

Table 7.1: Glossary

Appendix C-1

Frequently Constrained Areas Report (Southwest Power Pool, Market Monitoring Unit)

SPP Southwest Power Pool
MARKET MONITORING UNIT

FREQUENTLY CONSTRAINED AREAS 2022 STUDY

MAY 2023

Published on May 30, 2023

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LIST OF FIGURES

1 EXECUTIVE SUMMARY

The Market Monitor analyzed real-time market data from March 1, 2022 through February 28, 2023. The Market monitor also evaluated recent trends through April 30, 2023. Based on our analysis, the Market Monitor proposes the addition of Oklahoma City, Oklahoma; Tulsa, Oklahoma; Joplin, Missouri; and Williston, North Dakota as Frequently Constrained Areas (FCA). Collectively these four areas include 271 unique resources.[1] The increase in Frequently Constrained Area resources stems from material increases in pivotal supplier hours as well as significant increases in congestion magnitude relative to prior study periods. The MMU will remove the current Frequently Constrained Areas: Southwest Missouri and Southeast Oklahoma. While Southwest Missouri and Joplin are similar geographically, congestion patterns changed and are now represented by a different constraint and resource group. Additionally, the congestion previously observed in Southeast Oklahoma has dissipated and moved toward Oklahoma City and Tulsa.

[1] The distinct resource count is 271. However, some resources reside within more than one Frequently Constrained Area. This leads to 307 unique resource to Frequently Constrained Area combinations.

Figure 1-1 Pivotal supplier hour heat map with Frequently Constrained Area resources

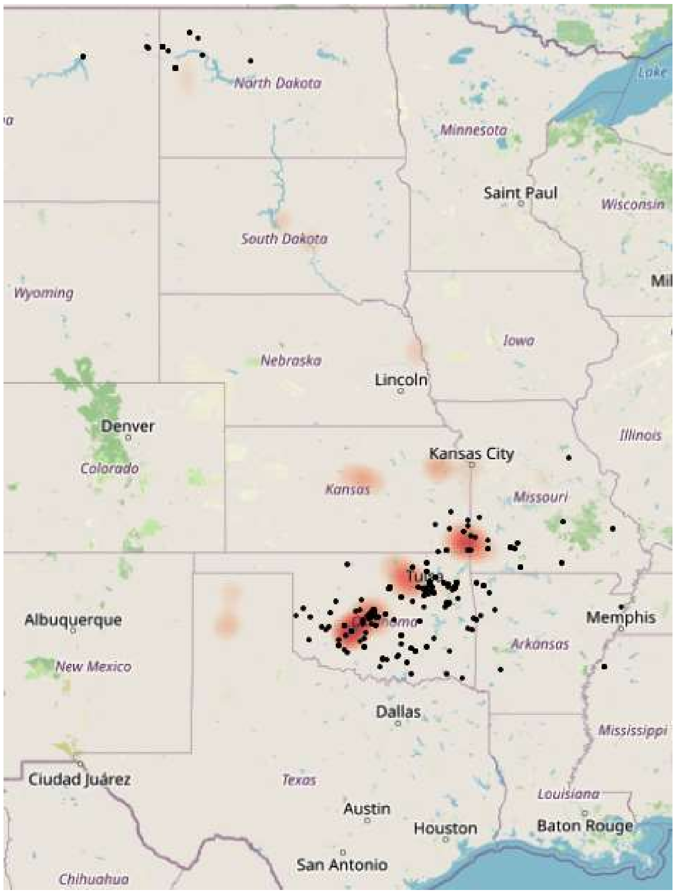


Figure 1-1 displays pivotal supplier hours in heat map form, as well as the Frequently Constrained Area resources with their respective locations. The map highlights the concentrations of pivotal supplier hours in the southeastern and eastern portions of the footprint. It also calls attention to the pivotal resources positioned to relieve the congestion associated with the Frequently Constrained Areas. This relationship follows with the general power flow of the footprint. Inexpensive wind generation in the western footprint tends to flow toward the population centers in the east and southeast. In addition, the map points to a pocket in the North West corner of North Dakota. In this area, a few key resources can materially influence pricing outcomes.

Figure 1-2 displays the resource count within the respective Frequently Constrained Areas.

Figure 1-2 Frequently Constrained Area, resource count[2]

FCA name, state	FCA resource count
Oklahoma City, Oklahoma	89
Tulsa, Oklahoma	31
Joplin, Missouri	161
Williston, North Dakota	26
Total	**307**

[2] There are 307 unique resource to Frequently Constrained Area combinations, but only 271 unique resources.

2 GOVERNING LANGUAGE

Frequently Constrained Areas are areas of the Integrated Marketplace footprint that experience high levels of congestion and are associated with one or more pivotal suppliers. The SPP Open Access Transmission Tariff[3] defines Frequently Constrained Areas as:

> "an electrical area identified by the Market Monitor that is defined by one or more binding transmission constraints or binding Reserve Zone constraints that are expected to be binding for at least five-hundred (500) hours during a given twelve (12)-month period and within which one (1) or more suppliers are pivotal."

The SPP Market Monitor reevaluates the Frequently Constrained Area designations at least annually.[4]

3 METHODOLOGY

3.1 Data and study period

The study period runs from March 1, 2022 through February 28, 2023. The analysis incorporates real-time balancing market (RTBM) congestion and dispatch data, and resource parameter offers for online resources. Also included in the analysis is real-time transmission system topography, including but not limited to transmission elements, ratings, effective and termination times, temporary operating conditions, etc.

[3] SPP OATT Att. AF Section 3.1.1 (Frequently Constrained Areas)

[4] SPP OATT Att. AF Section 3.1.1.3 (Changes to Frequently Constrained Area Designation)

3.2 Study process

The study consists of the following process.

1. **Binding hours computation:** The study calculates binding hours for each modeled transmission constraint. A constraint counts as binding in a five-minute interval if the loading on the constraint is within the greater of five megawatts or two percent of the effective constraint limit.

2. **Pivotal supplier analysis:** The study calculates pivotal supplier hours for each modeled transmission constraint. A constraint counts as having a pivotal supplier during a five-minute interval if the supplier can cause a constraint to exceed its effective limit by decreasing generation on resources that provide congestion relief and by increasing generation on resources that exacerbate congestion. The submitted ramp rates, economic minimum, and maximum capabilities govern the redispatch of the potential pivotal supplier's resources. In this analysis, we consider a thirty-minute redispatch period. We account for the market's ability to react to the actions of the potential pivotal supplier by allowing a similar redispatch of all resources not owned or controlled by the potential pivotal supplier.

3. **Selection of evaluation areas, Frequently Constrained Area candidates, and Frequently Constrained Areas:** The geographical concentration of pivotal supplier hours determines the evaluation areas. Candidate areas meet the pivotal supplier hour test, in addition to the locational and electrical tests associated with the selection of primary and secondary constraints. Frequently Constrained Areas meet the evaluation area and candidate area requirements in addition to the financial impact test.

4. **Selection of primary constraints:** A primary constraint for the Frequently Constrained Area candidate is generally the constraint with the highest number of pivotal supplier hours within a given area. However, there are instances where additional individual

primary constraints are considered within the same area. The areas are determined by evaluating pivotal supplier hours in conjunction with each constraint.

5. **Selection of secondary constraints:** Secondary constraints incorporate information from the primary constraint and test the results against other relevant constraints. This test is electrical in nature. First the test, identifies resources with shift factors to the primary constraint(s) of less than or equal to negative five percent. This primary constraint resource group is then tested against all other constraints. Specifically, the test identifies the constraints where resources have shift factors less than or equal to negative three percent, relative to the same resource group identified by the primary constraint. The constraints, which pass this test, are secondary constraints.

6. **Identify the Frequently Constrained Area candidate resources:** A resource is a Frequently Constrained Area candidate resource if it has an average shift factor of less than or equal to negative five percent to the constraints identified as primary and secondary constraints. This cut-off of negative five percent is consistent with the local market power test.[5]

7. **Impact analysis:** An impact analysis is used to determine the number of hours for which the Frequently Constrained Area candidate resource group has significant impacts on prices in the candidate area. For each five-minute interval in the study period, the resource price impacts on each defining constraint are calculated by multiplying the shadow price and the candidate resource’s corresponding shift factor. The resource price impacts are then summed over the Frequently Constrained Area candidate defining constraints to obtain a five-minute price impact for each candidate resource. This calculation determines the contribution from the Frequently Constrained Area candidate constraints to the candidate resource’s marginal congestion component of the locational marginal price.

[5] SPP OATT Att. AF Section 3.1 (Local Market Power Test)

Any interval for which a candidate resource's price impact exceeds the impact test threshold will count as a binding interval, and is susceptible to the exercise of market power when a pivotal supplier is present. The market impact test incorporates a $25 threshold.[6]

A candidate area that meets the threshold with more than 500 hours will be a Frequently Constrained Area. The importance of employing a threshold value accounts for periods when there is low cost relief capability in the Frequently Constrained Area. This low cost relief prohibits a pivotal supplier from accruing significant benefits by pursuing a withholding strategy in the Frequently Constrained Area.

[6] This threshold has been used in the mitigation system since March 1, 2015.

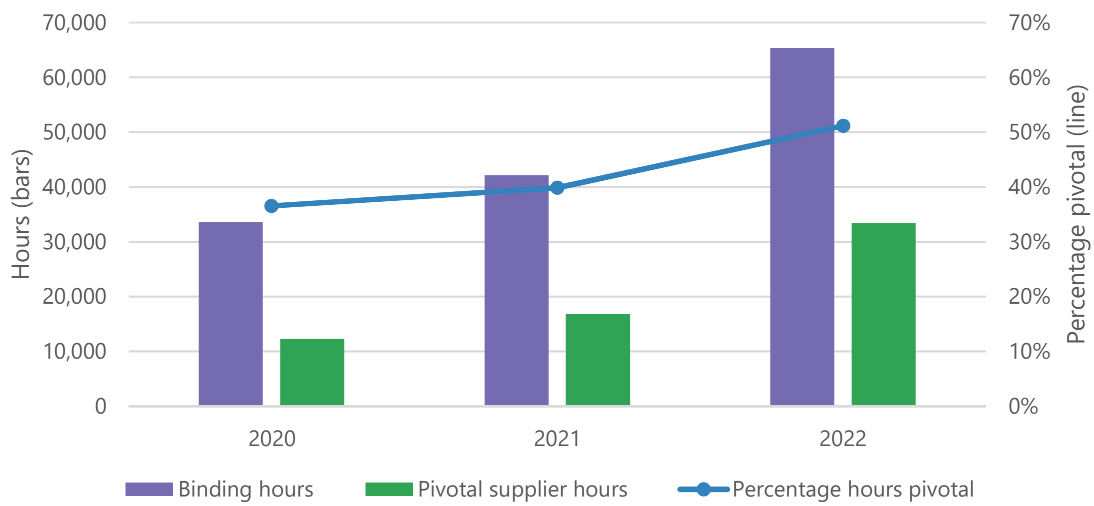
4 ANALYSIS

The Methodology section mentions several tests and processes, which drive the results of the Frequently Constrained Area study. Those tests and processes generally fall into two main categories.

1. Computation and evaluation of binding and pivotal suppler hours
2. Quantifying the pivotal supplier(s) potential financial impact

With respect to the computation and evaluation of pivotal supplier hours, Figure 4-1 highlights, the material increase in both binding hours and pivotal supplier hours over the last three study periods.

Figure 4-1 Binding hours and pivotal supplier hours, study period



From 2021 to 2022, pivotal supplier hours nearly doubled, and binding hours increased by more than 50 percent. Additionally the percentage of binding hours with at least one pivotal supplier increased materially from 40 percent in 2021 to 51 percent in 2022.

With respect to the financial impact test, the increases in binding and pivotal supplier hours coincide with periods of escalating congestion. When quantifying a pivotal supplier(s) potential financial impact, congestion plays a material role in the magnitude of the impact.

Figure 4-2 Total congestion, calendar year

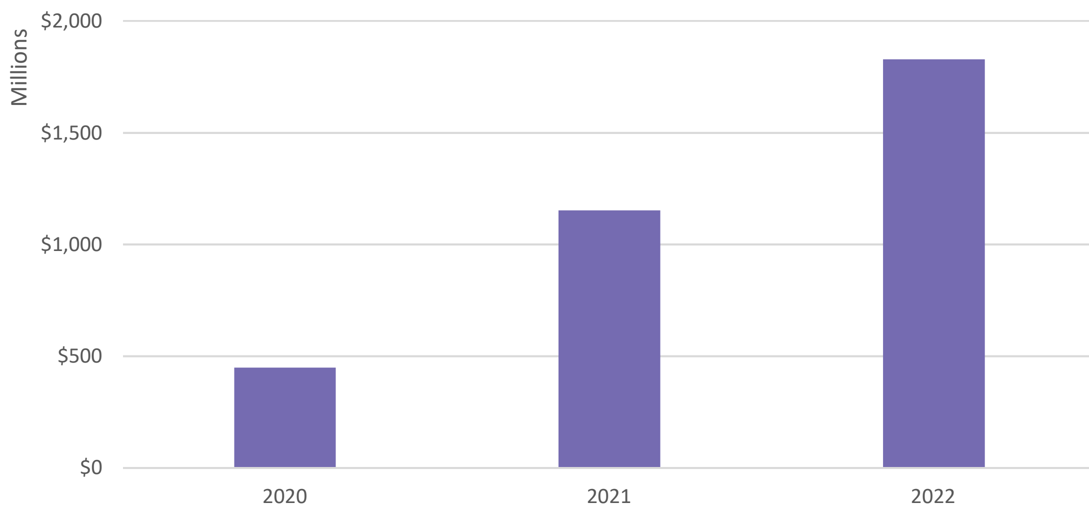


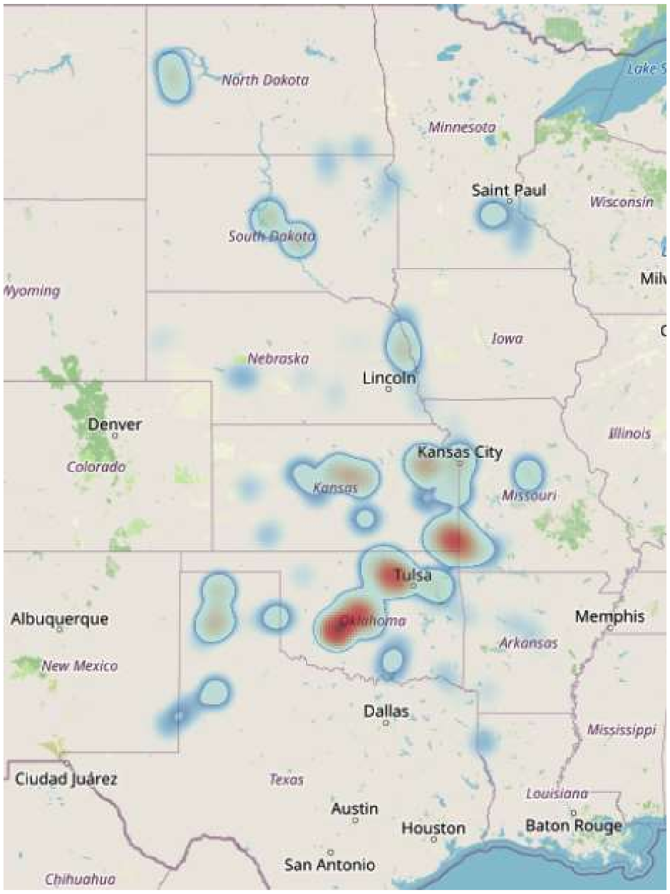
Figure 4-2 shows the dramatic increases in congestion over the past 3 calendar years.[7] From 2020 to 2021, real-time congestion increased 157 percent, followed by an increase of 59 percent from 2021 to 2022. The combined increase amounts to a 2022 congestion level that is more than 3 times the 2020 congestion level. Elevated congestion levels materially influence the financial impact test. The dramatic congestion increase has several contributing factors identified in the 2022 State of the Market Report.[8]

As previously mentioned, concentrations of binding and pivotal supplier hours factor into the selection of Frequently Constrained Area evaluation areas. Figure 4-3 displays pivotal supplier hours in heat map form.

[7] While calendar years do not perfectly align with the study periods, the general trend remains the same.

[8] 2022 SPP Annual State of the Market report, p. 195

Figure 4-3 Pivotal supplier hours, 2022 study period, heat map



The map highlights the concentrations of pivotal supplier hours in the southeastern and eastern portions of the footprint.[9] The most significant concentrations of pivotal supplier hours surround Oklahoma City, Tulsa, and Joplin. These three areas account for 14 percent of all binding hours, and 18 percent of all pivotal supplier hours during the study period.

Additional analysis of pivotal hour concentrations yielded eleven Frequently Constrained Area evaluation areas.

[9] The pivotal hour concentrations contribute to the process of selecting Frequently Constrained Area evaluation areas.

Table 4-4 highlights these areas, along with the resulting Frequently Constrained Area candidates and Frequently Constrained Areas.

Table 4-4 Evaluation areas, candidate areas, and Frequently Constrained Areas

Evaluation areas[10] – name, state	Candidate areas[11] – name, state	Frequently Constrained Areas[12] – name, state
Oklahoma City, Oklahoma	Oklahoma City, Oklahoma	Oklahoma City, Oklahoma
Tulsa, Oklahoma	Tulsa, Oklahoma	Tulsa, Oklahoma
Joplin, Missouri	Joplin, Missouri	Joplin, Missouri
Columbia, Missouri	Columbia, Missouri	
Kansas City, Kansas	Kansas City, Kansas	
Salina, Kansas	Salina, Kansas	
Omaha, Nebraska		
Pierre, South Dakota		
Williston, North Dakota	Williston, North Dakota	Williston, North Dakota
Saint Paul, Minnesota		
Amarillo, Texas	Amarillo, Texas	

Omaha, Nebraska and Pierre, South Dakota met the location test, but failed the electrical test. Saint Paul, Minnesota did not meet the pivotal supplier hour requirement. As a result, these areas do not warrant further consideration as Frequently Constrained Area candidates.

Frequently Constrained Area candidates: Columbia, Missouri; Kansas City, Kansas; Salina, Kansas; and Amarillo, Texas did not pass the impact test requirements. Therefore, these candidate areas will not become Frequently Constrained Areas.

Oklahoma City, Tulsa, Joplin, and Williston met the Frequently Constrained Area candidate requirements in addition to the impact test threshold.

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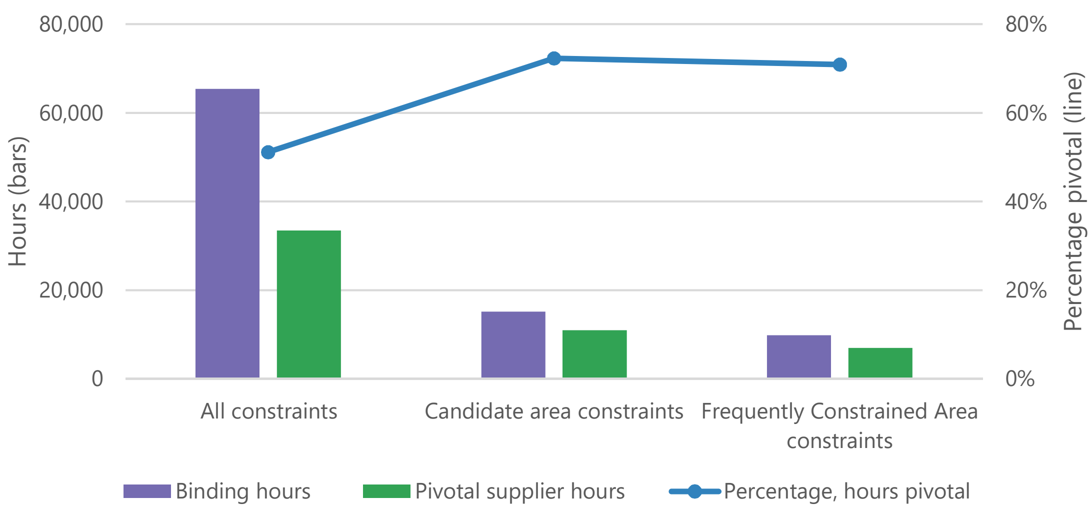
[10] Evaluation areas are determined by the geographical concentration of pivotal supplier hours.

[11] Candidate areas meet the pivotal supplier hour test, in addition to the locational and electrical tests outlined in the methodology.

[12] Frequently Constrained Areas meet the candidate area requirements and the impact test requirements outlined in the methodology.

Figure 4-5 shows binding and pivotal supplier hours concentrations by area classification.

Figure 4-5 Binding hours and pivotal supplier hours, by area classification, 2022



For the 2022 study period, Frequently Constrained Area candidates make up 23 percent of the binding hours and 33 percent of the pivotal supplier hours. The proposed Frequently Constrained Areas account for 15 percent of the binding hours and 21 percent of the pivotal supplier hours. Of note, all constraints carried a 51 percent ratio of pivotal supplier hours to binding hours. Whereas, the Frequently Constrained Area candidates and proposed Frequently Constrained Areas carried concentrations of 72 and 71 percent respectively. In general, when the constraints within these areas bind, there is at least one pivotal supplier 41 percent[13] more often than the other areas overall.

Figure 4-6 shows the pivotal hour heat map and the Frequently Constrained Area candidate resources associated with the Frequently Constrained Area candidates.

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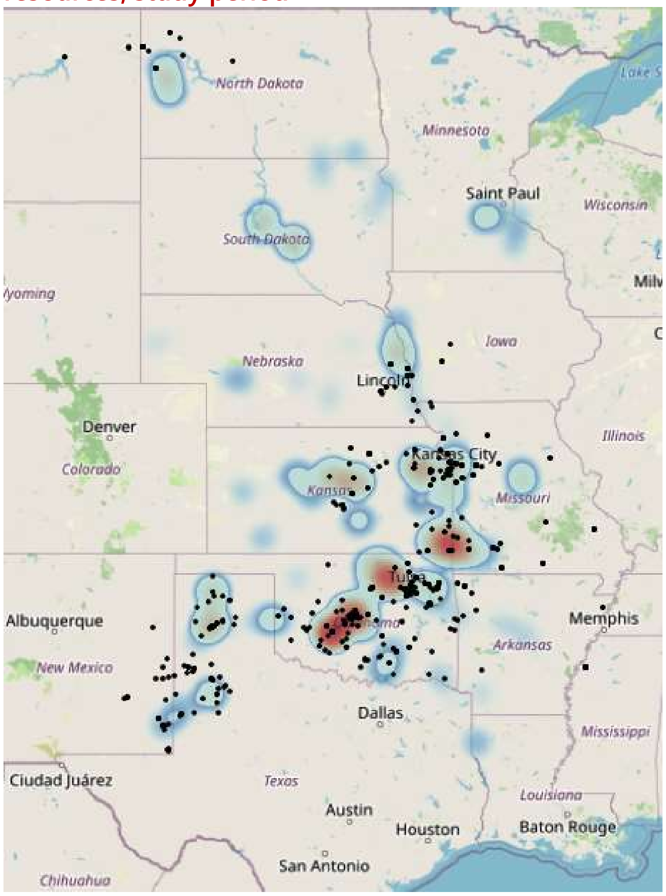
[13] (72% - 51%) / 51% = 41%

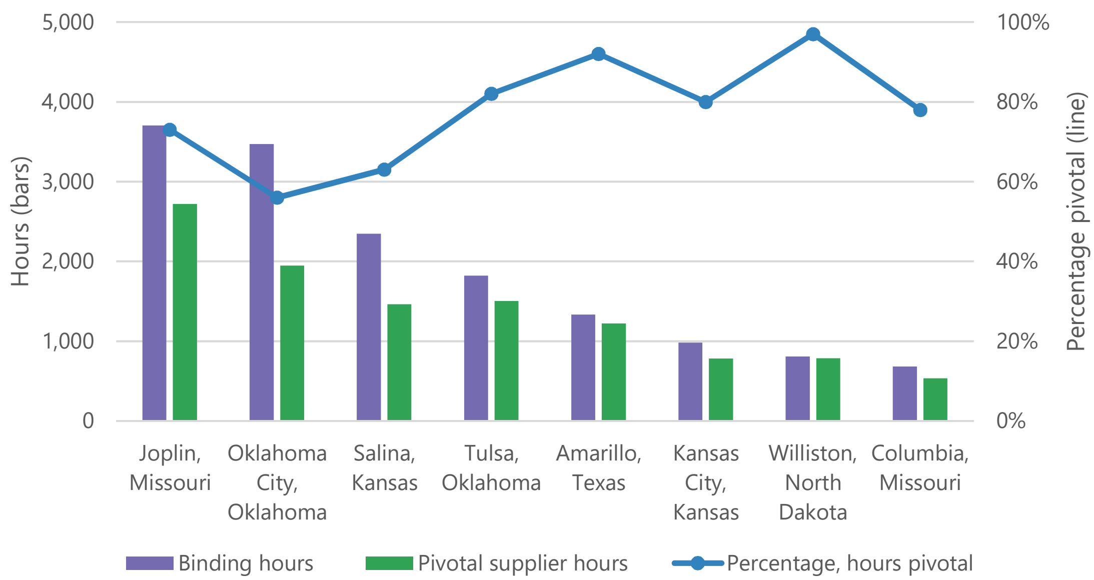
Figure 4-6 Heat map, pivotal supplier hours, and Frequently Constrained Area candidate resources, study period



A significant asset enjoyed by customers and participants within the Integrated Marketplace is generator fuel diversity. Each fuel and related generator has benefits and limitations. It is the combination of these characteristics that leads to a more robust system overall. A significant proportion of the generators in SPP carry a very low fuel cost. By extension these resources often earn commitments in the day-ahead market and produce energy in real-time. The majority of these resources exist in the western portions of the footprint and do not reside near population centers. In an attempt to serve the load in the population centers within SPP, and beyond SPP, resources compete for the same transmission capacity. Congestion materializes when the demand approaches, meets, or exceeds the transmission capacity. In SPP, the transmission in the southeastern and eastern portions of the footprint is often in high demand due to its proximity to load. This causes congestion to materialize in these areas, and as such, resources in an electrical position to alleviate this congestion will often reside on the opposite side of the general direction of power flows. This is why the map shows material Frequently Constrained Area candidate resource concentrations in the southeastern and eastern portions of the footprint.

Figure 4-7 provides more information on the binding and pivotal supplier hours within the Frequently Constrained Area candidates for the 2022 study period.

Figure 4-7 Binding hours and pivotal supplier hours, Frequently Constrained Area candidates, study period



For the 2022 study period, we observed a significant concentration of both binding hours and pivotal supplier hours in these areas. As the quantity of binding and pivotal supplier hours decreased, the percentage of pivotal supplier hours to binding hours increased. We have observed this trend previously but the relationship does not always hold. On the other hand, a trend that tends to permeate over time is elevated concentrations of pivotal supplier hours to binding hours for areas near the footprint's borders. In these cases, there is often a single pivotal supplier contributing to the quantity of binding hours and by extension pivotal supplier hours.

Binding and pivotal supplier hours are constraint level calculations summed over the constraints within the Frequently Constrained Area candidates. Table 4-8 displays the constraint counts within each Frequently Constrained Area candidate.

Table 4-8 Frequently Constrained Area candidate primary and secondary constraint counts

FCA candidate	Number of primary and secondary constraints	Percentage of pivotal supplier hours, primary constraint to all constraints
Oklahoma City, Oklahoma	9	93%
Tulsa, Oklahoma	2	100%
Joplin, Missouri	20	60%
Columbia, Missouri	1	100%
Kansas City, Kansas	7	73%
Salina, Kansas	5	52%
Williston, North Dakota	1	100%
Amarillo, Texas	4	96%
FCA candidate, total	**49**	**82%**

While the constraint counts vary among the Frequently Constrained Area candidates, each candidate area exceeded 500 binding hours and 500 pivotal supplier hours over their respective constraints.

Table 4-9 lists the top binding constraints for the study period along with binding hours, pivotal supplier hours, and geographic area.

Table 4-9 Top ten binding constraints

Constraint name	Binding constraint hours	Pivotal supplier hours	Geographical area
TEMP89_22229	2,397	1,290	Oklahoma City, Oklahoma
TMP499_26328	1,959	267	Forman, North Dakota
TMP270_23432	1,821	1,501	Tulsa, Oklahoma

Constraint name	Binding constraint hours	Pivotal supplier hours	Geographical area
CIMXF3CIMXF2	1,538	1,226	Oklahoma City, Oklahoma
TMP266_27514	1,420	859	Joplin, Missouri
TMP551_26749	1,402	73	Amarillo, Texas
OSAWEBCLESOO	1,301	876	Tulsa, Oklahoma
SMKSUMPOSAXT	1,177	765	Salina, Kansas
TMP374_25996	870	484	Oklahoma City, Oklahoma
NEORIVNEOBLC	831	781	Joplin, Missouri

TEMP89_22229	Gracemont-Anadarko 138kV (WFEC-OGE) ftlo Washita-Southwestern 138kV (CSWS-WFEC)
TMP499_26328	Forman Xfmr 230/1 kV ftlo Hankinson-Wahpeton 230kV (OTP)
TMP270_23432	Cleveland-Cleveland AECI 138 kV (AECI-GRDA) ftlo Cleveland-Tulsa North 345 kV (CSWS-GRDA)
CIMXF3CIMXF2	Cimarron Xfmr 345/1 kV fto 3 contingent elements of Cimarron Xfmr (OKGE)
TMP266_27514	Franklin transformer 161/69kV (WR) ftlo Franklin-Litchfield 161kV (WR)
TMP551_26749	Conway-Kirby Sw. Station 115kV (SPS) ftlo Nichols-Grapevine 230kV (SPS)
OSAWEBCLESOO	Osage-Webb Tap 138 kV (CSWS-OKG) ftlo Sooner-Cleveland 345 kV (GRDA-OKGE)
SMKSUMPOSAXT	Smokey Hills – Summit 230kV (MIDW) ftlo Macon – Axtell 345 (NPPD)
TMP374_25996	Gracemont-Anadarko 138kV (WFEC-OGE) ftlo Treasure Island – Lawton Eastside 345kV (CSWS)
NEORIVNEOBLC	Neosho-Riverton 161 kV (EDE-WR) ftlo Neosho-Blackberry 345kV (AECI-WR)

In the 2022 study period, the top 10 constraints, ranked by binding hours, contributed nearly 15,000 binding hours and more than 8,000 pivotal supplier hours. In the previous study period, the top 10 constraints, ranked by binding hours, amounted to 9,000 binding hours and less than 3,000 pivotal supplier hours. This equates to a 63 percent increase in binding hours and a 198 percent increase in pivotal supplier hours year over year.

Table 4-10 shows the number of resources included in each Frequently Constrained Area candidate and the corresponding capacity in each candidate area.

Table 4-10 Candidate resource summary

FCA candidate	Number of resources	Total capacity in megawatts	Potential relief capability in megawatts	Relief capability as percentage of total capacity
Oklahoma City, Oklahoma	89	6,512	1,036	16%

FCA candidate	Number of resources	Total capacity in megawatts	Potential relief capability in megawatts	Relief capability as percentage of total capacity
Tulsa, Oklahoma	31	1,747	109	6%
Joplin, Missouri	161	17,435	1,700	10%
Columbia, Missouri	13	555	34	6%
Kansas City, Kansas	124	12,617	1,772	14%
Salina, Kansas	30	1,227	95	8%
Williston, North Dakota	26	1,779	627	35%
Amarillo, Texas	97	10,503	2,529	24%

The total capacity is the sum of the registered maximum capacity of all resources in the Frequently Constrained Area candidate. An area's relief capability is the sum of each resource's registered maximum capacity multiplied by the constituent resource's average shift factor during the study period to a constraint in the Frequently Constrained Area candidate. The calculation represents an observed best-case potential relief capability.

The final step is to determine the number of hours each Frequently Constrained Area candidate was both binding and susceptible to the exercise of market power by applying a price impact test or impact analysis (see Study process.) The price impacts were computed for each five-minute interval in the study period. The results are represented and tested at the hourly granularity. If the price impact on a single candidate resource exceeds the price impact threshold, then the Frequently Constrained Area candidate is deemed susceptible to the exercise of market power in the presence of a pivotal supplier. We display the results of this impact test in Table 4-11.

Table 4-11 Impact analysis results

FCA Candidate	Binding hours over $25/MWh impact threshold	FCA total		
		Binding hours	Pivotal supplier hours	Percent hours with pivotal supplier
Oklahoma City, Oklahoma	2,285	3,469	1,947	56%
Tulsa, Oklahoma	2,152	1,821	1,501	82%
Joplin, Missouri	1,463	3,704	2,718	73%
Williston, North Dakota	513	809	785	97%

The areas shown in the table above met the test, but Columbia, Kansas City, Salina, and Amarillo did not. These areas met all Frequently Constrained Area candidate requirements, but the price impact fell short of the $25/MWh threshold. This illustrates the significance of locational marginal prices in determining the final Frequently Constrained Areas. Even if these areas were to be included as Frequently Constrained Areas, the prices would often fall below the mitigation threshold.

Conclusion:

During this study period binding hours, pivotal supplier hours, and congestion reached record levels. Given this development, the study results reflect the material increase in participants' ability to exercise market power. As the resource mix and transmission infrastructure changes, so too will the flow of power and the ability of participants influence market outcomes. The aim of the Frequently Constrained Areas study is to follow the tariff and limit the exercise of market power.

5 APPENDIX

5.1 Impact analysis, FCA candidates

FCA candidate	Binding hours over $25/MWh impact threshold	FCA total		
		Binding hours	Pivotal supplier hours	Percent hours with pivotal supplier
Oklahoma City, Oklahoma	2,285	3,469	1,947	56%
Tulsa, Oklahoma	2,152	1,821	1,501	82%
Joplin, Missouri	1,463	3,704	2,718	73%
Columbia, Missouri	369	682	535	78%
Kansas City, Kansas	197	982	783	80%
Salina, Kansas	8	2,344	1,461	63%
Williston, North Dakota	513	809	785	97%
Amarillo, Texas	301	1,333	1,220	92%

5.2 Frequently Constrained Area resource summary by fuel type and megawatt capacity

Fuel type	FCA area			
	Joplin, Missouri	Oklahoma City, Oklahoma	Tulsa, Oklahoma	Williston, North Dakota
Coal	3,405	—	—	—
Fuel oil	59	13	7	---
Municipal solid waste	6	—	3	—
Natural gas	11,961	3,629	1,309	611
Other fuel	194	38	41	186

Water	600	—	386	218
Wind	1,210	2,832	—	764

5.3 Frequently Constrained Area resource summary by fuel type and resource count

Fuel type (Number of Resources)	FCA Area			
	Joplin, Missouri	Oklahoma City, Oklahoma	Tulsa, Oklahoma	Williston, North Dakota
Coal	10	—	—	—
Fuel oil	5	2	1	—
Municipal solid waste	2	—	1	—
Natural gas	73	32	7	16
Other fuel	41	34	12	3
Water	23	—	10	2
Wind	7	21	—	5

5.4 Frequently Constrained Area constraints

Frequently Constrained Area constraints		
Constraint name	**Frequently Constrained Area**	**Element(s)**
TEMP23_22895	Joplin	LN BLACKBRY - JASPER7 345 kV - LN NSES - RAM452 161 kV
TEMP89_22229	Oklahoma City	LN WASHIT1 - SW_STA 138 kV - LN GRACMONT - ANADARKO 138 kV
TMP132_27439	Joplin	LN LACYGNE - N345 345 kV - LN NEORDG - N345 345 kV
TMP145_28172	Joplin	LN N345 - BLACKBRY 345 kV - LN GREC3 - GRDA17 345 kV
TMP207_27992	Joplin	LN N345 - BLACKBRY 345 kV - LN LITC - ASB3491 161 kV

Frequently Constrained Area constraints		
Constraint name	**Frequently Constrained Area**	**Element(s)**
TMP257_28102	Joplin	LN NSES - N345 138 kV - XF N345 1/13.8 kV
TMP261_28366	Joplin	LN N345 - BLACKBRY 345 kV - XF N345 345/1 kV
TMP266_27514	Joplin	LN FRANKLN5 - LITC 161 kV - XF FRANKLN5 161/69 kV
TMP270_23432	Tulsa	LN CLEVLND7 - CLEV_AEC 138 kV - LN CLEVLND7 - TULSA_NO 345 kV
TMP285_27302	Oklahoma City	LN CIMARRON - TUTCONTP 138 kV - LN MINCO - GRACMONT 345 kV
TMP290_26120	Oklahoma City	LN SWEETWT6 - CHISHOLM 230 kV - LN HITCH - CARPENTR 345 kV
TMP317_28279	Joplin	LN N345 - BLACKBRY 345 kV - XF GRDA17 345/10 kV
TMP375_27507	Joplin	LN LACYGNE - N345 345 kV - LN WOLF - BENT 345 kV
TMP429_28393	Oklahoma City	LN TREASURE - LAW_ES 345 kV - XF GRACMONT 345/1 kV
TMP447_26210	Joplin	LN LACYGNE - N345 345 kV - LN WOLF - ROSE 345 kV
TMP473_26590	Joplin	LN LACYGNE - N345 345 kV - LN EMPEC - BURN 345 kV
TMP495_27346	Joplin	LN LACYGNE - N345 345 kV - LN CAN_RIVR - NEORDG 345 kV
TMP517_26129	Oklahoma City	LN SWEETWT6 - CHISHOLM 230 kV - LN BOBCAT7 - WDWRDEHV 345 kV
TMP667_28354	Joplin	LN LITC - ASB3491 161 kV - LN NSES - RAM452 161 kV
TMP673_28242	Oklahoma City	LN MATHWSN7 - CIMARRON 345 kV - LN MATHWSN7 - CIMARRON 345 kV
TMP677_28355	Joplin	LN NSES - N345 161 kV - XF N345 161/1 kV
SWECHIOKUTUC	Oklahoma City	LN SWEETWT6 - CHISHOLM 230 kV - LN TUCO - OKLAUNIO 345 kV
MIDFRAMINGRA	Oklahoma City	LN MDWST - FRNKLN1 138 kV - LN MINCO - GRACMONT 345 kV
STLJOPORARIV	Joplin	LN STL4391 - JOP1451 161 kV - LN RAM452 - ORO1101 161 kV

Frequently Constrained Area constraints		
Constraint name	**Frequently Constrained Area**	**Element(s)**
NEORIVNEOBLC	Joplin	LN NSES - RAM452 161 kV - LN N345 - BLACKBRY 345 kV
NEORIVASBLIT	Joplin	LN NSES - RAM452 161 kV - LN LITC - ASB3491 161 kV
FRAMIDCANCED	Oklahoma City	LN MDWST - FRNKLN1 138 kV - LN CDRLN - CANDN 138 kV
CHAWATCHAPAT	Williston	LN CHAR_CK - WATFORD 230 kV - LN CHAR_CK - PATENT_G 345 kV
DAKMARLACNEO	Joplin	LN DAKOTA - MARM 161 kV - LN LACYGNE - N345 345 kV
OSAWEBCLESOO	Tulsa	LN OSAGE_OG - WEBBTAP4 138 kV - LN SONR1 - CLEVLND7 345 kV
TEMP28_28194	Joplin	LN NSES - CRAW 69 kV - LN JAY_HAWK - FRANKLN5 161 kV
TMP336_28167	Joplin	LN NSES - MARM 161 kV - LN N345 - BLACKBRY 345 kV

5.5 Frequently Constrained Area resources

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
AECC_ELKINS	AECC_ELKINS	Natural gas	Joplin
AECC_FITZHUGH	AECC_FITZHUGH_1X0	Natural gas	Joplin
AECC_FITZHUGH	AECC_FITZHUGH_1X1	Natural gas	Joplin
AECC_FLTCREEK	AECC_FLTCREEK	Coal	Joplin
AECC_HYDRO13	AECC_HYDRO13	Water	Joplin
BLUECANYON2	BLUECANYON2	Wind	Oklahoma City
BLUECANYON5	BLUECANYON5	Wind	Oklahoma City
BLUECANYON6	BLUECANYON6	Wind	Oklahoma City
COFFEYVILLE_7	COFFEYVILLE_7	Natural gas	Joplin
COWP_GEN1	COWP_GEN1	Natural gas	Joplin
COWP_GEN2	COWP_GEN2	Natural gas	Joplin
CROSSROADS1	CROSSROADS1	Natural gas	Joplin
CROSSROADS2	CROSSROADS2	Natural gas	Joplin
CROSSROADS3	CROSSROADS3	Natural gas	Joplin
CROSSROADS4	CROSSROADS4	Natural gas	Joplin
CSWCOMANCHE1	CSWCOMANCHE1	Natural gas	Oklahoma City
CSWFLINTCREEK1	CSWFLINTCREEK1	Coal	Joplin

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
CSWMATTISON1	CSWMATTISON1	Natural gas	Joplin
CSWMATTISON2	CSWMATTISON2	Natural gas	Joplin
CSWMATTISON3	CSWMATTISON3	Natural gas	Joplin
CSWMATTISON4	CSWMATTISON4	Natural gas	Joplin
CSWNARROWS1	CSWNARROWS1	Water	Joplin
CSWNORTHEASTERN1	CSWNORTHEASTERN1	Natural gas	Joplin
CSWNORTHEASTERN1	CSWNORTHEASTERN1	Natural gas	Tulsa
CSWNORTHEASTERN2	CSWNORTHEASTERN2	Natural gas	Joplin
CSWNORTHEASTERN2	CSWNORTHEASTERN2	Natural gas	Tulsa
CSWNORTHEASTERN3	CSWNORTHEASTERN3	Coal	Joplin
CSWRIVERSIDE1	CSWRIVERSIDE1	Natural gas	Joplin
CSWRIVERSIDE2	CSWRIVERSIDE2	Natural gas	Joplin
CSWRIVERSIDE3	CSWRIVERSIDE3	Natural gas	Joplin
CSWRIVERSIDE4	CSWRIVERSIDE4	Natural gas	Joplin
CSWS.7CBY.7CBYWIND	CSWS.7CBY.7CBYWIND	Wind	Oklahoma City
CSWS.AECC.DRIFTSAND	CSWS.AECC.DRIFTSAND	Wind	Oklahoma City
CSWS.AECC.WILDHORSE	CSWS.AECC.WILDHORSE	Wind	Joplin
CSWS.EKCW.EKCW	CSWS.EKCW.EKCW	Wind	Oklahoma City
CSWS.FPLP.RSES.MSR	CSWS.FPLP.RSES.MSR	Other fuel	Oklahoma City
CSWS.HCPP.RBPW	CSWS.HCPP.RBPW	Wind	Oklahoma City
CSWS.RSPA.RUSHSPRWNDA	CSWS.RSPA.RUSHSPRWNDA	Wind	Oklahoma City
CSWS.RSPB.RUSHSPRWNDB	CSWS.RSPB.RUSHSPRWNDB	Wind	Oklahoma City
CSWS.TNSK.CADO	CSWS.TNSK.CADO	Wind	Oklahoma City
CSWS.TNSK.ELKCITY2	CSWS.TNSK.ELKCITY2	Wind	Oklahoma City
CSWS.TNSK.GREENCOUNTRY	CSWS.TNSK.GREENCOUNTRY	Natural gas	Joplin
CSWS.TNSK.GREENCOUNTRY2	CSWS.TNSK.GREENCOUNTRY2	Natural gas	Joplin
CSWS.TNSK.GREENCOUNTRY3	CSWS.TNSK.GREENCOUNTRY3	Natural gas	Joplin
CSWS.TNSK.KIAPB1	CSWS.TNSK.KIAPB1_1X0	Natural gas	Joplin
CSWS.TNSK.KIAPB1	CSWS.TNSK.KIAPB1_1X1	Natural gas	Joplin
CSWS.TNSK.KIAPB1	CSWS.TNSK.KIAPB1_2X1	Natural gas	Joplin
CSWS.TNSK.KIAPB2	CSWS.TNSK.KIAPB2_1X0	Natural gas	Joplin
CSWS.TNSK.KIAPB2	CSWS.TNSK.KIAPB2_2X1	Natural gas	Joplin
CSWS.TNSK.KIAPB2	CSWS.TNSK.KIAPB2_1X1	Natural gas	Joplin
CSWS.VOLT.0044	CSWS.VOLT.0044	Other fuel	Joplin
CSWS.VOLT.0044	CSWS.VOLT.0044	Other fuel	Tulsa
CSWS.VOLT.0053	CSWS.VOLT.0053	Other fuel	Joplin
CSWS.VOLT.0055	CSWS.VOLT.0055	Other fuel	Joplin
CSWS.VOLT.0055	CSWS.VOLT.0055	Other fuel	Tulsa
CSWS.VOLT.0056	CSWS.VOLT.0056	Other fuel	Joplin
CSWS.VOLT.0056	CSWS.VOLT.0056	Other fuel	Tulsa
CSWS.VOLT.0057	CSWS.VOLT.0057	Other fuel	Joplin
CSWS.VOLT.0060	CSWS.VOLT.0060	Other fuel	Joplin
CSWS.VOLT.0060	CSWS.VOLT.0060	Other fuel	Oklahoma City

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
CSWS.VOLT.0076	CSWS.VOLT.0076	Other fuel	Joplin
CSWS.VOLT.0077	CSWS.VOLT.0077	Other fuel	Joplin
CSWS.VOLT.0078	CSWS.VOLT.0078	Other fuel	Oklahoma City
CSWS.VOLT.0079	CSWS.VOLT.0079	Other fuel	Joplin
CSWS.VOLT.0080	CSWS.VOLT.0080	Other fuel	Joplin
CSWS.VOLT.0080	CSWS.VOLT.0080	Other fuel	Tulsa
CSWS.VOLT.0081	CSWS.VOLT.0081	Other fuel	Joplin
CSWS.VOLT.0082	CSWS.VOLT.0082	Other fuel	Joplin
CSWS.VOLT.0082	CSWS.VOLT.0082	Other fuel	Tulsa
CSWS.VOLT.0083	CSWS.VOLT.0083	Other fuel	Joplin
CSWS.VOLT.0084	CSWS.VOLT.0084	Other fuel	Joplin
CSWS.VOLT.0084	CSWS.VOLT.0084	Other fuel	Tulsa
CSWS.VOLT.0086	CSWS.VOLT.0086	Other fuel	Joplin
CSWS.VOLT.0114	CSWS.VOLT.0114	Other fuel	Joplin
CSWS.VOLT.0114	CSWS.VOLT.0114	Other fuel	Tulsa
CSWS.VOLT.0122	CSWS.VOLT.0122	Other fuel	Joplin
CSWS.VOLT.0122	CSWS.VOLT.0122	Other fuel	Tulsa
CSWS.VOLT.0124	CSWS.VOLT.0124	Other fuel	Joplin
CSWS.VOLT.0124	CSWS.VOLT.0124	Other fuel	Tulsa
CSWS.VOLT.0135	CSWS.VOLT.0135	Other fuel	Joplin
CSWS.VOLT.0144	CSWS.VOLT.0144	Other fuel	Oklahoma City
CSWS.VOLT.0145	CSWS.VOLT.0145	Other fuel	Oklahoma City
CSWS.WTHW.WTHW	CSWS.WTHW.WTHW	Wind	Oklahoma City
CSWSOUTHWESTERN1	CSWSOUTHWESTERN1	Natural gas	Oklahoma City
CSWSOUTHWESTERN2	CSWSOUTHWESTERN2	Natural gas	Oklahoma City
CSWSOUTHWESTERN3	CSWSOUTHWESTERN3	Natural gas	Oklahoma City
CSWSOUTHWESTERN4	CSWSOUTHWESTERN4	Natural gas	Oklahoma City
CSWSOUTHWESTERN5	CSWSOUTHWESTERN5	Natural gas	Oklahoma City
CSWTULSA2	CSWTULSA2	Natural gas	Joplin
CSWTULSA2	CSWTULSA2	Natural gas	Tulsa
CSWTULSA4	CSWTULSA4	Natural gas	Joplin
CSWTULSA4	CSWTULSA4	Natural gas	Tulsa
CSWWELEETKA4	CSWWELEETKA4	Natural gas	Joplin
CSWWELEETKA5	CSWWELEETKA5	Natural gas	Joplin
DEMPSEY_RIDGE_WIND	DEMPSEY_RIDGE_WIND	Wind	Oklahoma City
EDE.KINGSPOINT	EDE.KINGSPOINT	Wind	Joplin
EDE.NORTHFORK	EDE.NORTHFORK	Wind	Joplin
EDE.SLCC	EDE.SLCC_2X1	Natural gas	Joplin
EDE.SLCC	EDE.SLCC_1X1	Natural gas	Joplin
EDE_EC_01	EDE_EC_01	Natural gas	Joplin
EDE_EC_02	EDE_EC_02	Natural gas	Joplin
EDE_EC_03	EDE_EC_03	Natural gas	Joplin
EDE_EC_04	EDE_EC_04	Natural gas	Joplin

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
EDE_OZD_5	EDE_OZD_5	Water	Joplin
EDE_OZD_6	EDE_OZD_6	Water	Joplin
EDE_OZD_7	EDE_OZD_7	Water	Joplin
EDE_OZD_8	EDE_OZD_8	Water	Joplin
EDE_PLUMPOINT	EDE_PLUMPOINT	Coal	Joplin
EDE_RIV_10	EDE_RIV_10	Natural gas	Joplin
EDE_RIV_11	EDE_RIV_11	Natural gas	Joplin
EDE_RIV_12	EDE_RIV_12_1X1_DF	Natural gas	Joplin
EDE_RIV_12	EDE_RIV_12_1X1	Natural gas	Joplin
EDE_SL_01	EDE_SL_01	Natural gas	Joplin
GRDA.COFF10	GRDA.COFF10	Natural gas	Joplin
GRDA.COFF8	GRDA.COFF8	Natural gas	Joplin
GRDA.COFF9	GRDA.COFF9	Natural gas	Joplin
GRDA.GREC2	GRDA.GREC2	Coal	Joplin
GRDA.GREC3	GRDA.GREC3	Natural gas	Joplin
GRDA.SEC1	GRDA.SEC1	Natural gas	Joplin
GRDA.SEC1	GRDA.SEC1	Natural gas	Tulsa
GRDA.SEC2	GRDA.SEC2	Natural gas	Joplin
GRDA.SEC2	GRDA.SEC2	Natural gas	Tulsa
GRDA.SEC3	GRDA.SEC3	Natural gas	Joplin
GRDA.SEC3	GRDA.SEC3	Natural gas	Tulsa
GRDA.VOLT.0130	GRDA.VOLT.0130	Other fuel	Joplin
GRDA.VOLT.0130	GRDA.VOLT.0130	Other fuel	Tulsa
KACYLFG	KACYLFG	Municipal solid waste	Joplin
KCPL.PRQUEEN	KCPL.PRQUEEN	Wind	Joplin
KERR_1	KERR_1	Water	Joplin
KERR_1	KERR_1	Water	Tulsa
KERR_2	KERR_2	Water	Joplin
KERR_2	KERR_2	Water	Tulsa
KERR_3	KERR_3	Water	Joplin
KERR_3	KERR_3	Water	Tulsa
KERR_4	KERR_4	Water	Joplin
KERR_4	KERR_4	Water	Tulsa
KMEA_EMP3_GIRA6	KMEA_EMP3_GIRA6	Fuel oil	Joplin
KMEA_EMP3_GIRA7	KMEA_EMP3_GIRA7	Fuel oil	Joplin
MO.AM.FRED1.MP	MO.AM.FRED1.MP	Natural gas	Joplin
MO.AM.FRED2.MP	MO.AM.FRED2.MP	Natural gas	Joplin
MO.AM.LADD.MP	MO.AM.LADD.MP	Natural gas	Joplin
MPSNEVADAUN1	MPSNEVADAUN1	Fuel oil	Joplin
OKGE.FRONTIER	OKGE.FRONTIER_BASE	Natural gas	Oklahoma City
OKGE.FRONTIER	OKGE.FRONTIER_DUCT	Natural gas	Oklahoma City
OKGE.GLAS.GLAS	OKGE.GLAS.GLAS	Wind	Joplin

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
OKGE.GLAS.GLAS	OKGE.GLAS.GLAS	Wind	Oklahoma City
OKGE.LES.ARBKL	OKGE.LES.ARBKL	Wind	Oklahoma City
OKGE.OKGE.MT10	OKGE.OKGE.MT10	Natural gas	Oklahoma City
OKGE.OKGE.MT11	OKGE.OKGE.MT11	Natural gas	Oklahoma City
OKGE.OKGE.MT12	OKGE.OKGE.MT12	Natural gas	Oklahoma City
OKGE.OKGE.MT6	OKGE.OKGE.MT6	Natural gas	Oklahoma City
OKGE.OKGE.MT7	OKGE.OKGE.MT7	Natural gas	Oklahoma City
OKGE.OKGE.MT8	OKGE.OKGE.MT8	Natural gas	Oklahoma City
OKGE.OKGE.MT9	OKGE.OKGE.MT9	Natural gas	Oklahoma City
OKGE.OMPA.INDNHYDRO	OKGE.OMPA.INDNHYDRO	Water	Joplin
OKGE.RCKW.RCKWIND	OKGE.RCKW.RCKWIND	Wind	Oklahoma City
OKGE.RIVERVALLEY	OKGE.RIVERVALLEY	Coal	Joplin
OKGE.TNSK.DSW	OKGE.TNSK.DSW	Wind	Joplin
OKGE.VOLT.0026	OKGE.VOLT.0026	Other fuel	Oklahoma City
OKGE.VOLT.0027	OKGE.VOLT.0027	Other fuel	Oklahoma City
OKGE.VOLT.0028	OKGE.VOLT.0028	Other fuel	Oklahoma City
OKGE.VOLT.0029	OKGE.VOLT.0029	Other fuel	Oklahoma City
OKGE.VOLT.0030	OKGE.VOLT.0030	Other fuel	Oklahoma City
OKGE.VOLT.0031	OKGE.VOLT.0031	Other fuel	Oklahoma City
OKGE.VOLT.0033	OKGE.VOLT.0033	Other fuel	Oklahoma City
OKGE.VOLT.0034	OKGE.VOLT.0034	Other fuel	Joplin
OKGE.VOLT.0035	OKGE.VOLT.0035	Other fuel	Joplin
OKGE.VOLT.0036	OKGE.VOLT.0036	Other fuel	Joplin
OKGE.VOLT.0037	OKGE.VOLT.0037	Other fuel	Joplin
OKGE.VOLT.0038	OKGE.VOLT.0038	Other fuel	Joplin
OKGE.VOLT.0039	OKGE.VOLT.0039	Other fuel	Oklahoma City
OKGE.VOLT.0040	OKGE.VOLT.0040	Other fuel	Oklahoma City
OKGE.VOLT.0041	OKGE.VOLT.0041	Other fuel	Oklahoma City
OKGE.VOLT.0043	OKGE.VOLT.0043	Other fuel	Joplin
OKGE.VOLT.0049	OKGE.VOLT.0049	Other fuel	Oklahoma City
OKGE.VOLT.0061	OKGE.VOLT.0061	Other fuel	Oklahoma City
OKGE.VOLT.0062	OKGE.VOLT.0062	Other fuel	Oklahoma City
OKGE.VOLT.0064	OKGE.VOLT.0064	Other fuel	Oklahoma City
OKGE.VOLT.0065	OKGE.VOLT.0065	Other fuel	Joplin
OKGE.VOLT.0066	OKGE.VOLT.0066	Other fuel	Oklahoma City
OKGE.VOLT.0068	OKGE.VOLT.0068	Other fuel	Oklahoma City
OKGE.VOLT.0070	OKGE.VOLT.0070	Other fuel	Joplin
OKGE.VOLT.0071	OKGE.VOLT.0071	Other fuel	Joplin
OKGE.VOLT.0109	OKGE.VOLT.0109	Other fuel	Oklahoma City
OKGE.VOLT.0110	OKGE.VOLT.0110	Other fuel	Oklahoma City
OKGE.VOLT.0112	OKGE.VOLT.0112	Other fuel	Oklahoma City
OKGE.VOLT.0115	OKGE.VOLT.0115	Other fuel	Oklahoma City
OKGE.VOLT.0116	OKGE.VOLT.0116	Other fuel	Joplin

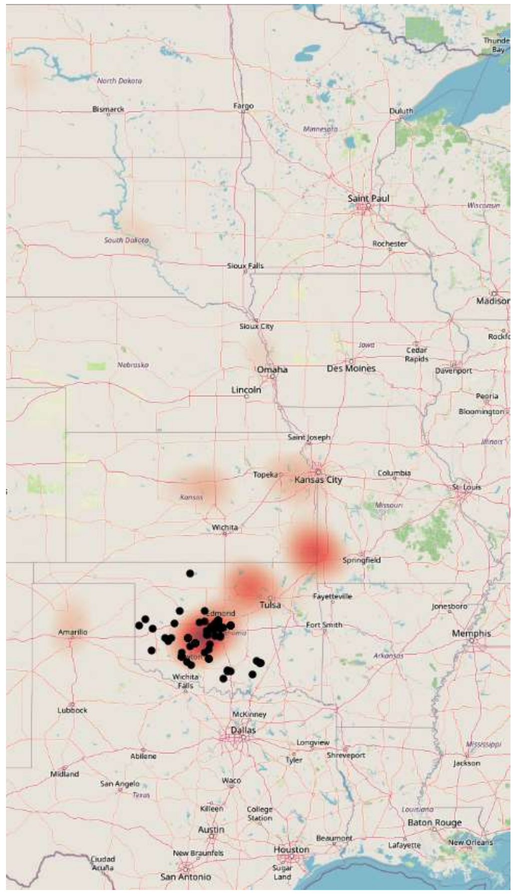
Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
OKGE.VOLT.0118	OKGE.VOLT.0118	Other fuel	Joplin
OKGE.VOLT.0125	OKGE.VOLT.0125	Other fuel	Joplin
OKGE.VOLT.0126	OKGE.VOLT.0126	Other fuel	Joplin
OKGE.VOLT.0127	OKGE.VOLT.0127	Other fuel	Joplin
OKGE.VOLT.0127	OKGE.VOLT.0127	Other fuel	Tulsa
OKGE.VOLT.0128	OKGE.VOLT.0128	Other fuel	Joplin
OKGE.VOLT.0128	OKGE.VOLT.0128	Other fuel	Tulsa
OKGE.VOLT.0129	OKGE.VOLT.0129	Other fuel	Oklahoma City
OKGE.VOLT.0132	OKGE.VOLT.0132	Other fuel	Oklahoma City
OKGE.VOLT.0134	OKGE.VOLT.0134	Other fuel	Joplin
OKGE.VOLT.0138	OKGE.VOLT.0138	Other fuel	Joplin
OKGE.VOLT.0140	OKGE.VOLT.0140	Other fuel	Oklahoma City
OKGE.VOLT.0143	OKGE.VOLT.0143	Other fuel	Joplin
OKGE.VOLT.0149	OKGE.VOLT.0149	Other fuel	Oklahoma City
OKGE.VOLT.0150	OKGE.VOLT.0150	Other fuel	Oklahoma City
OKGE.VOLT.0154	OKGE.VOLT.0154	Other fuel	Joplin
OKGE.VOLT.0155	OKGE.VOLT.0155	Other fuel	Joplin
OKGE.VOLT.0156	OKGE.VOLT.0156	Other fuel	Oklahoma City
OKGE.VOLT.0169	OKGE.VOLT.0169	Other fuel	Oklahoma City
OKGE.VOLT.0170	OKGE.VOLT.0170	Other fuel	Oklahoma City
OKGE.VOLT.0171	OKGE.VOLT.0171	Other fuel	Oklahoma City
OKGEHL6	OKGEHL6	Wind	Oklahoma City
OKGEHL7	OKGEHL7	Natural gas	Oklahoma City
OKGEHL8	OKGEHL8	Natural gas	Oklahoma City
OKGEHL910	OKGEHL910	Natural gas	Oklahoma City
OKGEMCC	OKGEMCC	Natural gas	Oklahoma City
OKGEMK4	OKGEMK4	Natural gas	Joplin
OKGEMK5	OKGEMK5	Natural gas	Joplin
OKGEMK6	OKGEMK6	Natural gas	Joplin
OKGESM1	OKGESM1	Coal	Joplin
OKGESM2	OKGESM2	Natural gas	Joplin
OKGESM3	OKGESM3	Natural gas	Joplin
OKGETALOGAWIND	OKGETALOGAWIND	Natural gas	Oklahoma City
OKGE_ORIGINWIND	OKGE_ORIGINWIND	Wind	Oklahoma City
OMPA_AEL	OMPA_AEL	Municipal solid waste	Joplin
OMPA_AEL	OMPA_AEL	Municipal solid waste	Tulsa
OMPA_KNGFISHER	OMPA_KNGFISHER	Fuel oil	Oklahoma City
OMPA_MANGUM	OMPA_MANGUM	Fuel oil	Oklahoma City
OMPA_PAWHUSKA	OMPA_PAWHUSKA	Fuel oil	Joplin
OMPA_PAWHUSKA	OMPA_PAWHUSKA	Fuel oil	Tulsa
ONETA	ONETA	Natural gas	Joplin

Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
ONETA_2	ONETA_2	Natural gas	Joplin
ONETA_3	ONETA_3	Natural gas	Joplin
ONETA_4	ONETA_4	Natural gas	Joplin
PENSACOLA_1	PENSACOLA_1	Water	Joplin
PENSACOLA_2	PENSACOLA_2	Water	Joplin
PENSACOLA_3	PENSACOLA_3	Water	Joplin
PENSACOLA_4	PENSACOLA_4	Water	Joplin
PENSACOLA_5	PENSACOLA_5	Water	Joplin
PENSACOLA_6	PENSACOLA_6	Water	Joplin
SALINA_1	SALINA_1	Water	Joplin
SALINA_1	SALINA_1	Water	Tulsa
SALINA_2	SALINA_2	Water	Joplin
SALINA_2	SALINA_2	Water	Tulsa
SALINA_3	SALINA_3	Water	Joplin
SALINA_3	SALINA_3	Water	Tulsa
SALINA_4	SALINA_4	Water	Joplin
SALINA_4	SALINA_4	Water	Tulsa
SALINA_5	SALINA_5	Water	Joplin
SALINA_5	SALINA_5	Water	Tulsa
SALINA_6	SALINA_6	Water	Joplin
SALINA_6	SALINA_6	Water	Tulsa
SPRM_JRCT1	SPRM_JRCT1	Natural gas	Joplin
SPRM_JRCT2	SPRM_JRCT2	Natural gas	Joplin
SPRM_MCCT1	SPRM_MCCT1	Natural gas	Joplin
SPRM_MCCT2	SPRM_MCCT2	Natural gas	Joplin
SPRM_SWCT1	SPRM_SWCT1	Natural gas	Joplin
SPRM_SWCT2	SPRM_SWCT2	Natural gas	Joplin
SPRM_SWPS1	SPRM_SWPS1	Coal	Joplin
SPRM_SWPS2	SPRM_SWPS2	Coal	Joplin
WAUE.AWD1.AURAWIND	WAUE.AWD1.AURAWIND	Wind	Williston
WAUE.BEPM.AURORA	WAUE.BEPM.AURORA	Wind	Williston
WAUE.BEPM.BURKE	WAUE.BEPM.BURKE	Wind	Williston
WAUE.BEPM.CULBERTSON1	WAUE.BEPM.CULBERTSON1	Natural gas	Williston
WAUE.BEPM.CULBERTSONWH	WAUE.BEPM.CULBERTSONWH	Other fuel	Williston
WAUE.BEPM.LCS1	WAUE.BEPM.LCS1	Natural gas	Williston
WAUE.BEPM.LCS2	WAUE.BEPM.LCS2	Natural gas	Williston
WAUE.BEPM.LCS3	WAUE.BEPM.LCS3	Natural gas	Williston
WAUE.BEPM.LCS4	WAUE.BEPM.LCS4	Natural gas	Williston
WAUE.BEPM.LCS5	WAUE.BEPM.LCS5	Natural gas	Williston
WAUE.BEPM.LCS6	WAUE.BEPM.LCS6	Natural gas	Williston
WAUE.BEPM.LINDAHL	WAUE.BEPM.LINDAHL	Wind	Williston
WAUE.BEPM.PGS1	WAUE.BEPM.PGS1	Natural gas	Williston
WAUE.BEPM.PGS11	WAUE.BEPM.PGS11	Natural gas	Williston

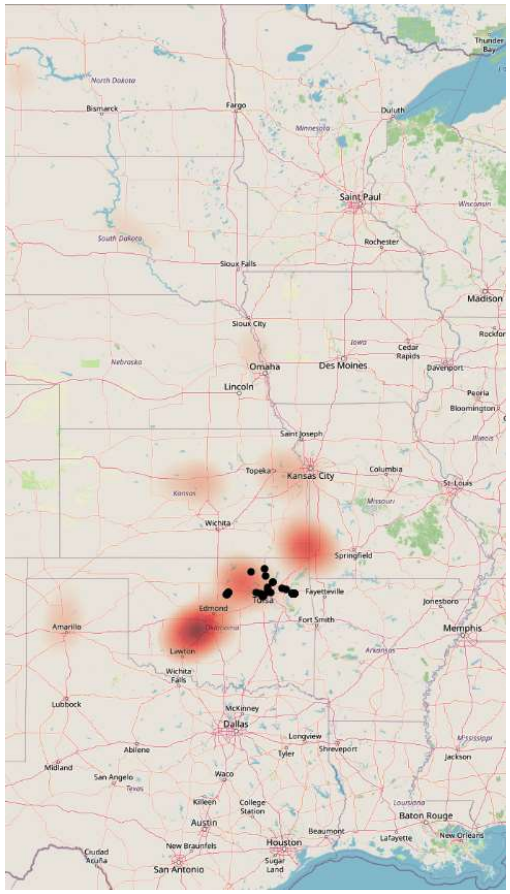
Frequently Constrained Area details			
Settlement location	**Resource**	**Fuel type**	**FCA area**
WAUE.BEPM.PGS12	WAUE.BEPM.PGS12	Natural gas	Williston
WAUE.BEPM.PGS13	WAUE.BEPM.PGS13	Natural gas	Williston
WAUE.BEPM.PGS14_16	WAUE.BEPM.PGS14_16	Natural gas	Williston
WAUE.BEPM.PGS17_19	WAUE.BEPM.PGS17_19	Natural gas	Williston
WAUE.BEPM.PGS2	WAUE.BEPM.PGS2	Natural gas	Williston
WAUE.BEPM.PGS20_22	WAUE.BEPM.PGS20_22	Natural gas	Williston
WAUE.BEPM.PGS3	WAUE.BEPM.PGS3	Natural gas	Williston
WAUE.BEPM.PW1	WAUE.BEPM.PW1	Wind	Williston
WAUE.FTPECK.1_3	WAUE.FTPECK.1_3	Water	Williston
WAUE.FTPECK.4_5	WAUE.FTPECK.4_5	Water	Williston
WAUE.VOLT.0152	WAUE.VOLT.0152	Other fuel	Williston
WAUE.VOLT.0172	WAUE.VOLT.0172	Other fuel	Williston
WFEC.PEOP.CENTRAHOMAEAST	WFEC.PEOP.CENTRAHOMAEAST	Natural gas	Joplin
WFEC.PEOP.CENTRAHOMAEAST	WFEC.PEOP.CENTRAHOMAEAST	Natural gas	Oklahoma City
WFEC.PEOP.CENTRAHOMAWEST	WFEC.PEOP.CENTRAHOMAWEST	Natural gas	Joplin
WFEC.PEOP.CENTRAHOMAWEST	WFEC.PEOP.CENTRAHOMAWEST	Natural gas	Oklahoma City
WFEC.PEOP.LELK	WFEC.PEOP.LELK	Wind	Oklahoma City
WFEC.PEOP.LITTLEDIXIE	WFEC.PEOP.LITTLEDIXIE	Natural gas	Oklahoma City
WFEC.PEOP.LITTLEDIXIE	WFEC.PEOP.LITTLEDIXIE	Natural gas	Joplin
WFEC_ANA_COMB_CYC_4	WFEC_ANA_COMB_CYC_4	Natural gas	Oklahoma City
WFEC_ANA_COMB_CYC_5	WFEC_ANA_COMB_CYC_5	Natural gas	Oklahoma City
WFEC_ANA_COMB_CYC_6	WFEC_ANA_COMB_CYC_6	Natural gas	Oklahoma City
WFEC_ANA_GENCO_7	WFEC_ANA_GENCO_7	Natural gas	Oklahoma City
WFEC_ANA_GENCO_8	WFEC_ANA_GENCO_8	Natural gas	Oklahoma City
WFEC_ANA_ORME_10	WFEC_ANA_ORME_10	Natural gas	Oklahoma City
WFEC_ANA_ORME_11	WFEC_ANA_ORME_11	Natural gas	Oklahoma City
WFEC_ANA_ORME_9	WFEC_ANA_ORME_9	Natural gas	Oklahoma City
WFEC_ANA_STEAM_PLANT	WFEC_ANA_STEAM_PLANT	Natural gas	Oklahoma City
WFEC_BLUECAN_WIND_FARM	WFEC_BLUECAN_WIND_FARM	Wind	Oklahoma City
WFEC_HUGO_PLANT	WFEC_HUGO_PLANT	Coal	Joplin
WFEC_RKYRIDGE_WIND_FARM	WFEC_RKYRIDGE_WIND_FARM	Wind	Oklahoma City
WR.ERIE.EC	WR.ERIE.EC	Fuel oil	Joplin
WR.JAYHAWK	WR.JAYHAWK	Wind	Joplin
WR.VOLT.0119	WR.VOLT.0119	Other fuel	Joplin
WR_CH_CHAN14GT	WR_CH_CHAN14GT	Natural gas	Joplin

5.6 Frequently Constrained Area maps

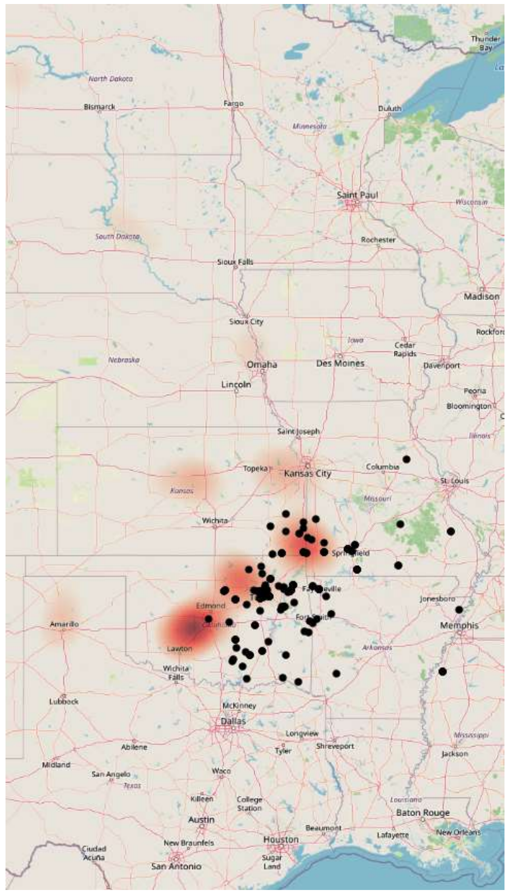
5.6.1 Oklahoma City, Oklahoma



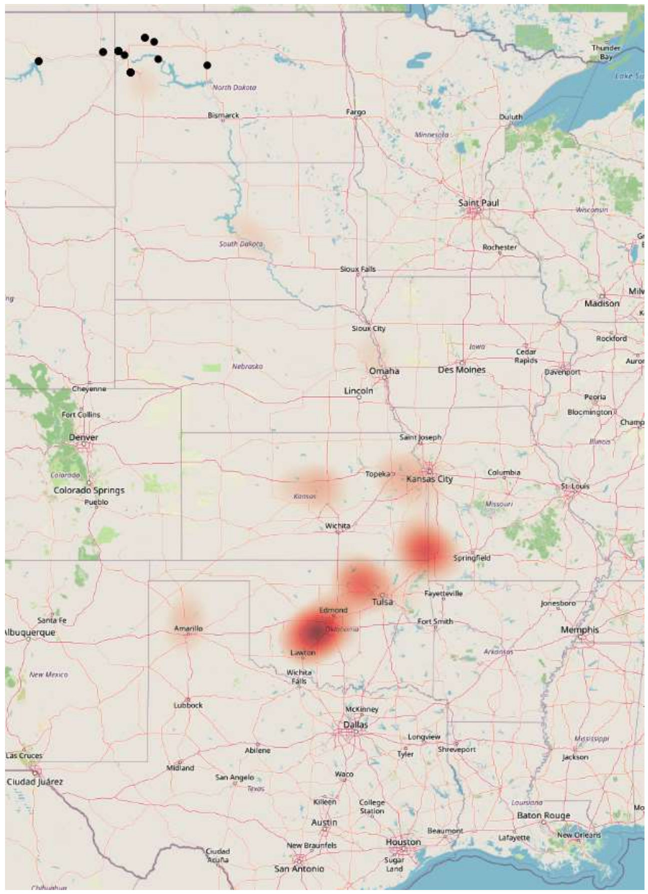
5.6.2 Tulsa, Oklahoma



5.6.3 Joplin, Missouri



5.6.4 Williston, North Dakota



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Appendix C-2

State of the Market Report
(Southwest Power Pool, Market Monitoring Unit)

STATE OF THE MARKET 2022

SPP Southwest Power Pool

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Acknowledgement

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Published

May 15, 2023

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1 EXECUTIVE SUMMARY

Many of the themes that have been identified in previous years, such as increasing wind generation, make-whole payments, and resource adequacy challenges, continue and deepen in 2022. Wind generation continues to play an increasing role in SPP's markets. This has produced many challenges including increasing variability and uncertainty of supply, out-of-market actions to ensure system reliability, higher make-whole payments, and increased negative prices. These, however, are not necessarily new developments in the SPP market for 2022.

With effects of the February 2021 winter weather event skewing many of the metrics during that year, some comparisons in this report are made by comparing 2022 results to 2021 results excluding February. Any metrics having this exclusion will be noted.

The following list identifies key observations in the SPP marketplace during 2022.

- **Day-ahead market and real-time market prices increased.** The average day-ahead price was $48/MWh and the average real-time price was $43/MWh for 2022. When compared to 2021 with February prices excluded (this removes the effects of the winter weather event on prices), the day-ahead prices represent an 80 percent increase, and real-time prices represent a 75 percent increase over 2021. Higher gas prices in 2022 are the largest contributor for the increase.
- **Gas prices increased.** The average gas price for 2022 at the Panhandle Eastern hub was $5.83/MMBtu, an increase of 69 percent over 2021 (with February prices excluded).
- **Revenue neutrality uplift increased.** Revenue neutrality uplift was up markedly over 2021. Revenue neutrality uplift for 2022 was $548 million, up 92 percent from $285 million in 2021. Most of the increase can be attributed to an increase in the real-time congestion component, which was up 189 percent, from $226 million in 2021 to $653 million in 2022.
- **Make-whole payments increased.** When removing February from 2021 day-ahead make-whole payments, payments in 2022 of $173 million were up 130 percent from 2021 at $75 million. Likewise, reliability unit commitment make-whole payments were up 152 percent, from $116 million in 2021 (excluding February) to $292 million in 2022. Much of these increases can be attributed to the increase in natural gas prices.
- **Addition of wind resources has slowed.** In 2022, just over 1,500 MW nameplate capacity of new wind resources was added to the market. In comparison, 2021 added

nearly 3,200 MW of wind capacity and 2020 added just over 4,800 MW of new wind capacity. However, the generation interconnection queue still contains a large amount of new wind resources potentially to be added to the market, along with a growing amount of solar and battery/storage resources.

- **Wind penetration increased.** Installed nameplate wind capacity stood at 32,032 MW at the end of 2022. Wind generation capacity now accounts for 32 percent of installed nameplate capacity in the SPP market.
- **Generation mix changed.** In 2020, for the first time, wind resources produced the highest percentage of total generation in the market, displacing coal resources as the leading producer. That trend reverted back to coal being the largest producer of total generation in 2021, buoyed by high gas prices causing gas resources to be less economic. Wind resources recaptured the highest percentage in 2022 at nearly 38 percent of total generation, with coal resources producing just over 33 percent of total generation.
- **Negative priced intervals decreased in the day-ahead market, but increased in the real-time market.** The frequency of negative priced intervals decreased by one percentage point in the day-ahead market and increased by one percentage point in the real-time market over 2021. Just over seven percent of all asset owner intervals in the day-ahead market had negative prices, down from just under eight percent in 2021. Just over 15 percent of the real-time asset owner intervals had negative prices, up from just under 15 percent in 2021. Although, the growth in negative prices intervals has slowed, most likely attributable to the slowing addition of new wind generation, the MMU remains concerned about continued increasing frequency of negative price intervals. Negative prices may not be a problem in and of themselves; however, they do indicate an increase in surplus energy on the system and/or an increase in available low-cost generation.
- **Congestion costs increased.** Total congestion payments for 2022 were nearly $2.0 billion; up from $1.2 billion in 2021. This marked increase can primarily be attributed to the proximity of existing generation to load, the proximity of newly constructed generation to load, the outage of key transmission facilities, and the volatility in fuel prices.
- **Transmission congestion rights funding fell outside of the targeted range.** While the annual funding percentage increased to 88 percent in 2022 from 84 percent in 2021, the

annual shortfall increased by more than $85 million year over year. Much of this shortfall was the result of unaccounted for outages in the congestion hedging model.

- **Demand response capacity increased.** During 2022, 28 dispatchable demand response resources representing 186 MW of nameplate capacity were added to the SPP market. These resources ranged in size from 0.1 MW to 100 MW. At the end of 2022, there was 362 MW of dispatchable demand response resources installed nameplate capacity.
- **Market-to-market payments from MISO were up.** Net market-to-market payments from MISO to SPP for 2022 were $160 million, up 84 percent from $87 million in 2021.
- **Virtual profits decreased.** Average profit per cleared virtual megawatt after fees was $1.47/MW in 2022, down 20 percent from $1.84/MW (excluding February) in 2021.
- **Outaged capacity decreased.** Total outages for capacity taken out-of-service for maintenance decreased by nine percent from 2021 to 2022. Forced outages had a slight increase of two percent from 2021 to 2022.
- **Energy consumption increased.** Monthly average system energy consumption was up five percent compared to 2021. Most of this increase can be attributed to weather impacts and increased load.
- **Self-committed capacity increased slightly.** The average percent of total offered capacity by commitment status shows a less than one percentage point increase in self-commit status and a six percentage point decrease in market status. The capacity offered by the intra-day reliability unit commitment and short-term reliability unit commitment were up three percentage points and two percentage points, respectively.
- **Regional congestion patterns.** The areas that experienced the highest congestion costs in 2022 were the southeastern corner of the SPP footprint, as well as a concentrated area in southeast North Dakota. Much of Kansas, Nebraska, South Dakota, and a concentrated area in northwest Oklahoma experienced the lowest congestion costs for the year.
- **Overall, hedging covered congestion costs.** In aggregate, load-serving entities covered 137 percent of their congestion cost and non-load-serving entities covered 108 percent of their total congestion cost.
- **Individual congesting hedging ranged in performance.** Individual market participants hedged congestion with varying degrees of effectiveness. Overall 72 percent of load-serving entities recovered at least all of their congestion cost.

- **Auction revenue right funding decreased.** Auction revenue right funding decreased from 128 percent to 122 percent. The ARR surplus increased by more than $140 million year over year.
- **SPP markets remain competitive.** Structural and behavioral metrics indicate that the SPP markets have been competitive over the last several years. The market share, Herfindahl-Hirschman Index (HHI), and pivotal supplier analyses all indicate minimal to moderate potential structural market power in SPP markets outside of frequently constrained areas.
- **Offer mitigation increased slightly but remains rare.** Incremental energy offer mitigation in 2022 slightly increased in frequency in both the day-ahead and real-time markets. Despite the minor increase in mitigated resource hours, energy offer mitigation remains very rare, at 0.22 and 0.08 percent of resource hours in the day-ahead and real-time markets respectively. The total frequency of mitigation across all other products was similarly low and in line with prior years, with a slight uptick in spinning reserve mitigation concentrated in August and September.
- **Exercising market power remains rare.** Behavioral measures suggest that attempts to actually exercise market power by manipulating the price (economic withholding) or quantity (physical withholding) of generation are rare. The output gap, an inference of economically withheld generation, rose slightly compared to 2021. This was primarily driven by coal resources facing supply shortage issues. The level of physically unoffered generation remained level in 2021 and 2022 after disruptions to maintenance and outages in 2020 attributable to the COVID-19.
- **Resource adequacy issues persist.** The February 2021 winter weather event and December 2022 winter storm both highlighted that significant issues with SPP's resource adequacy approach persist and pose a significant risk to reliability. Key issues include a lack of a seasonal resource adequacy requirement, fuel availability risk, correlated output and outages among similar resources, and an accreditation process that does not reflect actual resource performance.

1.1 OVERVIEW

As with previous years, the largest component of total wholesale costs remains energy costs, which represented 96 percent of total costs in 2022. Historically, the percentage has remained around 96 percent since the start of the Integrated Marketplace in 2014. 2021 was an outlier; however, with make-whole payments of over $1 billion as a result of the 2021 winter weather event, that percentage decreased to 85 percent. Removing February from the calculation in 2021 results in energy costs being 95 percent of total wholesale market costs, which is much closer to the historical average.

The annual five-minute peak demand of 52,870 MW was 2.5 percent higher this year compared to last year, while total electricity consumption was up five percent. Of the 1,750 MW increase in nameplate generation capacity from 2021, 1,579 MW was from wind resources, 161 MW was from dispatchable demand response, and 10 MW was from solar resources.

Wind generation as a percent of total generation continued its steady climb as it represented nearly 38 percent of system generation in 2022, up from nearly 35 percent in 2021. After a rise from 2020 to 2021, coal generation decreased, representing just over 33 percent of total generation in 2022, down from nearly 36 percent in 2021. The increase in coal generation from 2020 to 2021 is primarily the result of higher gas prices in 2021 making coal generation more economic than some gas resources.

1.2 DAY-AHEAD AND REAL-TIME MARKET PERFORMANCE

Overall, both day-ahead and real-time energy prices were higher in 2022 compared to 2021 (when excluding February, which eliminates the effects of the February 2021 winter weather event). The average hourly day-ahead price of $48/MWh in 2022 was 80 percent higher than the 2021 price (with February excluded) of $27/MWh. Likewise, the average hourly real-time price of $43/MWh in 2022 was 75 percent higher than the 2021 price (with February excluded) of $25/MWh. Interestingly, even without excluding February 2021 from the real-time average price for 2021 (making the average $37/MWh), the 2022 real-time average was still 17 percent higher than 2021. Much of this increase can be attributed to higher loads and increased real-time congestion.

Gas prices were also up in 2022, with a monthly average of $5.83/MMBtu, an increase of 18 percent over 2021 (with February included) and an increase of 69 percent (with February excluded). The monthly average gas price ranged from $4.46/MMBtu in January to $8.03/MMBtu in August

Load participation in the day-ahead market dropped in 2022. The average monthly level of participation for the load assets was between 97 percent and 99 percent of the actual real-time load, with the annual average at 98 percent. Prior to 2022, the monthly level averaged between 98 and 101 percent, with annual averages of 100 percent in 2020 and 99 percent in 2021.

Additionally, on average for the year, wind generation was 2,800 MW higher in the real-time market compared to the amount scheduled in the day-ahead market on an hourly basis. This represents a continued and increasing challenge to the market as wind generation continues to increase substantially.

Virtual bids and offers may theoretically offset the under-scheduling of renewable supply in the day-ahead market, however, in net they did not as they averaged 1,450 MW of net virtual supply. Furthermore, it is important to recognize that even if virtual transactions were to match the quantity of under-scheduled renewables, the prices associated with the virtual offers are not likely to fully represent the offer prices of the renewable resources in order to preserve a profit margin.

In general, virtual transactions were profitable in the SPP market. Net profit before fees was $369 million in 2022, down from $680 million in 2021, but up from $72 million in 2020. Profits from virtual transactions were extraordinarily high in 2021 due to the effects of the winter weather event. When charges and transaction fees are included, net profit for virtual transactions was $116 million in 2022, down from $535 million in 2021, but up from $36 million in 2020. If February was removed from the 2021 calculations, net profit before fees would have been $213 million and after fees would have been $112 million.

Generation offers in the day-ahead market averaged just over 63 percent as market commitment status followed by self-commitment status at 14 percent of the total capacity commitments for 2021. This continues the trend of increasing market commitments and decreasing self-commitment since 2016.

SPP has designed a ramp capability product, which was implemented on March 1, 2022.[1] While the MMU generally supported the proposed design, the MMU did have some concerns with the design prior to implementation.[2] In addition to these concerns, the MMU identified an issue after implementation with the deliverability of ramp cleared by the ramp-up capability product.

[1] Tariff Revisions to Add Ramp Capability, FERC Docket No. ER20-1617.
[2] See MMU comments in Docket No. ER20-1617.

1.3 TRANSMISSION CONGESTION AND HEDGING

Locational marginal prices reflect the sum of the marginal cost of energy, the marginal cost of congestion, and the marginal cost of losses for each pricing interval at any given pricing location in the market. Certain locations of the footprint experience significant price movements resulting from congestion caused by high wind generation and transmission limitations.

The areas that experienced the highest congestion costs in 2022 were the southeastern corner of the SPP footprint as well as a concentrated area in southeast North Dakota. Much of Kansas, Nebraska, South Dakota, and a concentrated area in northwest Oklahoma experienced the lowest congestion costs for the year. The frequently constrained area study for 2021 identified southwest Missouri and southeast Oklahoma as frequently constrained areas and these areas continued to see elevated congestion prices in 2022.

Total congestion payments for 2022 were nearly $2 billion; up from $1.2 billion in 2021. This marked increase can primarily be attributed to the proximity of existing generation to load, the proximity of newly constructed generation to load, the outage of key transmission facilities, and the volatility in fuel prices. While most load-serving entities were able to successfully hedge their congestion exposure with auction revenue rights and transmission congestion rights, a handful of participants were under-hedged. The largest amount over-hedged was $162 million, while the largest amount under-hedged was $168 million.

1.4 UPLIFT COSTS

Generators receive make-whole payments to ensure that they receive sufficient revenue to cover energy, start-up, no-load, and operating reserve costs for both market and local reliability commitments. Make-whole payments are additional market payments in cases where prices result in revenue that is below a resource's cleared offers. These payments are intended to make resources whole to energy, commitment, and operating reserve costs.

For 2022, combined day-ahead and reliability unit commitment make-whole payments totaled just over $465 million. Reliability unit commitment make-whole payments represented $292 million, or 63 percent, of the total. Because of the February 2021 winter weather event, make-whole payments climbed to levels well beyond those ever experienced in the Integrated Marketplace. Even removing February from 2021 totals, make-whole payments were up from 2021 to 2022.

Day-ahead make-whole payments for 2021 (without February) totaled $75 million, compared $173 million in 2022, an increase of 130 percent. Reliability unit commitment make-whole payments for 2021 (without February) totaled $116 million, compared to $292 million in 2022, an increase of 152 percent. Much of the increase in make-whole payments can be attributed to higher gas prices overall for 2022. An additional driver for the increase in reliability unit commitment make-whole payments was for manual capacity commitments in the real-time market to meet ramping needs. The increase in capacity commitments was primarily caused by two factors. First, the increase in generation outages reduced the availability of capacity to meet uncertainty of both supply and demand. Second, the higher level of wind penetration on the system has increased the overall level of uncertainty in the market.

The MMU is very concerned about increasing make-whole payments. With the expectation that wind generation will continue to have an increasing role in the SPP market, uncertainty and ramping needs will continue to increase. Although the implementation of the ramping product has not yet produced anticipated results, the hope is that the uncertainty product will provide market signals for flexible ramping capability. Furthermore, additional rules are required to address MMU concerns with outages and their impacts to both market prices and make-whole payments.

Revenue neutrality uplift (RNU) ensures settlement payments/receipts for each real-time hourly settlement interval equals zero. Positive revenue neutrality uplift indicates that SPP receives insufficient revenue and collects from market participants. Negative revenue-neutrality uplift indicates where SPP receives excess revenue, which must be credited back to market participants.

Total revenue neutrality uplift for 2022 was $548 million, up 92 percent from 2021, and up ten-fold from $54.7 million in 2020. The two main components of revenue neutrality uplift are real-time congestion and real-time joint operating agreement (also known as market-to-market). The joint operating agreement component generally acts to decrease revenue neutrality uplift, while the congestion component generally acts to increase revenue neutrality uplift. The real-time joint operating agreement portion of revenue neutrality uplift was $162 million in 2022, an increase of 86 percent from $87 million in 2021. The real-time congestion component of revenue neutrality uplift was $653 million in 2022, an increase of 189 percent from $226 million in 2021. The increase in the real-time congestion component of revenue neutrality uplift has been the topic of much discussion over the past year. At the February 2023 Market Working Group meeting, SPP staff reported[3] on the increased congestion component. The SPP staff findings are discussed in section 4.2.5 of this report. The Market Monitoring Unit will continue

[3] https://spp.org/Documents/68790/MWG%20Agenda%20&%20Background%20Materials%2020230214-15.zip, item 18-RNU_February 2023 MWG.pptx.

to monitor the increased revenue neutrality uplift and will report additional findings in future reports.

1.5 COMPETITIVENESS ASSESSMENT

Overall, structural and behavioral metrics indicate that the SPP markets have been competitive over the last several years. The market share, HHI, and pivotal supplier analyses all indicate minimal to moderate potential structural market power in SPP markets outside of a few frequently congested areas.

The market share indicator in 2022 continued a trend of decreasing concentration after an acute rise following an intra-market merger that formed Evergy, Inc. in June 2018. In 2022, Evergy possessed the largest market share in over 99 percent of intervals above and below the 20 percent threshold. Market shares by the largest supplier exceeded the 20 percent threshold in 45 percent of hours during the year.

Meanwhile, another general measure of structural market power—the Herfindahl-Hirschman Index (HHI) calculation for supplier concentration—pointed to incrementally elevated concentration year-over-year and higher concentration generally following the aforementioned merger. The HHI market concentration analysis shows that nine percent of hours were considered moderately concentrated in 2022, a decrease of six percentage points from 2021. The decrease in both the market share indicator and HHI indicate decreasing structural market power in the SPP market.

Structural market power in the SPP footprint only creates the potential for market manipulation. The MMU continues to believe that the existing local market power mitigation measures are sufficiently robust to moderate the impact of an actual exercise of that potential, should it occur. The MMU will continue to evaluate structural market power concerns going forward.

Any exercise of market power is most likely to be profitable in transmission-constrained areas where concerns regarding potential local market power are highest. MMU analysis and continued close scrutiny of potential areas under frequent constraints confirm that existing mitigation measures are effective to mitigate the exercise of local market power.

Behavioral indicators were also assessed by analyzing the conduct of market participants, and the impact of that conduct on market prices, in order to detect the exercise of market power. The MMU examined offer price markups, offer quantities, mitigation frequency, and measures of implied economic and physical withholding in reviewing market behavior. The MMU noted overall improvements in the convergence of market price and imputed costs, but still observes negative prices at a level and frequency that warrants continued concern. Wind units in particular had exceptionally low markups, a concern that the MMU has raised in prior Annual State of the Market Reports.

Mitigation for economic withholding remains relatively infrequent overall despite small increases in day-ahead and real-time energy offer mitigation. Mitigation of no-load offers remains low as well, and while operating reserve mitigation increased over 2021, this was largely concentrated in spinning reserve resource intervals during the months of August and September.

The remaining metrics suggest that actual withholding behavior is infrequent. The measured economic output gap increased slightly in 2022 and the amount of physically unoffered generation remained at normal levels following transitory disruptions in outage patterns associated with COVID-19 in 2020.

Markups on marginal coal and gas resources increased significantly in 2022, while wind markups decreased to even more deeply negative levels than seen in 2021. The increase in thermal resource markups brought SPP's average offer price markup to slightly positive levels for the first time in several years. As with the increase in unoffered economic capacity, though, these metrics largely reflect behavioral changes and supply curve shifts stemming from acute supply chain problems in coal surface transportation networks. In mid-2022, the MMU introduced Revision Request number 502 (RR502) as a response to these issues. RR502 expanded the scope of allowed opportunity costs in offers for coal resources, with the intent of making these input shortages more transparent in wholesale electric costs while simultaneously giving coal plant operators an additional, economic tool to maintain safe and reliable coal stockpile levels. The MMU observed several market participants taking partial or full advantage of this increase in allowed opportunity costs and is largely satisfied with its performance to date.

Overall, the SPP Integrated Marketplace provides effective market incentives and mitigation measures to produce competitive market outcomes, particularly during market intervals where the exercise of local market power is a concern. While some behavioral indicators increased relative to low prior-year levels, these largely reflected conditions external to the market, and structural indicators showed continued levels of diverse and healthy competition. Market behaviors and results remained workably competitive overall, only infrequently requiring mitigation of local market power to achieve those outcomes. Nonetheless, mitigation of economic withholding remains an essential tool in ensuring that market results are competitive during periods when such market conditions offer suppliers the potential to abuse local market power.

1.6 RESOURCE ADEQUACY ISSUES

The February 2021 winter weather event highlighted significant issues with SPP's resource adequacy approach. The MMU and SPP outlined several of these issues in our winter weather reports.[4] The December 2022 winter storm, while less severe, demonstrated the same resource adequacy issues persist and pose a significant risk to reliability. Key issues include a lack of a seasonal resource adequacy requirement, fuel availability risk, correlated output and outages among similar resources, and an accreditation process that does not reflect actual resource performance.

SPP does not have a seasonal resource adequacy requirement. While stakeholders are currently reviewing a revision that would add a winter resource adequacy requirement, currently, SPP only counts on resources to be available for summer loads. However, February 2021 and December 2022 exposed that capacity tightness can happen in the winter. Furthermore, capacity can also be tight in the shoulder periods as resources take maintenance outages, something the MMU observed in both 2021 and 2022. Resource adequacy is something that needs to be considered year round, not just in the summer.

Resources experienced significant fuel supply issues that limited their availability. While almost all fuel-types experienced some issue during the winter weather event, by far, both natural gas and coal resources in the SPP region experienced a high level of outages related to fuel supply limitations. Though SPP may not experience adverse weather events every year, correlations in forced outages due to fuel supply shocks need to be incorporated into any resource adequacy approach in order to ensure a more accurate accounting of the expected availability of resources.

SPP does not have an effective mechanism to measure and incorporate performance in resource availability accreditation. While SPP and stakeholders worked on a mechanism to factor in performance in 2022,[5] this mechanism falls short in accurately assessing resource performance. Resources that have a track record of low availability should not be expected to perform in the future absent some substantial change to improve availability. Proper measurement will allow for proper incentives to address any shortfalls. Those that perform better should be treated

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[4] SPP MMU Report on February 2021 Winter Weather Event, SPP's Response to the February 2021 Winter Weather Event, Summary, A Comprehensive Review of SPP's Response to the February 2021 Winter Storm report

[5] This is known as performance-based accreditation. SPP and stakeholders are currently working on tariff language, which will likely be filed with FERC later this year.

differently from those that perform poorly. This differentiation is necessary to promote proper incentives to improve grid reliability.

Addressing resource adequacy is perhaps the most important lesson from February 2021 and December 2022. The SPP system was lucky to have significant imports from MISO, PJM, and others. SPP cannot plan to count on these systems to help SPP in a future event as a wider regional cold snap could limit imports. In December 2022, SPP avoided severe outcomes largely because of the availability of wind – another condition SPP cannot always count on. Effectively improving resource adequacy will require seasonal variation, differentiation of resource performance through effective measurement of performance, a requirement that counts for different contingencies, and incentives. The MMU has and will continue to engage in the SPP stakeholder processes to help promote improved resource adequacy.

1.7 RECOMMENDATIONS

One of the primary responsibilities of a market monitoring unit is to evaluate market rules and market design features for market efficiency and effectiveness. When we identify issues with the market, one of the ways to correct them is to make recommendations on market enhancements. These recommendations are highlighted in detail in Chapter 7. The MMU is making four new recommendations for 2022, as well as highlighting some existing recommendations in an effort to promote the need for these issues to be addressed.

1.7.1 NEW RECOMMENDATIONS

2022.1 Consider limitations on virtual trading during emergency conditions

In 2022, the MMU published a paper examining the impacts of virtual trading during the February 2021 winter weather event.[6] The MMU noted that the merits of virtual transactions, such as aiding price convergence, decrease or are even erased under conditions of scarcity, particularly when day-ahead prices exceed the $1,000 offer cap. The combination of large price spreads and an inability to displace more expensive generation during scarcity events lends to extremely high profit per megawatt values with little to no impact on price or market convergence. Where virtual transactions did create positive impacts, their high cost and profits largely outweighed their benefits.

In light of these findings, the MMU made multiple recommendations regarding the impact of virtual transactions during extreme weather events and options for alleviating those impacts.

[6] Virtual activity during the 2021 winter weather event: An analysis

2022.2 Address limitations with the ramp capability product

SPP implemented its ramp capability product in March 2022. In fall 2022, the MMU performed a review of the product's effectiveness. The results of the analysis were documented in the fall 2022 quarterly state of the market report.[7] The review identified that the majority of resources procured for ramp-up are stranded behind congested constraints and unable to deliver the ramp cleared. In addition, the MMU noted concerns that low prices on the ramp capability up demand curve may result in prices that undervalue ramp-up.

The MMU recommends SPP and stakeholders evaluate options to address the stranded ramping issue as it relates to the product's deliverability as well as evaluating the effectiveness of the ramping capability product demand curve.

2022.3 Improve situational awareness of transmission upgrades and improve process to reassign projects

Recent analysis by SPP staff has shown that several transmission projects are behind expected relevant deadlines.[8] Some of these projects are potentially several years beyond their expected in service dates. This analysis has highlighted a lack of transparency on the status of many transmission projects and upgrades.

Delays in transmission upgrades can significantly affect congestion. As shown in this report, congestion in 2022 was at the highest levels experienced since implementation of the Integrated Marketplace. Many of the top 10 constraints have projects that have been identified to remediate congestion. However, many of these projects are delayed. This can have significant ramifications on market outcomes, and costs paid by ratepayers. As such, the MMU recommends that SPP and stakeholders develop a process to improve the transparency of the status of transmission projects and upgrades. In addition, the MMU recommends additional detail be provided such as information regarding project assignments and regular updates from transmission developers regarding project statuses.

2022.4 Improve congestion hedging mechanisms to enhance equity

In July 2019, the Holistic Integrated Tariff Team (HITT) published its recommendation report, including 21 board-approved recommendations.[9] Marketplace enhancement recommendation one (HITT M1), "Implement congestion hedging improvements" remains outstanding. In January 2023, SPP staff presented an updated HITT M1 recommendation to the Markets and

[7] Fall 2022 quarterly state of the market report. Section 6 - Special Issues.
[8] March 1, 2023 Project Service Working Group presentation, 7. In-Service Date Report
[9] https://www.spp.org/documents/60372/hitt%20report%2020190730.pdf

Operations Policy Committee that targets nine components of the congestion hedging process including enhancements to both the long-term congestion rights and auction revenue rights processes. The MMU supports the current proposal and recommends SPP and stakeholders approve and implement the proposed design in its entirety.

1.7.2 EMPHASIS ON PREVIOUS RECOMMENDATION

The following recommendation was made by the MMU in a previous report but would like to highlight as a higher priority issue needing to be addressed.

2017.5 Address inefficiency when forecasted resources are under-scheduled day-ahead

The MMU noted in its 2017 report that the systematic under-scheduling of wind resources in the day-ahead market can contribute to distorted price signals, suppressing real-time prices and affecting revenue adequacy for all resources.[10] This also poses a problem for resource adequacy as the current, low average prices in the SPP market do not support the new entry of any resource type except wind (see Chapter 4, Section 4). Noting that variable energy resources are generally able to produce close to a forecasted amount, the MMU recommended that this issue be addressed through market incentives and rule changes that focus on market inefficiencies associated with under-scheduling of variable energy resources in the day-ahead market based on forecasted supply. The MMU has included this recommendation in each annual state of the market report since 2017.

While the MMU continues to view this as a high priority issue, in 2021, stakeholders voted to move this issue to the list of parking lot initiatives. Despite efforts to revive this initiative during the 2022 roadmap prioritization meetings, stakeholders chose not to elevate this initiative from the parking lot. The MMU will continue to study the effects of under participation of wind in the day-ahead market and recommends the RTO and its stakeholders explore both policy and incentive options to increase day-ahead participation.

[10] 2020 SPP Annual State of the Market Report, Chapter 8, 2017.5 Address inefficiency when forecasted resources under-schedule day-ahead

1.7.3 WINTER WEATHER EVENT – CRITICAL RECOMMENDATIONS

The recommendations below represent three critical areas the MMU emphasized in its written report on the February 2021 winter weather event.[11]

WWE1 Ensure availability of resources

In its report, the MMU noted that, if SPP is to rely on any resource to be available to provide energy, then that resource should be available. This requires accounting for more granular approaches to measuring capacity including seasonality and forced outage rates. In addition, availability may require resources to have secondary or backup fuel sources, or alternatively storage capabilities.

While SPP and stakeholders did approve an enhancement to accreditation as compared to the status quo, this approach falls short in addressing SPP's resource adequacy concerns. In order to improve resource adequacy, and to ensure non-discriminatory treatment of resources, the MMU recommends that SPP and its stakeholders adopt an adequate approach to valuing resource accreditation that accurately measures total resource availability. This would include maintenance outages, outages beyond management control, and other correlated outages; would not allow for observations to be removed; and would implement this approach in a consistent timeline across all resource types.

WWE2 Establish incentive mechanism for accredited capacity

The MMU included recommendations in the report to allow for meaningful incentives for availability noting that, to the extent that a resource is more available there should be incentives, and to the extent that a resource is less available, there should be disincentives.

This recommendation continues to be discussed in the stakeholder forums as part of overall discussions regarding the winter weather event. An initiative[12] was added to the SPP Roadmap to address this recommendation. The MMU has argued in stakeholder forums that the accreditation approach both affects and is affected by an incentive mechanism. The MMU has discussed the incentive mechanism as part of the Improved Reliability Task Force and Supply Adequacy Working Group discussions to improve resource accreditation.

[11] SPP MMU Winter Weather Report 2021
[12] SIR310 WWE MMU R2

WWE3 Establish more frequent resource adequacy requirement

In its report, the MMU recognized that different times of the year present different system challenges. The MMU noted that SPP resource adequacy requirements focus on meeting peak summer load and that a more frequent resource adequacy requirement, such as seasonal (or perhaps monthly), would be preferred.

The MMU recommends that SPP resource adequacy requirements address resource needs to meet the demand in each season independently. In the past two calendar years, SPP has experienced a winter weather event that has tested the region and exposed reliability concerns related to the availability of adequate capacity to meet demand during system shocks.

SPP is currently working with stakeholders to change the winter season resource obligation into a requirement, complete with penalty charges for deficiency. The MMU is engaged in the stakeholder process in support of this effort, but additionally recommends the same effort be undertaken for the spring and fall seasons. The MMU sees the seasonal resource adequacy requirement as the final leg of a balanced approach that uses accurate measurements, meaningful incentives, and adequate requirements, to ensure reliability.

1.7.4 PREVIOUS RECOMMENDATIONS

2021.1 Expand multi-configuration combined cycle resource model to include additional resource types

In the 2021 report[13], the MMU recommended SPP expand the multi-configuration combined cycle resource model or create a new multi-configuration model to include additional resource types that have multiple operating modes, or configurations. This recommendation comes in response to observed inefficiencies from participants attempting to optimize their plant's schedule without the benefit of such logic. The MMU noted in its report SPP's multi-configuration combined cycle resource model provides the market several efficiency gains by optimizing the schedule of configurations, improving participant abilities to offer different parameters for each configuration, and providing real-time operational awareness.

[13] 2021 Annual State of the Market report, Chapter 7 Recommendations, 2021.1 Expand Multi-Configuration Combined Cycle Resource Model to Include Additional Resource Types

2020.1 Update market and outage requirements to improve funding for transmission congestion rights

The MMU made recommendations in the 2020 report to update outage requirements and develop market rules and market incentives associated with outages to better align the network models used by the transmission congestion rights auctions and the day-ahead market. This recommendation was a result of the MMU observation of a continued downward trend in the overall funding of transmission congestion rights from day-ahead market congestion rents.

The MMU continues to recommend that SPP and stakeholders address TCR underfunding. As part of that recommendation, the MMU strongly recommends improving outage consistency between the congestion hedging market, the day-ahead market, and the real-time market to alleviate funding issues due to misaligned outages.

2020.2 Enhance market-to-market efficiencies through collaboration with MISO

In 2019 and 2020, the MMU worked with the MISO market monitor on a series of recommendations for the Joint Regional State Committee / Organization of MISO States Seams Liaison Committee. Based on the results of the joint study, the MMU recommended in the 2020 annual report to evaluate the processes and mechanisms used to effectuate the market-to-market agreement between SPP and MISO.[14] One of the items identified by the market monitors in this process was that SPP had real-time market-to-market congestion that was not materializing in the day-ahead market. Upon further evaluation, it was determined that this was because MISO market-to-market constraints were not being activated in the SPP day-ahead market. SPP began a new process in October 2022 that activates MISO market-to-market constraints in the day-ahead market based on recent congestion trends in the real-time market.[15] The MMU supports SPP's recent efforts in aligning day-ahead and real-time congestion along the SPP-MISO seam and recommends SPP make any necessary modifications to the TCR model to address concerns with TCR underfunding.

The MMU continues to recommend that SPP and stakeholders address inefficiencies in the market-to-market agreement between SPP and MISO.

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[14] 2020 SPP Annual State of the Market Report, Chapter 8, 2020.2 Enhance market-to-market efficiencies through collaboration with MISO

[15] https://spp.org/Documents/68224/MWG%20Agenda%20&%20Background%20Materials%2020221115-16.zip, item 9.

2020.3 Raise offer floor to minus $100/MW

The MMU recommended in the 2020 report to raise the energy offer floor to -$100/MWh. This recommendation was the result of analysis performed by the MMU which observed resources offering at the offer floor, -$500/MWh, and setting price. As noted in the 2020 report, the MMU believes that raising the offer floor is a simple and cost effective solution that avoids any limitation of what costs can be included in a market offer, however, as part of the SPP Roadmap process, this initiative was added to the list of parking lot initiatives. The MMU recommends SPP remove this initiative from the parking lot and include it in the list of initiatives to be acted on.

2019.1 Improve price formation

In the MMU report on the February 2021 winter weather event, the MMU made recommendations related to improving price formation during emergency and scarcity conditions. In that report, the MMU highlighted situations where price signals did not accurately reflect underlying conditions. The recommendations in the February 2021 winter weather report, which are aimed at improving pricing outcomes, closely align with the 2019 recommendation to improve price formation. The MMU believes this recommendation is being addressed through the stakeholder processes focusing on enhancements needed as a result of the February 2021 winter weather event.

2019.2 Incentivize capacity performance

As part of its February 2021 winter weather event report, the MMU made multiple recommendations regarding capacity adequacy and performance, many of which align with this recommendation. As such, the MMU believes this recommendation will be addressed through those stakeholder processes focused on enhancements needed as a result of the February 2021 winter weather event.

2019.3 Update and improve outage coordination methodology

In the 2019 report, the MMU recommended that the outage coordination methodology be updated to cover reserve shutdown outages and to consider a lower threshold for outages to be submitted. These recommendations are included with other recommendations documented in the report published by the Generator Outage Task Force.

2018.1 Limit the exercise of market power by creating a backstop for parameter changes

In the 2018 report, the MMU recommended that SPP strengthen the language regarding non-dollar-based parameters so that the expectation for the basis of these values is clear and well-defined. The MMU noted that changes to these parameters should be limited to actual capability and should be verified, at a minimum, in the presence of market power.

2018.2 Enhance credit rules to account for known information in assessments

The Credit Practices Working Group has developed and implemented the first phase of credit policy enhancements in response to needed improvements following a credit default in the PJM market that resulted in significant financial impacts to its market participants. The second phase focused on incorporating forward-looking known information into the financial security calculations. SPP staff reviewed options for a forward-looking approach in 2021, including a mark-to-auction process, however, SPP and stakeholders elected to not implement those phase two changes.

In July 2022, FERC issued an order to show cause to four ISO/RTO's as to why their tariffs were just and reasonable in absence of either of (1) mark-to-auction mechanisms for the calculation of financial transmission right (FTR) market participants' collateral requirements and/or (2) volumetric minimum collateral requirements for FTR market participants. FERC directed SPP, to show cause, as to why its tariff is just and reasonable without mark-to-auction mechanisms. SPP filed comments in support of its current tariff whereas the MMU filed comments in support of mark-to-auction. FERC has yet to provide a final rule.

2018.3 Develop compensation mechanism to pay for capacity to cover uncertainties

SPP market participants approved a revision request[16] to implement an uncertainty product in April 2021 and was approved by the SPP Board of Directors July 2021. The Tariff changes for the uncertainty product design were filed with FERC in January 2022. Implementation is currently targeted for July 6, 2023.[17] Once implemented, the MMU will consider this recommendation closed.

[16] Revision request 449 – Uncertainty Product
[17] Southwest Power Pool, Inc., "Submission of Tariff Revisions to Add Uncertainty Reserve Product to the Integrated Marketplace," Docket No. ER22-914-000 (Jan. 28, 2022)

2018.5 Improve regulation mileage price formation

In the 2018 report, the MMU recommended SPP staff review the performance of regulation mileage, and develop potential approaches to improve regulation mileage price formation. In addition, the MMU recommended that SPP staff consider adjusting the mileage factor. SPP drafted revision request 504 – improved economic incentive of regulation mileage in August 2022 to address both MMU recommendations.[18] It passed the SPP stakeholder process in December 2022, and is expected to be filed with FERC by mid-2023.

The MMU expects these changes to adequately address the recommendations regarding regulation mileage.

2017.2 Enhance commitment of resources to increase ramping flexibility

In 2017, the MMU recommended that SPP and its stakeholders address the issue of inadequate ramping flexibility by modifying its market rules to enhance the commitment of resources and increase ramping flexibility. The MMU noted potential options to address the commitment concerns and recommended SPP and its stakeholders explore options, such as those noted, to enhance commitment of resources and increase flexibility. This initiative[19] is on the SPP Roadmap and is currently ranked as a high priority.

2017.3 Enhance market rules for energy storage resources

SPP implemented its design for energy storage for compliance with FERC Order No. 841 in 2021. While the MMU filed supportive comments for the implementation of energy storage in the SPP market, the MMU noted further areas of enhancements to be considered with electric storage integration. Enhancements include the MMU recommendation for inclusion of mitigation measures for excessively low offers.

2017.4 Address inefficiency caused by self-committed resources

The MMU continues to recommend that SPP and its stakeholders explore and develop ways to reduce the incidence of self-commitment of resources outside of the market solution, including considering adding an additional day to the optimization process. An initiative[20] was added to the SPP Roadmap to implement these enhancements. This initiative is currently on hold while SPP evaluates the accuracy of its multi-day forecasts.

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[18] https://www.spp.org/search?q=rr504
[19] SIR 9 - Enhanced Commitment
[20] SIR 18 - HITT R3c: Implement Marketplace Enhancements: Multi-Day Market

2014.3 Address gaming opportunity for multi-day minimum run time resources

The MMU recommended changes to address a gaming opportunity in the market for resources with minimum run times greater than two days in its 2014 report. While Tariff changes to address this concern were approved by the SPP board in 2018, subsequent changes were needed to address inconsistent tariff language that the revisions revealed but did not address. An associated revision request[21] and additional tariff modification was approved through the stakeholder process. SPP filed these changes with FERC on May 7, 2020[22] and the MMU filed comments in support of the Tariff changes on June 12, 2020.[23] The current implementation date for this enhancement is October 1, 2023.

2014.4 Address issues with the day-ahead must offer requirement

The MMU continues to recommend that SPP and stakeholders either eliminate the limited day-ahead must-offer provision and revise the physical withholding rules to include a penalty for non-compliance, or address the design weaknesses. The MMU submitted this recommendation as an initiative[24] on the SPP Roadmap. This initiative is currently ranked on the roadmap as a high priority.

1.7.5 IMPLEMENTED RECOMMENDATIONS

2014.1 Improve quick-start logic

SPP implemented its fast-start resource design in May 2022. The MMU completed an analysis on fast-start pricing and documented the results of that analysis in a special issue in the fall 2022 quarterly state of the market report.[25] The MMU will continue monitor the impacts fast-start resources in the market and identify and report on those impacts where appropriate. The MMU considers this recommendation addressed with the implementation of the fast-start logic.

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[21] Revision request 382 – Multi-Day Minimum Run Time and Clarifications
[22] Docket No. ER20-1782, Revisions Regarding Make Whole Payments and Minimum Run Time, https://elibrary.ferc.gov/eLibrary/filelist?document_id=14858744&optimized=false
[23] Docket No. ER20-1782, MMU Comments, https://elibrary.ferc.gov/eLibrary/filelist?document_id=14861491&optimized=false
[24] SIR6 – DA Must Offer and Physical Withholding
[25] SPP MMU quarterly state of the market report fall 2022

2017.1 Develop a ramping product

In the 2017 report, the MMU recommended SPP develop a ramping product to incent actual, deliverable flexibility which to send appropriate price signals to the market that value resource flexibility.

SPP, stakeholders, and the MMU worked together to complete a ramping product design in April 2019 which was approved by the Market Operations and Policy Committee in October 2019. This design was approved by FERC in July 2020 and implemented on March 1, 2022.

There are, however, some issues with the performance of the ramping product, as stated in this year's new recommendation, 2022.2 Address limitations with the ramp capability product.

2018.4 Enhance ability to assess a range of potential outcomes in transmission planning

The MMU has continued to recommend in its annual state of the market reports that SPP and stakeholders identify ways to study and plan for the more aggressive carbon emissions reduction targets in the 10- and 20-year studies. SPP has continued to make enhancements to its planning processes that include lowering carbon emissions targets and increasing renewable capacity. With the recent enhancements to the 2024 ITP studies, the MMU believes this recommendation has been addressed. The MMU will continue to engage with SPP and stakeholders to ensure future studies include reasonable assumptions with regard to renewable integration on the SPP system.

2 LOAD AND RESOURCES

This chapter reviews load and resources in the SPP market for 2022. Key points from this chapter include:

- Monthly average system energy consumption was up five percent compared to 2021 levels. Most of this increase can be attributed to weather impacts and increased load.
- Nearly 1,500 MW of wind generation capacity was added to the market in 2022. Wind generation capacity now accounts for 32 percent of installed nameplate capacity in the SPP market.
- During 2022, 28 dispatchable demand response resources representing 186 MW of nameplate capacity were added to the SPP market. These resources ranged in size from 0.1 MW to 100 MW. At the end of 2022, there was 362 MW of dispatchable demand response resource installed nameplate capacity.
- The generation interconnection queue has nearly 104,000 MW of projects in the queue at the end of 2022. Of the queue, about 34,000 MW are wind resources, 42,000 MW are solar resources, 14,000 MW are battery/storage resources, with the remainder hybrid or gas simple-cycle resources.
- Wind generation represented the largest portion of total energy produced at 37.5 percent of the total. Coal generation was slightly behind at 33.4 percent of the total.
- SPP remained a net exporter for 2022 with an hourly average of 601 MW, up from 240 MW in 2021. April 2022 saw an hourly average of 1,235 MWh of net exports, which was the second highest since the start of the Integrated Marketplace. April 2022 also saw the highest hourly average wind production since the start of the Integrated Marketplace.
- Net market-to-market payments from MISO to SPP was $160 million, 84 percent higher than 2021 payments of nearly $87 million. February, April, and December each exceeded $20 million in net market-to-market payments from MISO to SPP while no months in 2022 netted market-to-market payments from SPP to MISO. July had the lowest net market-to-market payment from MISO to SPP of almost $3 million.
- Cleared virtual energy bids and offers as a percentage of load for 2022 was 29 percent, up from 25 percent in 2021.
- Average profit per cleared virtual megawatt after fees was $1.47/MW, down 20 percent from 2021 (excluding February) which was at $1.84/MW.

2.1 THE INTEGRATED MARKETPLACE

SPP is a Regional Transmission Organization (RTO) authorized by the Federal Energy Regulatory Commission (FERC) to ensure reliable power supplies, adequate transmission infrastructure, and competitive wholesale electricity prices. FERC granted RTO status to SPP in 2004. SPP provides many services to its members, including reliability coordination, tariff administration, regional scheduling, reserve sharing, transmission expansion planning, wholesale electricity market operations, and training. This report focuses on the 2022 calendar year of the SPP wholesale electricity market referred to as the Integrated Marketplace, which started on March 1, 2014.

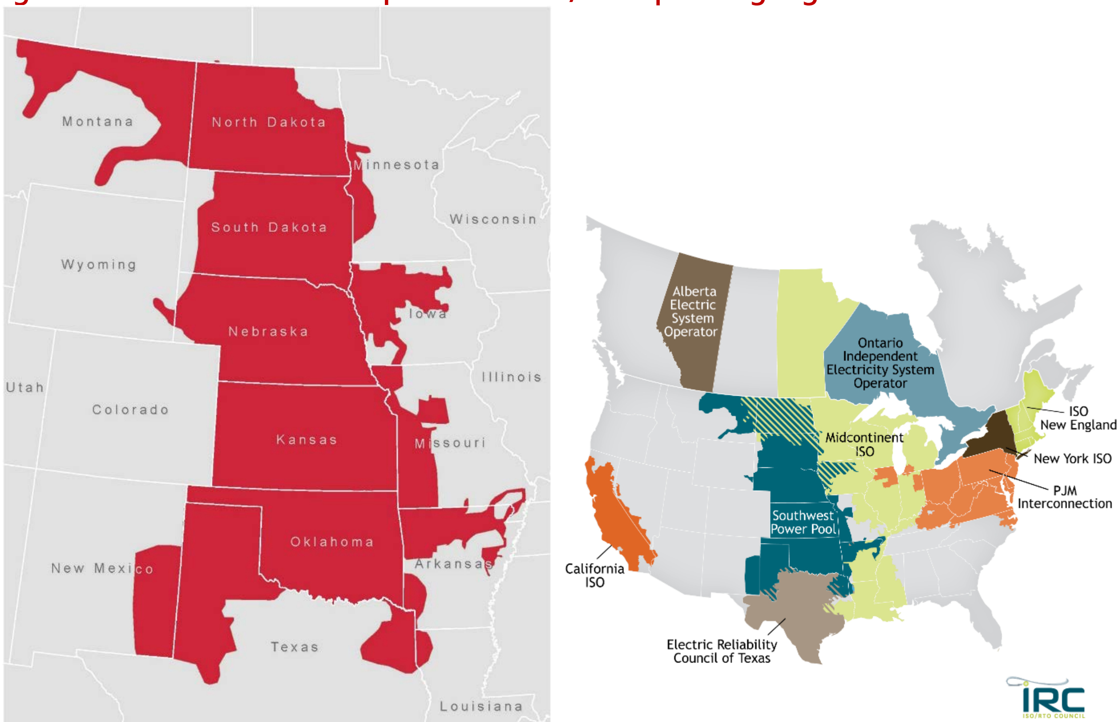
The Integrated Marketplace has a full day-ahead market with transmission congestion rights, virtual trading, a reliability unit commitment process, a real-time balancing market, and a price-based operating reserves market. SPP simultaneously put into operation a single balancing authority as part of the implementation of the Integrated Marketplace. The primary benefit of a day-ahead market is improved efficiency of daily resource commitments. Another benefit of this market includes the joint optimization of the available capacity for energy and operating reserves.

2.1.1 SPP MARKET FOOTPRINT

The SPP market footprint is located in the westernmost portion of the Eastern Interconnection, with Midcontinent ISO (MISO) to the east, Electric Reliability Council of Texas (ERCOT) to the south, and the Western Interconnection to the west. Figure 2–1 shows the current operating regions of the nine RTO/ISO markets in the United States and Canada, as well as a more detailed view of the SPP footprint. The SPP market also has connections with other non-RTO/ISO areas such as Saskatchewan Power Corporation, Associated Electric Cooperative, and Southwestern Power Administration.[26]

[26] Southwestern Power Administration belongs to the SPP RTO, Reliability Coordinator (RC), and Reserve Sharing Group (RSG) footprints. Associated Electric Cooperative belongs to the SPP RSG.

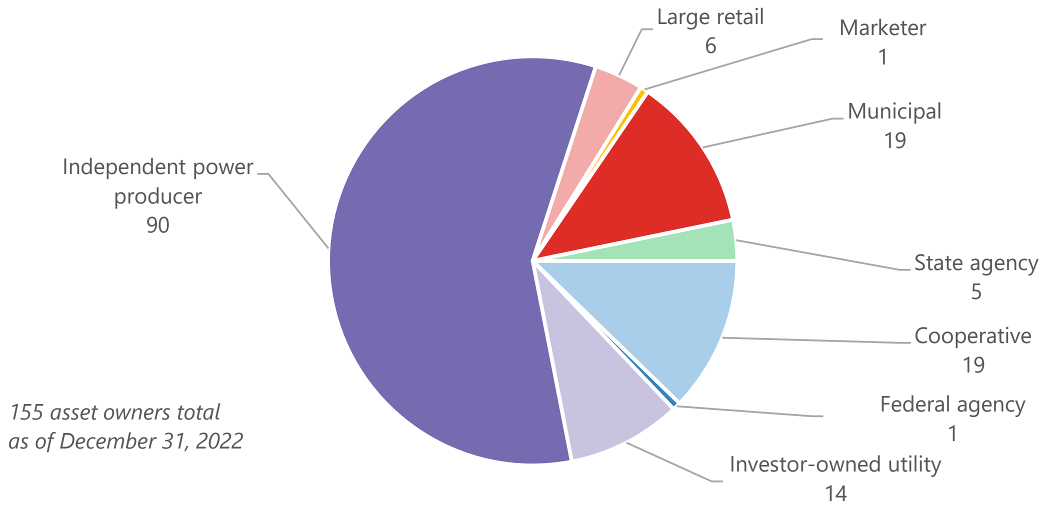
Figure 2–1 SPP market footprint and RTO/ISO operating regions



2.1.2 SPP MARKET PARTICIPANTS

At the end of 2022, 285 entities were participating in the SPP Integrated Marketplace. SPP market participants can be divided into several categories: regulated investor-owned utilities, electric cooperatives, municipal utilities, federal and state agencies, independent power producers, and financial only market participants that do not own physical assets. Figure 2–2 shows the distribution of the 155 asset owners registered to participate in the Integrated Marketplace.

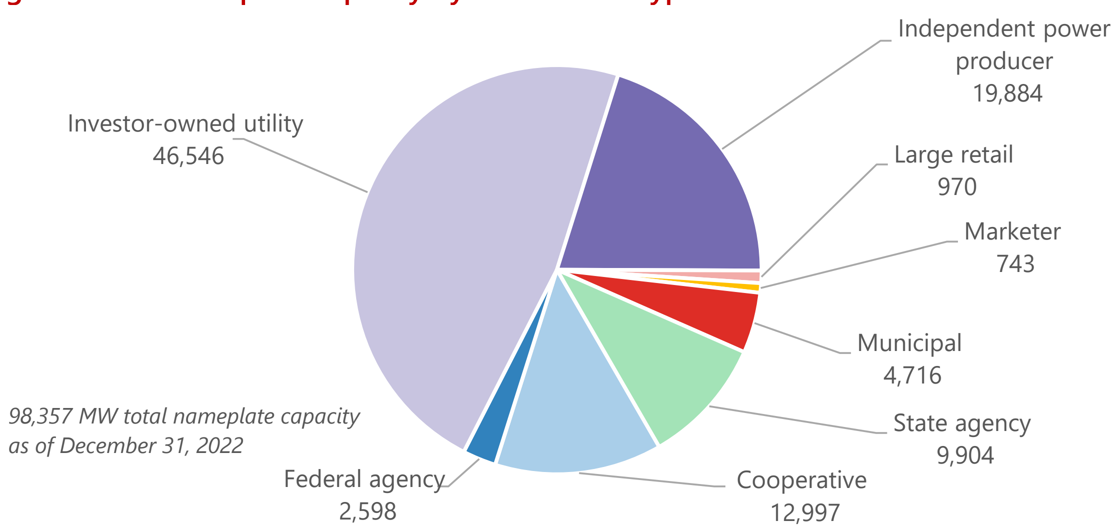
Figure 2–2 Asset owners by type



The independent power producers account for 58 percent of all assets owners because most variable energy producers are included in this category. There may be a number of asset owners in a given category with the same corporate parent. For example, an independent power producer owns five wind farms and each are registered as a different asset owner; these would count as five different asset owners.

Figure 2–3 shows generation nameplate capacity owned by the type of asset owner.

Figure 2–3 Nameplate capacity by asset owner type



Although investor-owned utilities represent only a small portion of the total number of asset owners at nine percent, they own the highest portion of the SPP generation capacity at 48 percent. This is in contrast to the "independent power producer" category, which has a large number of asset owners (58 percent) representing a smaller portion (20 percent) of total nameplate capacity.

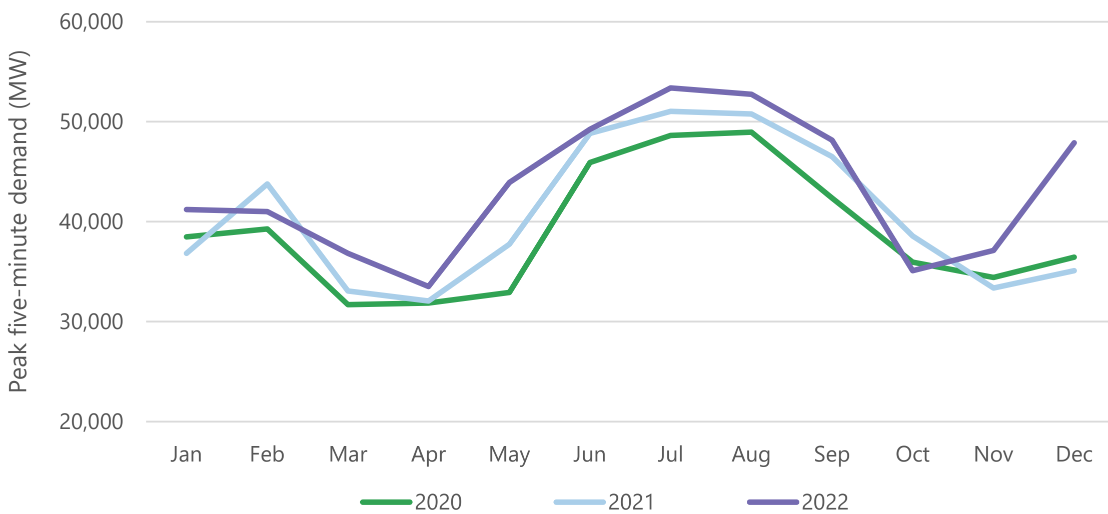
2.2 ELECTRICITY DEMAND

2.2.1 SYSTEM PEAK DEMAND

One way to evaluate load is to review peak system demand statistics over an extended period. The market footprint has changed over time as participants have been added to or withdrawn from the market. The peak demand values reviewed in this section are coincident peaks, calculated out of total generation dispatch across the entire market footprint that occurred during a specific real-time market five-minute interval. The peak experienced during a particular year or season is affected by events such as unusually hot or cold weather, daily and seasonal load patterns, and economic growth and change.

Figure 2–4 shows a month-by-month comparison of five-minute demand for the last three years.

Figure 2–4 Monthly peak system demand

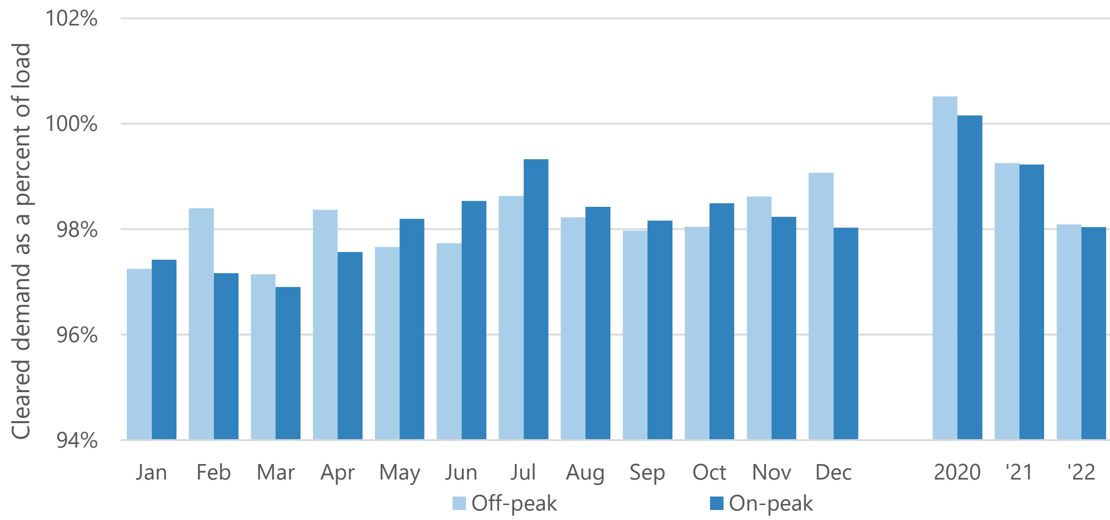


Every month of 2022 had a five-minute system peak demand higher than 2021, with the exception of February, due to the winter weather event in 2021, and October, due to lower overall weather impacts in 2022. As shown on the chart, December 2022 set a new all-time high winter five-minute peak of 47,891 MW; this is over 4,100 MW higher than the previous winter peak set in February 2021. The SPP system five-minute interval peak demand in 2022 was 53,381 MW, which occurred on July 19 at the five-minute interval beginning at 4:35 PM. This is 4.5 percent higher than the 2021 system five-minute interval peak of 51,041 MW.

2.2.2 MARKET PARTICIPANT LOAD

The amount of load participating in the day-ahead market has been declining over the past three years as shown in Figure 2–5.

Figure 2–5 Cleared demand bids in day-ahead market



The average monthly participation rates in the day-ahead market for load assets on an aggregate level were between 97 and 99 percent of the actual real-time load in 2022. Accurate reflection of demand in the day-ahead market economically incents generation to participate in the day-ahead market. Additionally, accurate reflection of the load helps to converge prices. Load participation in the day-ahead market has dropped steadily over the past three years, with averages in both on-peak and off-peak periods around 98 percent in 2022.

Figure 2–6 depicts 2022 total energy consumption and the percentage of energy consumption attributable to each entity in the market.

Figure 2–6 System energy usage

	2020		2021		2022	
	Energy consumed (GWh)	Percent of system	Energy consumed (GWh)	Percent of system	Energy consumed (GWh)	Percent of system
* Evergy, Inc.	47,651	19.0%	48,862	19.0%	49,953	18.5%
American Electric Power	40,210	16.0%	40,988	16.0%	43,231	16.0%
Oklahoma Gas and Electric	28,327	11.3%	29,077	11.3%	31,286	11.6%
Southwestern Public Service Company	26,983	10.7%	25,660	10.0%	25,255	9.3%
Basin Electric Power Cooperative	21,124	8.4%	22,027	8.6%	23,391	8.7%
^ The Energy Authority	16,736	6.7%	17,473	6.8%	18,482	6.8%
Omaha Public Power District	11,518	4.6%	11,991	4.7%	12,556	4.6%
Western Farmers Electric Cooperative	8,011	3.2%	8,343	3.3%	10,848	4.0%
Grand River Dam Authority	6,324	2.5%	6,717	2.6%	7,134	2.6%
Golden Spread Electric Cooperative Inc.	6,018	2.4%	6,042	2.4%	6,411	2.4%
Liberty Utilities (f/k/a Empire District Electric)	4,833	1.9%	4,936	1.9%	5,115	1.9%
Sunflower Electric Power Corporation	4,676	1.9%	4,653	1.8%	4,693	1.7%
Arkansas Electric Cooperative Corporation	4,142	1.6%	4,375	1.7%	4,669	1.7%
Western Area Power Administration, Upper Great Plains	4,434	1.8%	4,450	1.7%	4,457	1.6%
Lincoln Electric System	3,369	1.3%	3,453	1.3%	3,537	1.3%
Oklahoma Municipal Power Authority	2,543	1.0%	2,628	1.0%	2,788	1.0%
Kansas City (Kansas) Board of Public Utilities	2,268	0.9%	2,309	0.9%	2,455	0.9%
Northwestern Energy	1,747	0.7%	1,736	0.7%	1,764	0.7%
Midwest Energy Inc.	1,623	0.6%	1,651	0.6%	1,753	0.6%
Kansas Municipal Energy Agency	1,461	0.6%	1,534	0.6%	1,626	0.6%
Tenaska Power Service Company	1,382	0.5%	1,405	0.5%	1,394	0.5%
Missouri River Energy Services	1,166	0.5%	1,206	0.5%	1,274	0.5%
East Texas Electric Cooperative	1,101	0.4%	1,014	0.4%	1,095	0.4%
City of Independence (Missouri)	991	0.4%	1,009	0.4%	1,034	0.4%
Kansas Power Pool	825	0.3%	845	0.3%	828	0.3%
Missouri Electric Commission (f/k/a Missouri Joint Municipal EUC)	584	0.2%	732	0.2%	756	0.3%
People's Electric Cooperative	—	—	—	—	617	0.2%
City of Fremont (Nebraska)	493	0.2%	500	0.2%	528	0.2%
Big Rivers Electric Corporation	512	0.2%	467	0.2%	498	0.2%
MidAmerican Energy Company	253	0.1%	259	0.1%	277	0.1%
Kansas Electric Power Cooperative	—	—	78	<0.1%	225	0.1%
South Sioux City	—	—	—	—	99	<0.1%
City of Grand Island (Nebraska)	—	—	—	—	67	<0.1%
Tyre Energy	—	—	—	—	58	<0.1%
Harlan (Iowa) Municipal Utilities	16	<0.1%	16	<0.1%	18	<0.1%
Rainbow Energy Marketing	69	<0.1%	71	<0.1%	16	<0.1%
Otter Tail Power Company	4	<0.1%	1	<0.1%	6	<0.1%
NSP Energy	5	<0.1%	4	<0.1%	5	<0.1%
City of Neligh (Nebraska)	—	—	—	—	3	<0.1%
System Total	**251,399**		**256,514**		**270,182**	

* Evergy was formed in June 2018 and is the corporate parent of Evergy, Kansas Central (f/k/a Westar Energy), Evergy, Missouri Metro (f/k/a Kansas City Power and Light), and Evergy, Missouri West (f/k/a Kansas City Power and Light GMOC).

^ The Energy Authority acts as an agent for Nebraska Public Power District, City Utilities of Springfield (Missouri), the Municipal Energy Agency of Nebraska, and some small municipalities in Nebraska.

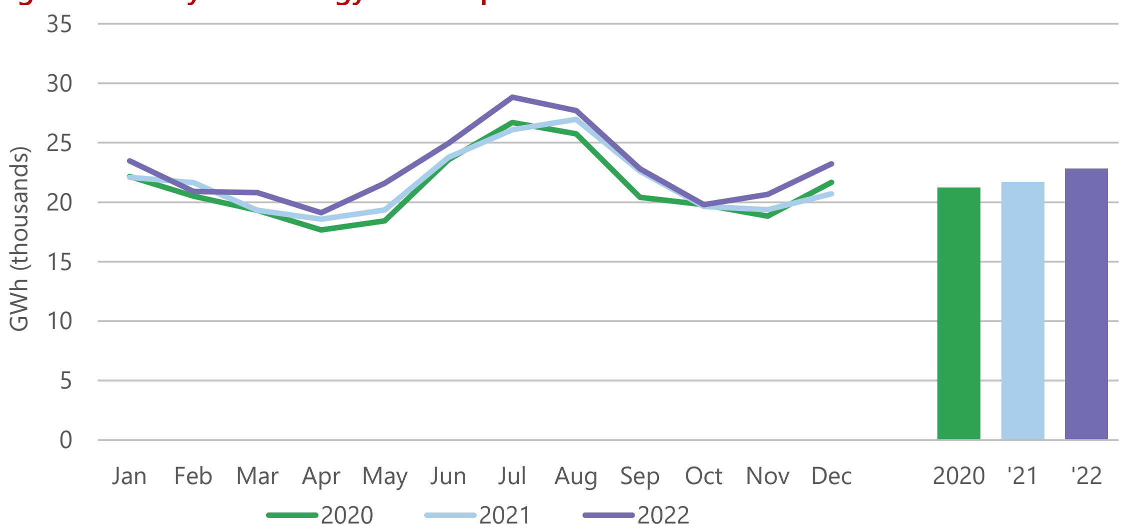
	2020		2021		2022	
* Evergy, Inc.	47,651	19.0%	48,862	19.0%	49,933	18.5%
*@ Evergy, Kansas Central (f/k/a Westar Energy)	24,427	9.7%	24,996	9.7%	25,202	9.3%
* Evergy, Missouri Metro (f/k/a Kansas City Power and Light, Co.)	14,799	5.9%	15,139	5.9%	15,679	5.8%
*Evergy, Missouri West (f/k/a Kansas City Power and Light, Greater Missouri)	8,425	3.4%	8,726	3.4%	9,053	3.4%
^ The Energy Authority	16,736	6.7%	17,473	6.8%	18,842	6.8%
^ The Energy Authority, Nebraska Public Power District	12,630	5.0%	13,318	5.2%	14,147	5.2%
^ The Energy Authority, City Utilities of Springfield (Missouri)	3,091	1.2%	3,137	1.2%	3,292	1.2%
^ The Energy Authority, other	1,014	0.4%	1,018	0.4%	1,043	0.4%

The four largest entities comprise 55 percent of energy consumed in the market. This concentration is understandable as SPP's market is primarily composed of vertically integrated investor-owned utilities, which tend to be large. Overall, the total system energy usage in 2022 was five percent above the 2021 level. Much of this increase can be attributed to more weather impacts and higher load in 2022.

2.2.3 SYSTEM ENERGY CONSUMPTION

Figure 2–7 shows the monthly system energy consumption in thousands of gigawatt-hours.

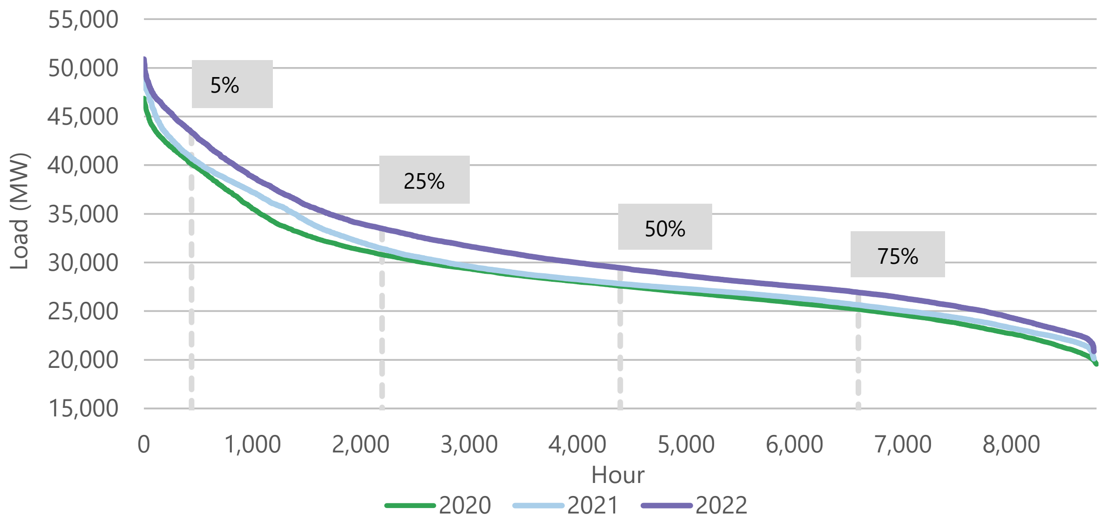
Figure 2–7 System energy consumption



For the year, monthly average energy consumption was up five percent compared to 2021. The monthly average was higher in all months of 2022 compared to 2021, except for February, when the 2021 winter weather event caused much higher consumption. May and December 2022 were each 12 percent above 2021, driven mostly by a warmer than usual May and a colder than usual December.

Figure 2–8 depicts load duration curves from 2020 to 2022. These load duration curves display hourly loads from the highest to the lowest for each year.

Figure 2–8 Load duration curve



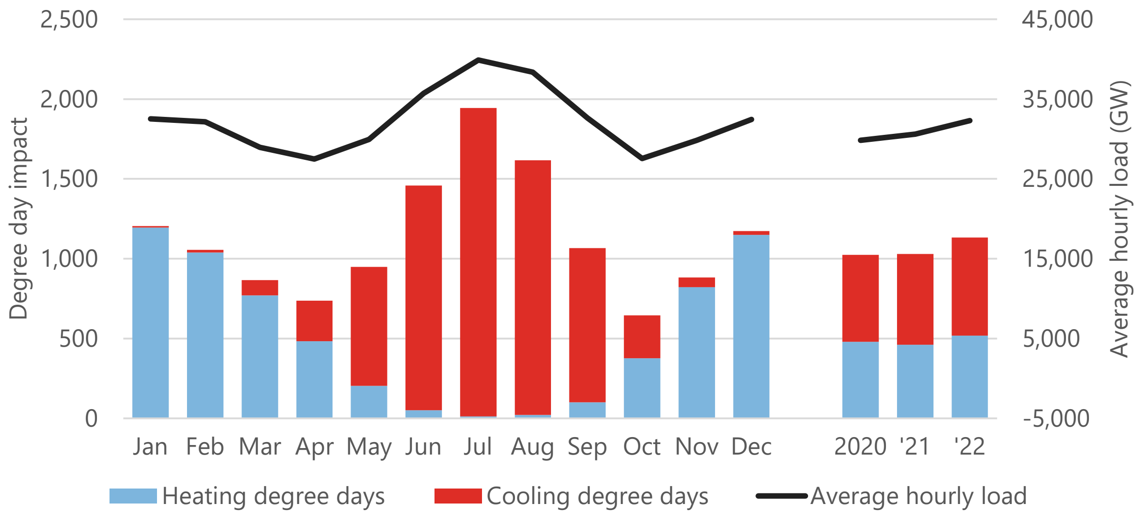
In 2022, the maximum hourly average load was 50,903 MW, which was up four percent from 2021. The minimum hourly load for 2022 was 20,867 MW, which was also four percent above 2021. Comparing annual load duration curves shows differentiation between cases of extreme loading events and more general increases in system demand. If only the extremes are higher or lower than the previous year, then short-term loading events are likely the reason. If the entire curve is higher across the entire range, this is more indicative of increased system demand. For 2022, the gap remains at a fairly consistent distance along the length of the curve, indicating a general increase in system demand.

2.2.4 HEATING AND COOLING DEGREE DAYS

Changes in weather patterns from year-to-year have a significant impact on electricity demand. One way to evaluate this impact is to calculate heating degree days (HDD) and cooling degree days (CDD). These values can then be used to estimate the impact of actual weather conditions on energy consumption, compared to normal weather patterns.[27] Regression analysis has shown that a cooling degree has about 4.2 times the impact of a heating degree on load, so cooling degree days are multiplied by 4.2 in the chart below.

Figure 2–9 shows monthly heating and cooling degree days' impact over the last three years compared to the average hourly load.

Figure 2–9 Heating and cooling degree days



As shown in the chart, cooling degree days are more prevalent in the higher load months of May through September, whereas heating degree days are more prevalent in the other months. Total degree day impact was nearly the same for 2020 and 2021, however, the trend is toward warmer temperatures during the cooling seasons and colder temperatures during the heating seasons, thus increasing total degree day impact. Average hourly load had a slight increase from 2020 to 2021, but had a 5.5 percent increase from 2021 to 2022. Some of the decrease in

[27] To determine heating degree days and cooling degree days for the SPP footprint, several representative locations are used in the calculation. These locations include Shreveport LA, Lubbock TX, Oklahoma City OK, Amarillo TX, Kansas City, MO, Hays, KS, Omaha NE, North Platte NE, Sioux Falls SD, Rapid City SD, Grand Forks ND, and Williston/Stanley ND. The base temperature separating heating and cooling periods is 65 degrees Fahrenheit. If the average temperature of a day at a location is 75 degrees Fahrenheit, there would be 10 (=75–65) cooling degree days at that location. If a day's average temperature is 50 degrees Fahrenheit, there would be 15 (=65–50) heating degree days at that location. Using statistical tools, the daily estimated load impact of a single cooling degree day is just over four times higher than the impact of a single heating degree day. This is in part because more electric is used for cooling than electric heating. So, in order to show the actual impact of degree days, cooling degree days are multiplied by 4.2 in Figure 2–9.

2020 can be attributed to lower loads as a result of the beginning of the COVID-19 pandemic starting in March of that year.

Figure 2–10, Figure 2–11, and Figure 2–12 show load levels, cooling degree days, and heating degree days for the past three years compared to a normal year.[28] Normal load was derived from a regression analysis of actual footprint heating degree days, cooling degree days, weekends, and holidays, substituting footprint normal temperatures.

Figure 2–10 Loads compared with a normal year

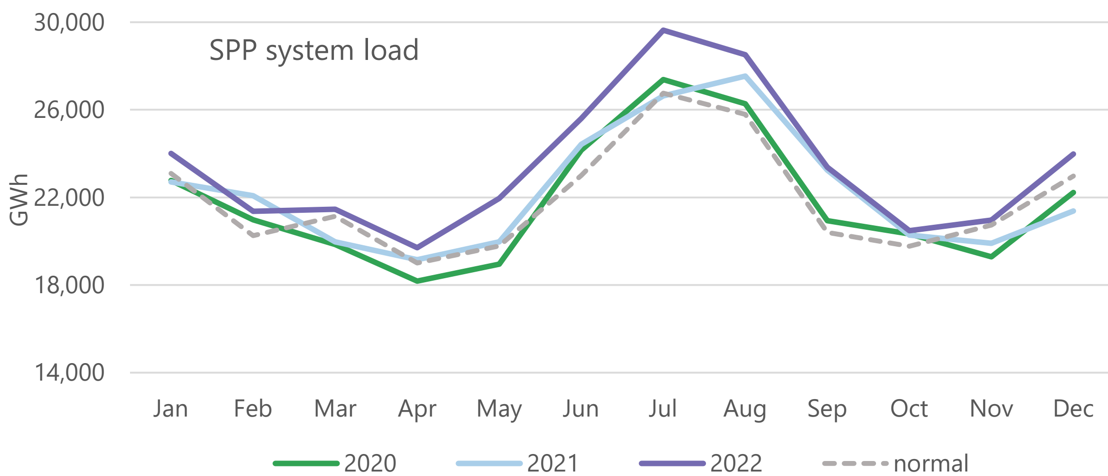
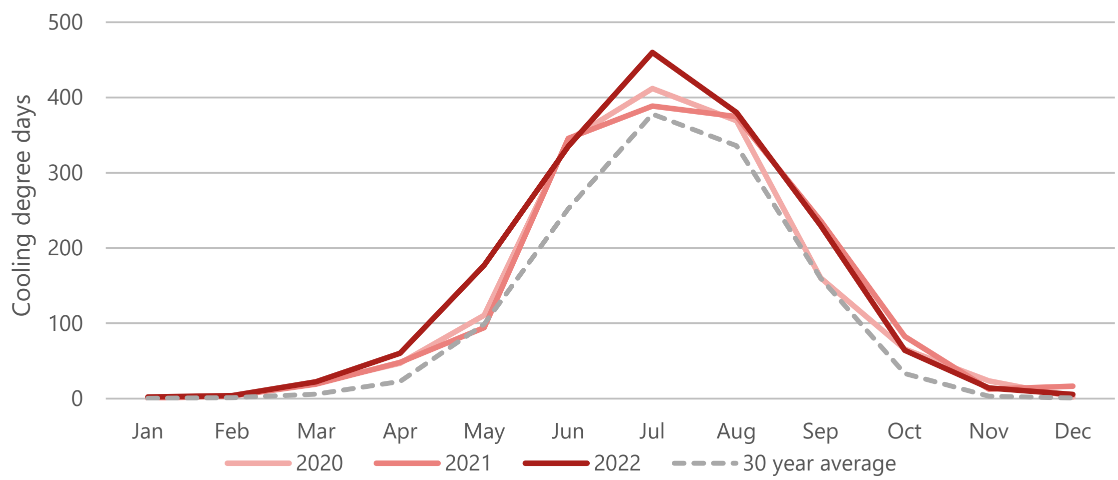
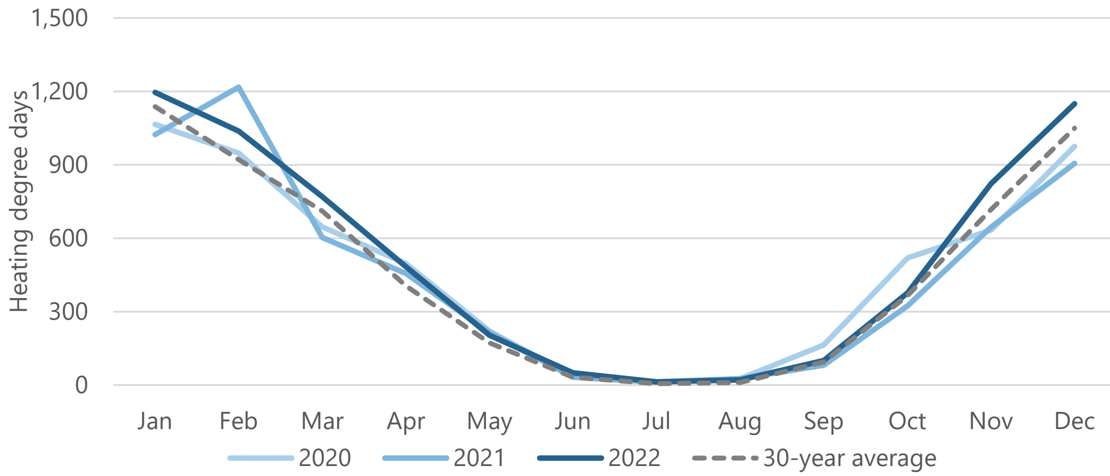


Figure 2–11 Cooling degree days compared with a normal year



[28] The 30 year normal temperatures are from the 1991-2020 U.S. Climate Normals product from the National Oceanic and Atmospheric Association (NOAA).

Figure 2–12 Heating degree days compared with a normal year



The figures indicate loads are influenced by cooling demand in the late spring and summer months, whereas late fall and winter loads are, to a lesser degree, influenced by heating demand. Moreover, the figures show that cooling degree days in 2021 were well above the 30-year average in all "cooling months" (April through October). Heating degree days in "heating months" (January through March, November, and December) were above the 30-year average in all months. The higher heating degree days for February 2021 is a direct result of the winter weather event during the month.

2.3 INSTALLED GENERATION CAPACITY

Figure 2–13 depicts the Integrated Marketplace installed generation capacity for the SPP market footprint.

Figure 2–13 Generation nameplate capacity by technology type

Fuel type	2020	2021	2022	Percent as of year-end 2022
Wind	27,326	30,493	32,032	32%
Gas, simple-cycle	22,762	22,829	22,727	23%
Coal	22,899	22,825	22,503	23%
Gas, combined-cycle	13,548	13,619	13,619	14%
Hydro	3,431	3,431	3,431	3%
Nuclear	2,061	2,061	2,061	2%
Oil	1,566	1,569	1,569	2%
Solar	235	235	245	<1%
Dispatchable demand response	34	176	362	<1%
Other	84	78	86	<1%
Total	93,946	97,314	98,635	

Note: Capacity is nameplate rating at year-end.

Total installed nameplate generation capacity in the SPP Integrated Marketplace was 98,635 MW at the end of 2022, representing an increase of 1.4 percent (or 1,321 MW) from 2021.[29] This increase was driven by a five percent increase (1,539 MW) in nameplate wind capacity in 2022. Total 2022 market share of wind capacity represented 32 percent of total nameplate generation.

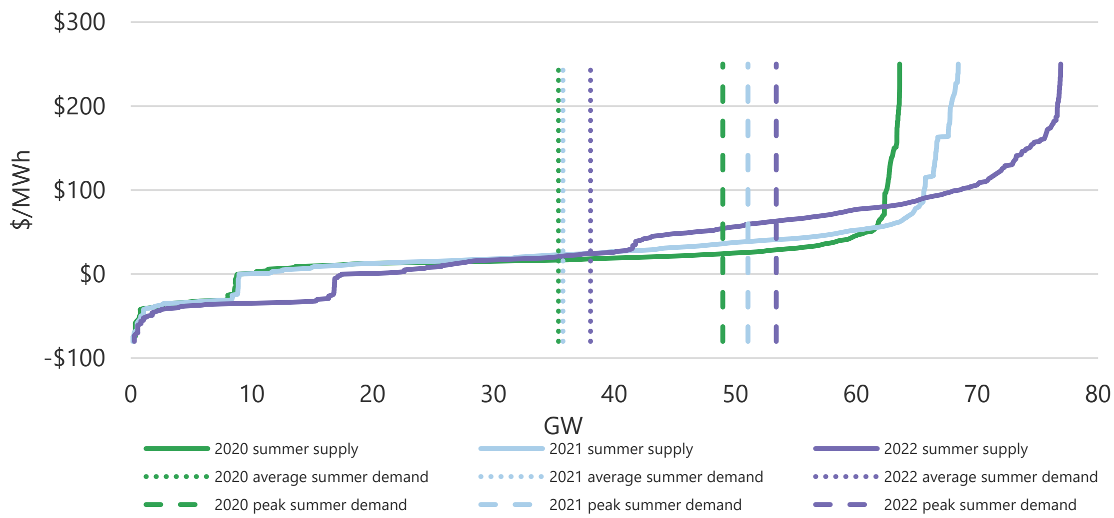
When both types of natural gas resources are combined, natural gas-fired installed generation capacity still represents the largest share of generation capacity in the SPP market at 37 percent (gas simple-cycle 23 percent and gas combined-cycle 14 percent) of nameplate capacity, with coal being the third largest type at 23 percent. Also of note, an additional 186 MW of nameplate capacity of dispatchable demand response resources was added to the market in 2022, bringing the total nameplate capacity of these resources to 362 MW.

[29] The change in total generation capacity from year to year includes additions, retirements, fuel type changes, and nameplate rating changes that occur during the year.

2.3.1 AGGREGATE SUPPLY

Figure 2–14 shows the total SPP aggregate real-time generation supply curves by offer price, peak demand, and average demand for the summers of 2020 to 2022, while Figure 2–15 shows the same data for the winter months. Resources in outage status were excluded from the supply curve. To calculate the supply curves, the peak day for each season was used for each analysis year. The aggregate generation supply curves were calculated by using the real-time offers of non-wind resources and wind forecast data for wind resources.

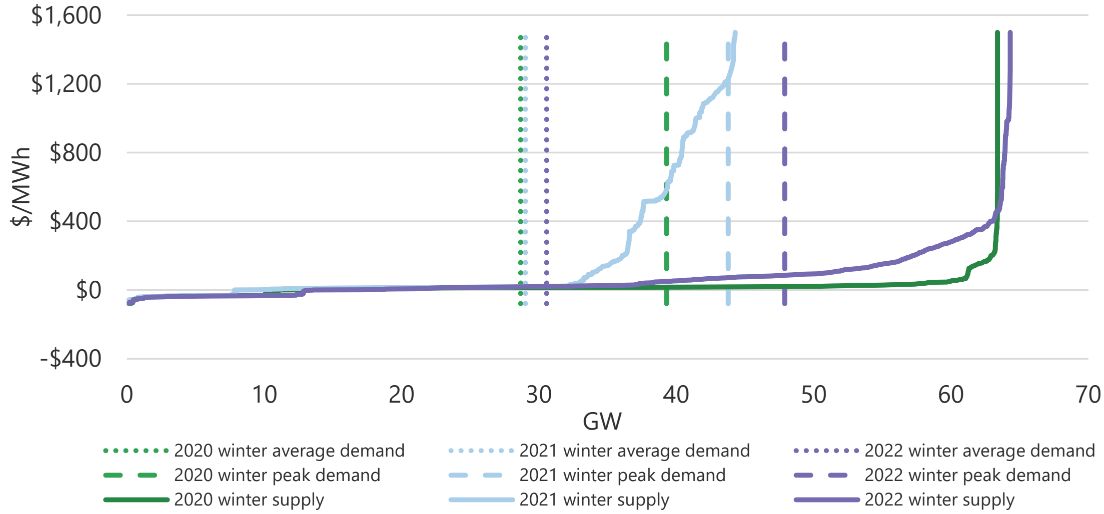
Figure 2–14 Aggregate supply curve, peak summer day



Total aggregate real-time generation supply for summer 2022 was 76,905 MW, compared to 68,435 MW for summer 2021, an increase of 12 percent. The system peak demand in 2022 of 53,381 MW was about 4.5 percent higher than 2021. Average demand had an even larger increase, up 6.5 percent from 2021 to 2022. Based on the heating and cooling degree days analysis in Section 2.2.4, the SPP market footprint had much higher cooling degree days in July 2022 compared to 2021, which resulted in higher demand in the summer months as compared to the previous year.

Also evident is the approximately 22 GW gap between this maximum supply and the total installed nameplate generation capacity on the peak summer day. This is primarily a result of the difference between the wind forecast and installed capacity of wind resources (approximately 15 GW), resources reporting on outage (approximately 6.5 GW), and reduced summer capacity due to high ambient temperatures (less than 1 GW).

Figure 2–15 Aggregate supply curve, peak winter day



The total aggregate real-time generation supply for winter 2022 was 64,305 MW, compared to 44,285 MW for winter 2021, a 31 percent increase. However, the impact of the February 2021 winter weather event skews this analysis. Comparing winter 2022 supply to winter 2022 supply results in a 1.5 percent increase from winter 2020 to 2022. The system winter peak demand of 47,891 MW for 2022 was 9.5 percent higher than 2021. This large increase can be attributed to the December 2022 winter weather event. More detailed discussion of the December 2022 winter weather event can be found in Section 2.9.2. Although the winter peak demand increased by nearly 10 percent, the winter average demand only increased by five percent from 2021 to 2022.

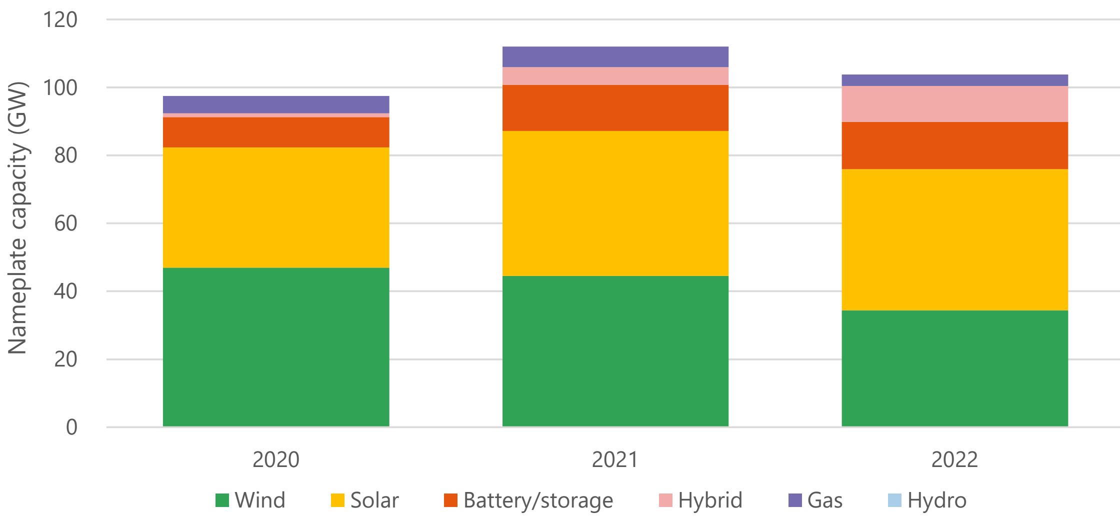
The section of the offer curve below $0/MWh is mostly due to wind and solar energy and can vary between 1,000 MW and 20,000 MW, based on wind and solar availability. Negative offers typically reflect opportunity costs associated with state and federal tax incentives. The sharp uptick in price at the top of the supply curves of 2020 and 2022 represents the transition from natural gas units to oil units. Due to the significantly high gas price during the winter event in February 2021, the supply curve of 2021 does not reach to the sharp uptick stage under the $1,600/MWh price as several offers were at or above the $2,000/MWh offer cap.

2.3.2 GENERATION INTERCONNECTION

SPP is responsible for performing engineering studies to determine if the interconnection of new generation within the SPP footprint is feasible, and to identify any transmission development that would be necessary to facilitate the proposed generation. The generation interconnection process involves a cluster study methodology allowing participants several windows to submit requests for evaluation.[30]

Figure 2–16 shows the megawatts of capacity by generation technology type in all stages of development. Included in this figure are interconnection agreements in the process of being created; those under construction; those already completed, but not yet in commercial operation; and those in which work has been suspended as of year-end 2022.

Figure 2–16 Active generation interconnection requests, megawatts



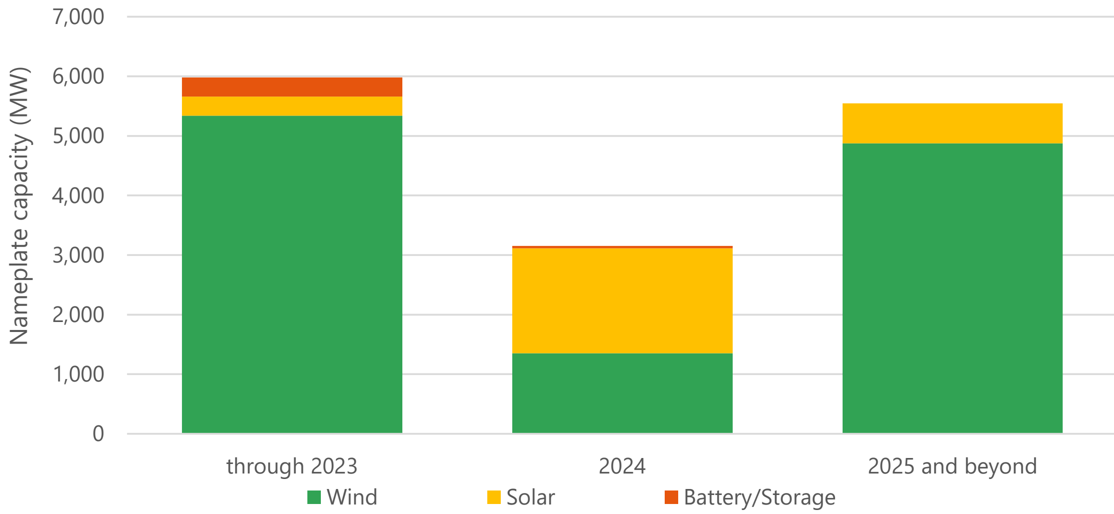
As shown above, generation capacity from renewable, storage, and hybrid[31] resources accounts for the vast majority of proposed generation interconnection, at 100 GW of the nearly 104 GW in the generation interconnection queue. Wind generation in the queue at the end of 2020 was 47.0 GW. This has dropped to 34.4 GW in 2022. Interconnection requests for solar generation continued to increase, rising from 35.4 GW at the end of 2020 to 41.5 GW at the end of 2022. Storage interconnection requests have also increased with 14 GW in the queue at the end of 2022.

Development of renewable generation in the SPP region is expected to continue and the proper integration of wind and solar generation is fundamental to maintaining market stability and the reliability of the SPP system.

[30] See Guidelines for Generator Interconnection Requests to SPP's Transmission System

[31] Hybrid resources typically consist of a renewable generation source, paired with a battery/storage resource at the same location.

Figure 2–17 Executed generation interconnection requests, on-schedule



As the chart above shows, at the end of 2022, generation totaling 14.7 GW has an executed generation request that is on-schedule to be added to the market in 2023 and beyond, with wind representing 11.6 GW of this generation. It is important to note that of the on-schedule projects, 79 percent are for wind resources, 19 percent are for solar resources, and two percent are for battery/storage resources. However, when looking at the entire generation interconnection queue, 33 percent of the projects are for wind resources, 40 percent are for solar resources, 13 percent are for battery/storage resources, and 10 percent are for hybrid resources. Although, solar resources make up a larger portion of the entire queue, the fact that wind resources represents a larger portion of the on-schedule projects in the queue indicates that wind resources will still be the predominant type of resource added to the market in the near future. Also key, is that generation can still be added or removed from the on-schedule project list, even in the current year. However, there is more surety to the levels of generation scheduled to go into production closer to the current year, and additions and deletions to on-schedule projects are more typical in future years.

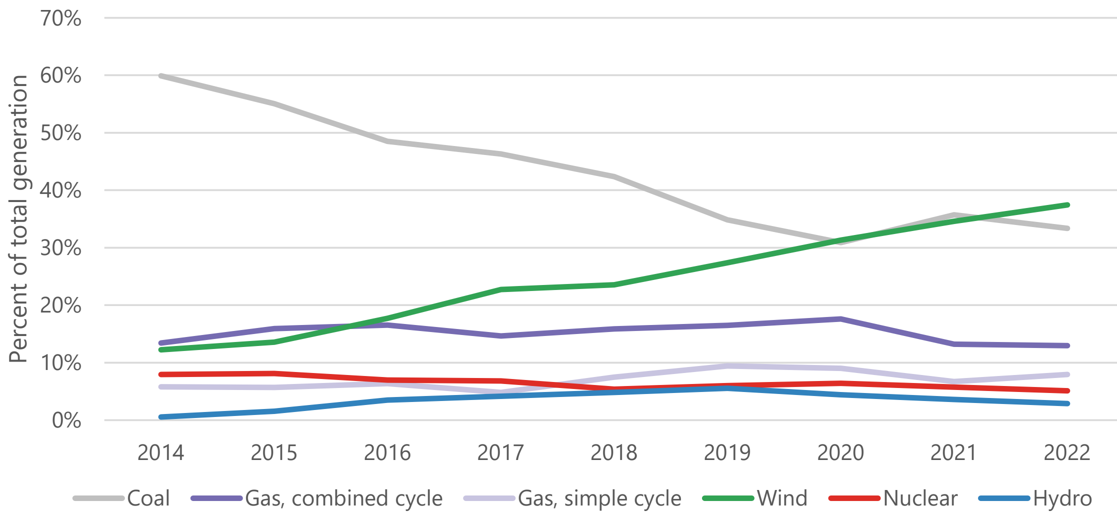
2.4 GENERATION

2.4.1 GENERATION BY TECHNOLOGY

An analysis of generation by technology type used in the SPP Integrated Marketplace is useful in understanding pricing and reliability, as well as the potential impact of environmental and additional regulatory requirements on resources in the SPP system. Information on fuel types and fleet characteristics is also useful in understanding market dynamics regarding congestion management, price volatility, and overall market efficiency.

Figure 2–18 depicts annual generation percentages in the SPP real-time market by technology type for the years 2014 through 2022.

Figure 2–18 Generation by technology type, real-time, annual



The long-term trend for coal-fired generation had been relatively flat prior to 2014 (not shown on chart above), but has been in a steady decline ever since. However, in 2021, because of higher gas prices, coal generation became more economic than many gas resources, resulting in an increase in the percentage of total generation by coal to 36 percent. That dropped to 33 percent of total generation in 2022, which is still up from the all-time low of 31 percent in 2020.

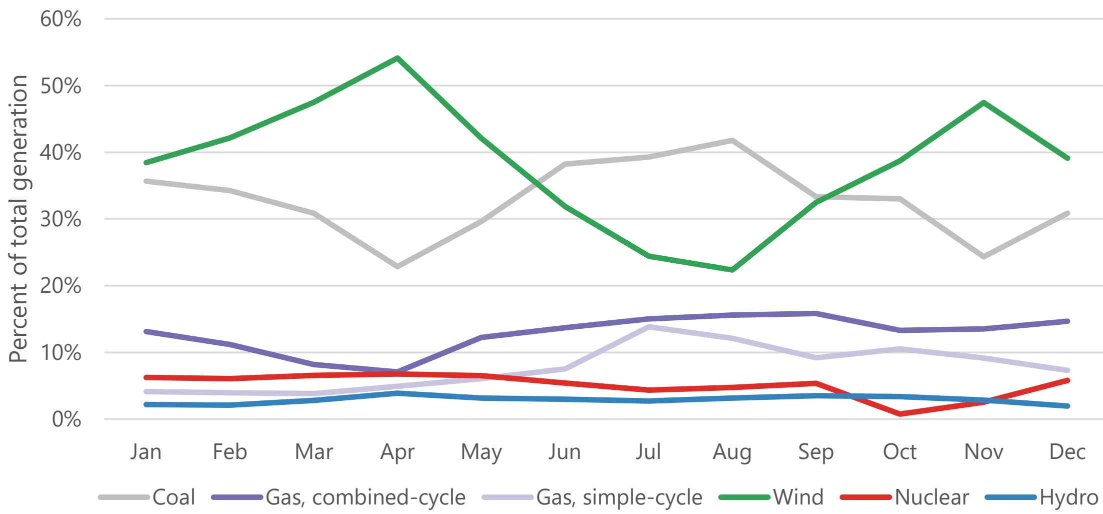
The wind generation share continues to steadily increase, from 12 percent in 2014 to nearly 38 percent in 2022. With higher gas prices in 2021 and 2022, generation from simple-cycle gas units such as gas turbines and gas steam turbines dropped from nine percent of total generation in 2020 to seven percent in 2021 and back up to eight percent in 2022. Gas combined-cycle generation had a much larger decrease, dropping from 18 percent of total generation in 2020 to 13 percent in 2021 and 2022.

Some of the annual fluctuations in generation by technology type shares are driven by the relative difference in primary fuel prices, namely natural gas versus coal. Gas prices from 2015 to 2020 were low, resulting in some displacement of coal by efficient gas generation, as can be seen in the higher generation from combined-cycle gas plants. However, with the higher gas prices in 2021 and 2022, this trend reversed.

Retirement of older coal generation, environmental limits, and competition from wind and natural gas technologies are some of the factors that will continue to put pressure on coal generation levels. Wind generation is expected to continue to increase in the years ahead.

Figure 2–19 depicts the 2022 monthly fluctuation in generation by technology type.

Figure 2–19 Generation by technology type, real-time, monthly



Wind generation as a percentage of total generation is generally lowest in the summer months at levels around 20 to 25 percent. In the highest wind generation months in the spring and fall, monthly levels can approach 50 percent of total generation, and even reached 54 percent in April 2022. In 2022, wind generation outpaced coal in every month, except for June through September.

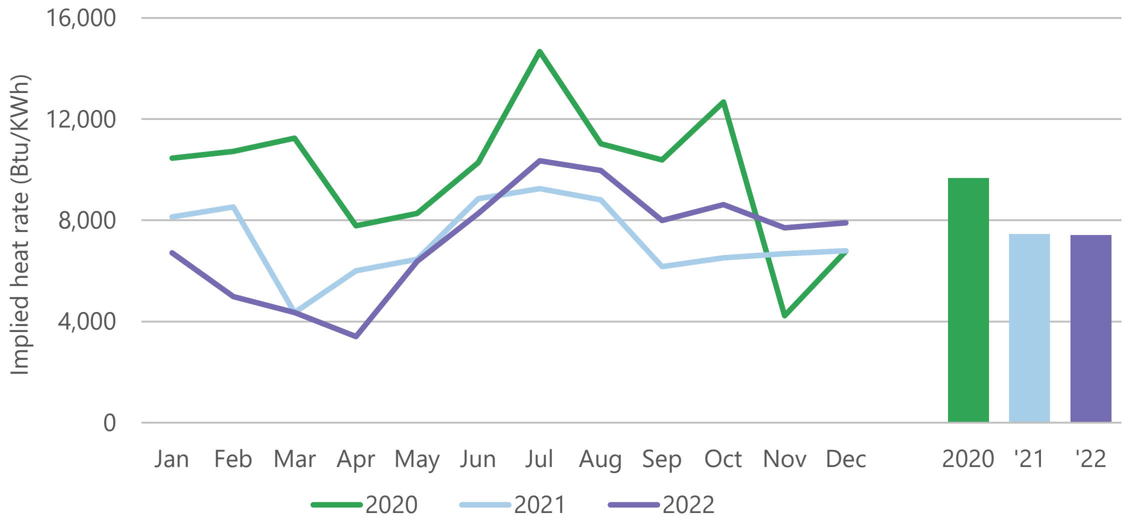
One method commonly used to assess price trends and relative efficiency in electricity markets originating from non-fuel costs is the implied heat rate. The implied heat rate is calculated by dividing the electricity price, net of a representative value for variable operations and maintenance (VOM) costs, by the fuel (gas) price.[32] For a gas generator, the implied heat rate serves as a "break-even" point for profitability such that a unit producing output with an operating (actual) heat rate below the implied heat rate would be earning profits, given market prices for electricity and gas. If the price of natural gas was $3/MMBtu, and the electricity price was $24/MWh, the implied heat rate would be (24/3) = 8 MMBtu/MWh (8,000 Btu/kWh). This

[32] For the implied heat rate calculation, natural gas units are assumed to be on the margin and accordingly, gas prices are taken as the relevant fuel cost. Emission costs are ignored in fuel cost as they rarely apply in the SPP market.

implied heat rate shows the relative efficiency required of a generator to convert gas to electricity and cover the variable costs of production, given market prices.

Figure 2–20 shows the monthly implied heat rate using real-time electricity prices for 2020 to 2022, along with an annual average for those years.

Figure 2–20 Implied heat rate



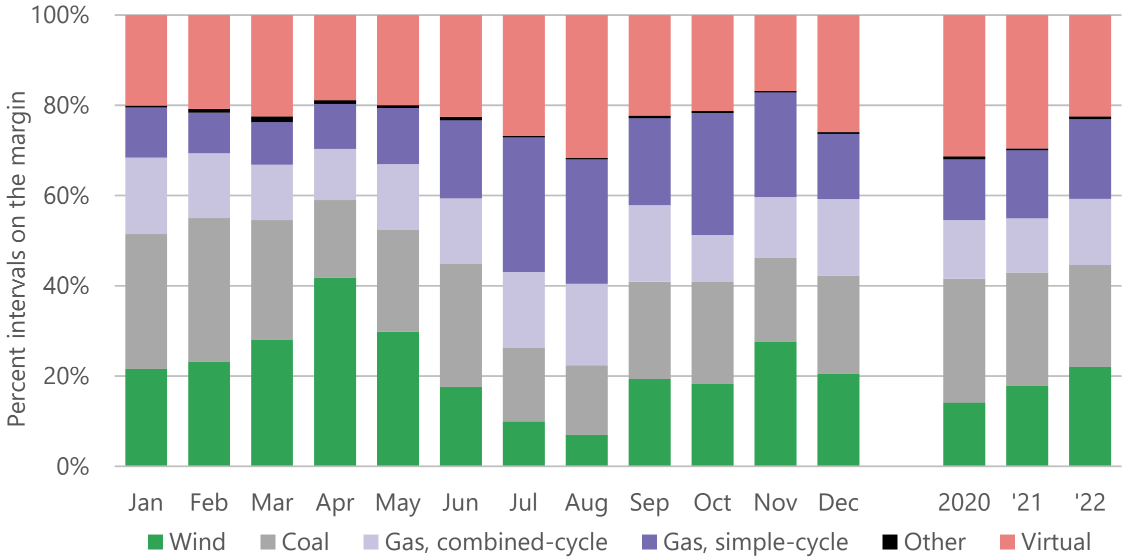
As shown above, the implied heat rates for 2021 and 2022 were significantly below 2020, with the 2021 and 2022 average of about 7,500 Btu/KWh, both down 23 percent from about 9,700 Btu/KWh in 2020. In fact, for 2022, the peak implied heat rate was in July at 10,400 Btu/KWh, down from a peak in 2020 (also in July) of 14,700 Btu/KWh, but up from the peak in 2021 at 9,400 Btu/KWh. With actual heat rates for most gas resources above the levels of implied heat rates in 2022, most gas resources would be unprofitable given electricity and gas prices during the year.

2.4.2 GENERATION ON THE MARGIN

The system marginal price represents the price of the next increment of generation available to meet the next increment of total system demand. The locational marginal price at a particular pricing node is the system marginal energy price plus any marginal congestion charges and marginal loss charges associated with that pricing node.

Day-ahead generation on the margin, shown in Figure 2–21, is different from real-time in that the day-ahead market includes virtual transactions. The real-time market does not include virtual transactions and is required to adjust to unforeseeable market conditions such as unexpected plant and transmission outages.

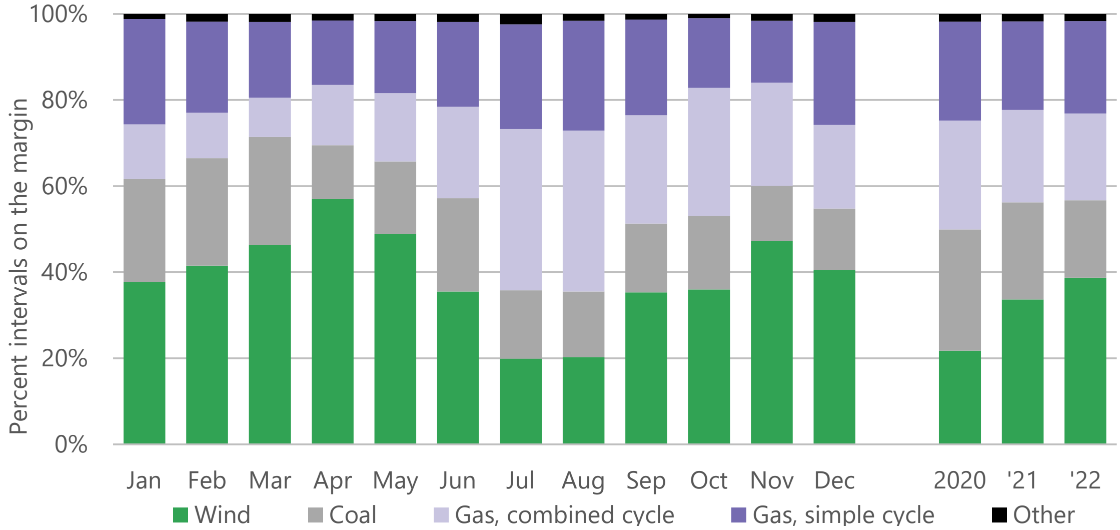
Figure 2–21 Generation on the margin, day-ahead



In 2022, coal resources, wind resources, and virtual transactions were on the margin almost an identical amount of time – coal at 22.6 percent of intervals, virtuals at 22.5 percent of intervals, and wind at 22.0 percent of intervals. Gas, simple-cycle accounted for 17.6 percent of intervals, while gas, combined-cycle accounted for 14.7 percent of intervals. While marginal virtual offers occur at all types of settlement locations, 70 percent of marginal virtual offers are at resource settlement locations, with a significant amount of that activity at wind generation resource locations.

Figure 2–22 illustrates the frequency with which different technology types were marginal and price setting in the real-time market. For a generator to set the marginal price, the resource must be: (a) dispatchable by the market; (b) not at the resource economic minimum or maximum; and (c) not ramp limited. In other words, it must be able to move to provide the next increment of generation.

Figure 2–22 Generation on the margin, real-time



It is worth noting the increase in wind generation being on the margin in the real-time market—from five percent of all intervals in 2014 and 2015 (not shown on the chart above) to nearly 39 percent in 2022. With the growing amount of dispatchable wind generation and an overall share of 32 percent of total nameplate capacity, wind generation is increasingly becoming the marginal technology a higher percentage of the time. At the end of 2022, 96 percent of nameplate wind capacity was dispatchable, compared to 93 percent at the end of 2021, and 89 percent at the end of 2020. At the beginning of the Integrated Marketplace in March 2014, just 27 percent of nameplate wind capacity was dispatchable.

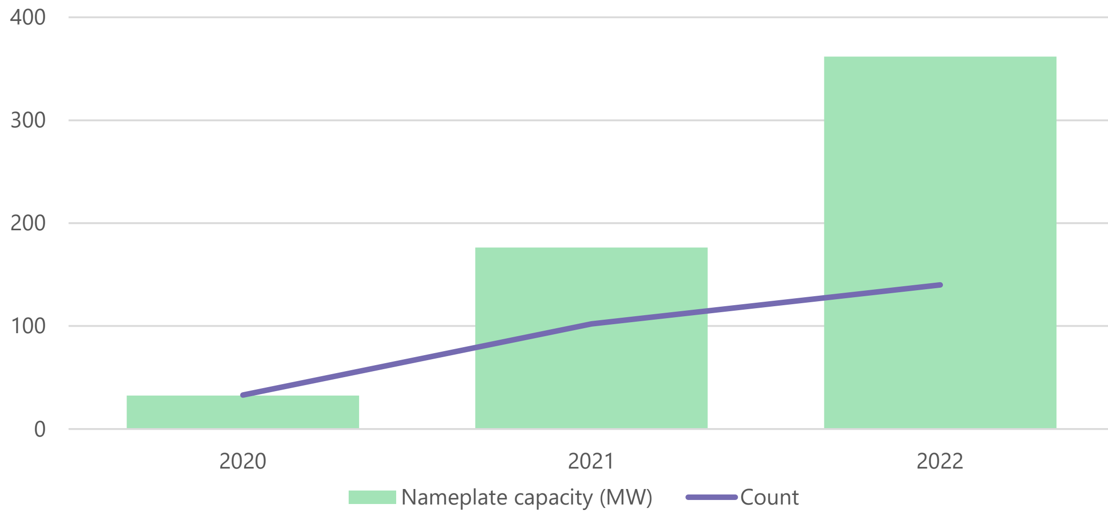
The most significant difference between day-ahead and real-time fuel on the margin is the absence of virtual offers in the real-time market. From the day-ahead to the real-time market, wind resources on the margin increased from 22 percent to 39 percent of all intervals (17 percentage points), while gas, simple-cycle and combined-cycle increased by four and five percentage points, respectively. Coal resources on the margin dropped by five percentage points from the day-ahead to the real-time.

On a monthly basis, intervals with coal generation on the margin are typically lower in the spring and fall months, offset by wind resources acting as base load units. This results in coal- and gas-fired units cycling more often. Increased wind generation is also affecting prices to some extent in every month of the year. The higher wind generation on the margin values in the spring and fall are as expected given that these periods are the windiest times of the year, as well as the lowest demand periods in the SPP footprint.

2.5 DEMAND RESPONSE

At the implementation of the Integrated Marketplace in March 2014, six demand response resources were registered in the market representing 48 MW of capacity. Those resources withdrew from the market in January 2015. There were no registered demand response resources in the SPP market until December 1, 2019. Figure 2–23 shows the number of dispatchable demand response resources and the nameplate capacity of those resources by year.

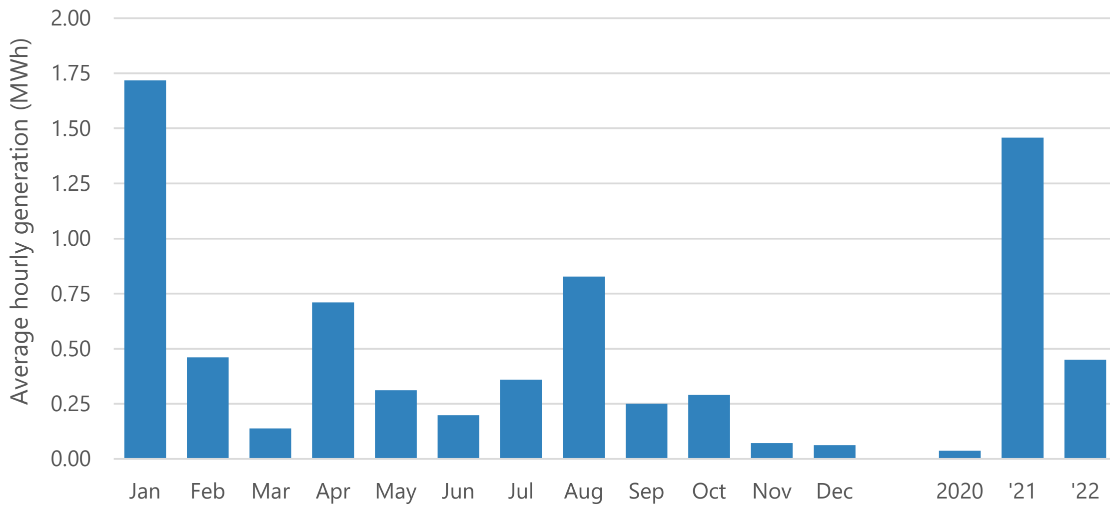
Figure 2–23 Demand response resources, count and capacity



In 2019, three demand response resources became active in the market representing 0.3 MW of capacity. As of December 31, 2022, there were 140 demand response resources in the SPP market, representing 361.8 MW of nameplate capacity.

Figure 2–24 shows average hourly generation by dispatchable demand response for 2022 and for the past three years.

Figure 2–24 Demand response resources, average hourly generation



As shown above, generation levels for dispatchable demand response resources remain low, with a high of 1.7 MWh of average hourly generation in January 2022. Average hourly generation by dispatchable demand response resources for 2022 was 0.45 MWh, down from 1.46 MWh in 2021.

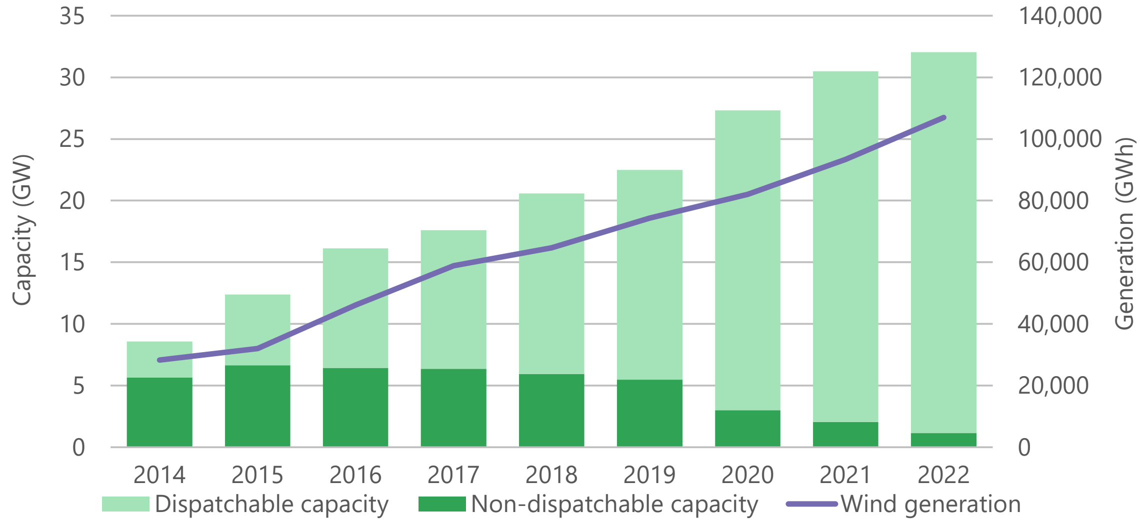
2.6 GROWING IMPACT OF WIND GENERATION CAPACITY

2.6.1 WIND CAPACITY AND GENERATION

The SPP region has a high potential for wind generation given wind patterns in many areas of the footprint. Federal incentives and state renewable portfolio standards and incentives are additional factors that have resulted in significant investment of wind generation capacity in the SPP footprint during the last several years.

Figure 2–25 depicts nameplate capacity and average monthly generation of SPP wind facilities by year since 2014.

Figure 2–25 Wind capacity and generation



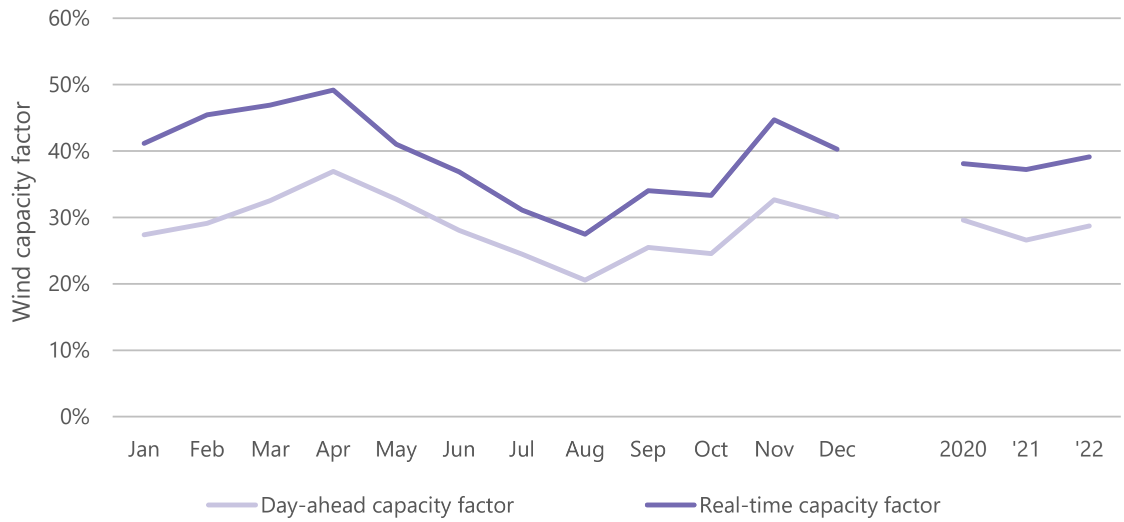
Total registered wind nameplate capacity at the end of 2022 was 32,032 MW, an increase of about 1,500 MW from 2021. At the end of 2022, 96 percent of all nameplate wind capacity was dispatchable, while just four percent was non-dispatchable. Average monthly wind generation output increased by 15 percent in 2022 to just over 107,000 GWh.

Consistent with previous years, wind generation fluctuated seasonally with summer being the low wind season, as usual, while spring and fall were the high wind seasons. Also typical of wind patterns is lower production during on-peak hours than off-peak. Furthermore, higher levels of wind generation tend to coincide with the morning ramp periods.

Figure 2–26 shows the wind capacity factor. Note that the wind capacity factor is reported for the entire month.[33]

[33] Wind resources may be considered in-service, but not yet in commercial operation. In this situation, the capacity will be counted but the resource may not be providing any generation to the market.

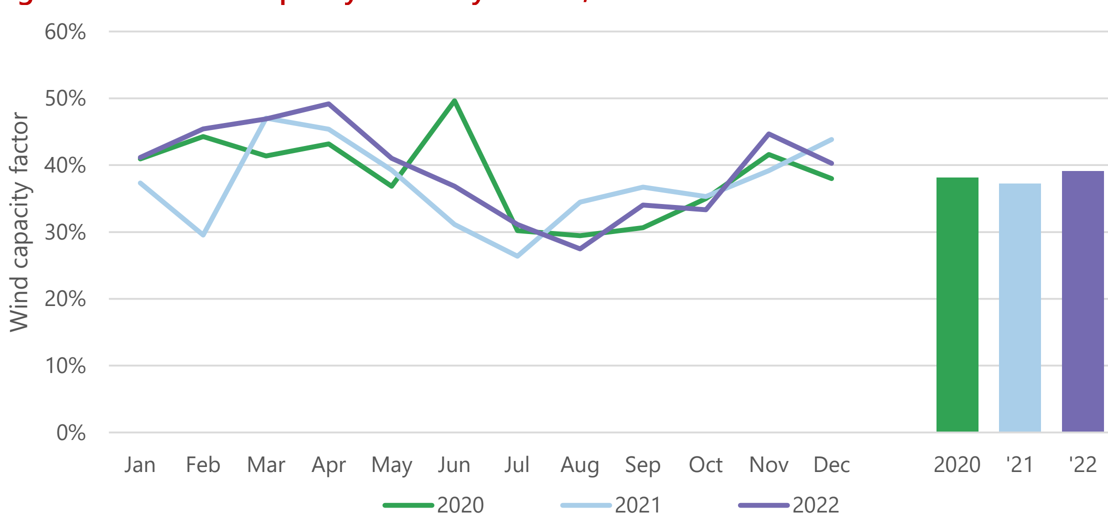
Figure 2–26 Wind capacity factor



The wind capacity factor in the real-time market dropped from 38 percent in 2020 to 37 percent in 2021, then climbed to 39 percent in 2022. The day-ahead wind capacity factor followed the same trend, dropping from 30 percent in 2020 to 27 percent from 2021, then climbing to 29 percent in 2022. The slowing of the addition of new wind capacity over the past year, coupled with an increase in wind generation drove the increase in the capacity factors from 2021 to 2022. The spread between the real-time and the day-ahead wind capacity, which historically has remained around a 10 percentage point difference, indicates a disconnect in the amount of wind in the real-time market, compared to the cleared wind in the day-ahead market.

Figure 2–27 shows the monthly real-time wind capacity factor for the past three years.

Figure 2–27 Wind capacity factor by month, real-time

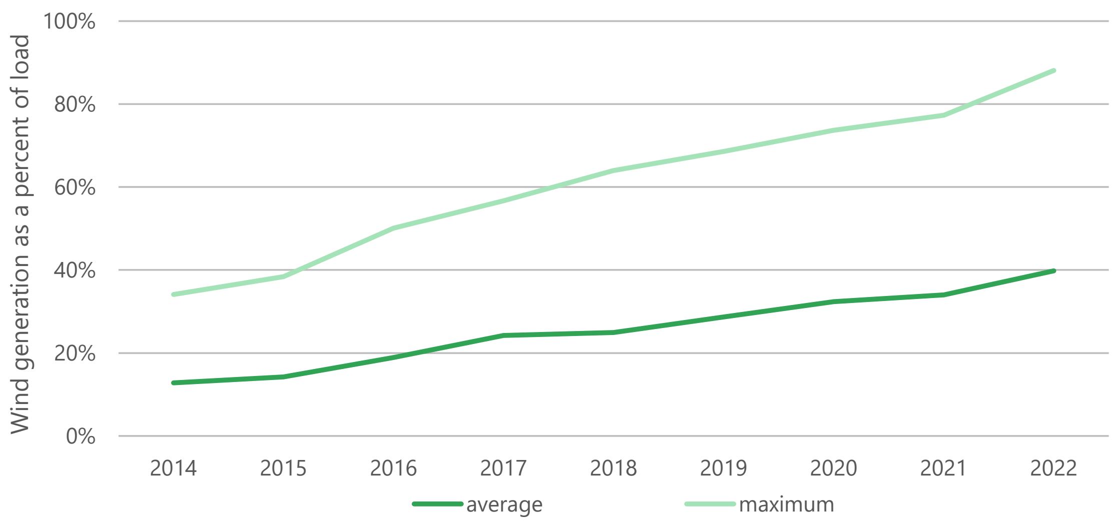


As shown above, the real-time capacity factor in 2022 has generally followed the same trend as prior years, with lower capacity factors in the summer months, and higher capacity factors in the other months of the year. Obviously outliers include an unusually windy month in June 2020 and an unusually low wind month in February 2021, especially during the winter weather event in that month.

2.6.2 WIND IMPACT ON THE SYSTEM

Average annual wind generation as a percent of load continues to increase as shown in Figure 2–28. The chart shows the trend for average and maximum wind generation as a percent of load since 2014, illustrating the continued increase since the start of the Integrated Marketplace.

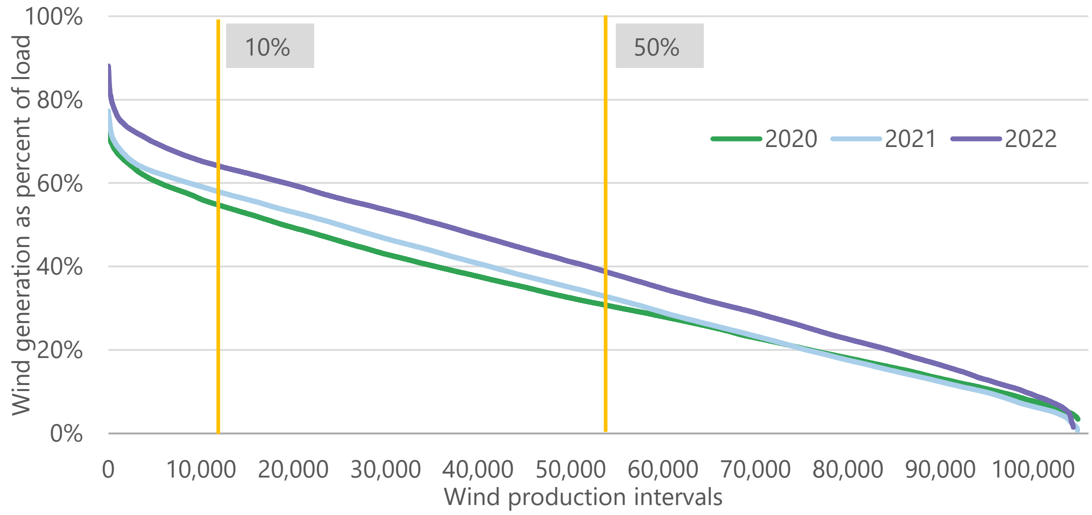
Figure 2–28 Wind generation as a percent of load



Average wind generation as a percent of load in the real-time market increased nearly six percentage points to 39.8 percent in 2022. After leveling off from 2017 to 2018, the growth of average wind generation as a percent of load has climbed steadily from 2018 to 2022. Wind generation peaked at 22,897 MW in 2022 on a five-minute interval basis, an increase of over eight percent from 21,118 MW in 2021. Wind generation as a percent of load for any five-minute interval reached a maximum value of just over 88 percent in 2022, which was up from 77 percent in 2021.

Figure 2–29 shows wind production duration curves that represent wind generation as a percent of load by real-time (five-minute) interval for 2019 through 2021.

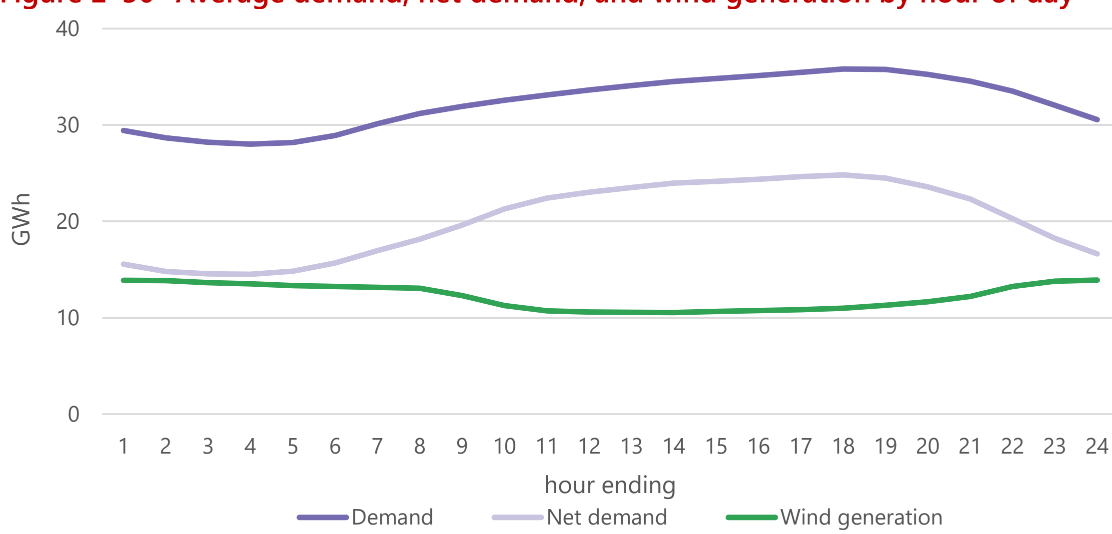
Figure 2–29 Wind production curve



The shift upward for the curve from year-to-year reflects an increase in total wind generation on an annual basis. The wind production curves show a consistent increase at all levels from 2020 to 2022, although the values tend to converge near the lower end of the curve. Wind generation served at least 31 percent of the total load during half of the year in 2020, with that figure increasing to 34 percent in 2021 and 40 percent in 2022.

Figure 2–30 below shows average demand by hour of day, along with wind generation, and net demand (demand minus wind generation) for 2022.

Figure 2–30 Average demand, net demand, and wind generation by hour of day



Wind generation typically produces more energy when demand is lowest and less when demand is highest. Wind generation is at the highest levels in the overnight hours while demand is low. In the morning hours, wind generation decreases while load is increases. To navigate these transitional hours, available rampable capacity is necessary. During these transitional hours, ramp scarcity is more likely.[34] While wind generation is very inexpensive, it must be paired with available rampable capacity.

While Figure 2–29 shows the yearly average load, wind, and net demand, there are seasonal differences. For instance, in the summer, wind generation is lower than during other times of the year, and loads are higher. Thus, the effect on net demand is smaller. However, in spring and fall, loads are lower and wind can have a significant effect on net demand.

2.6.3 WIND INTEGRATION

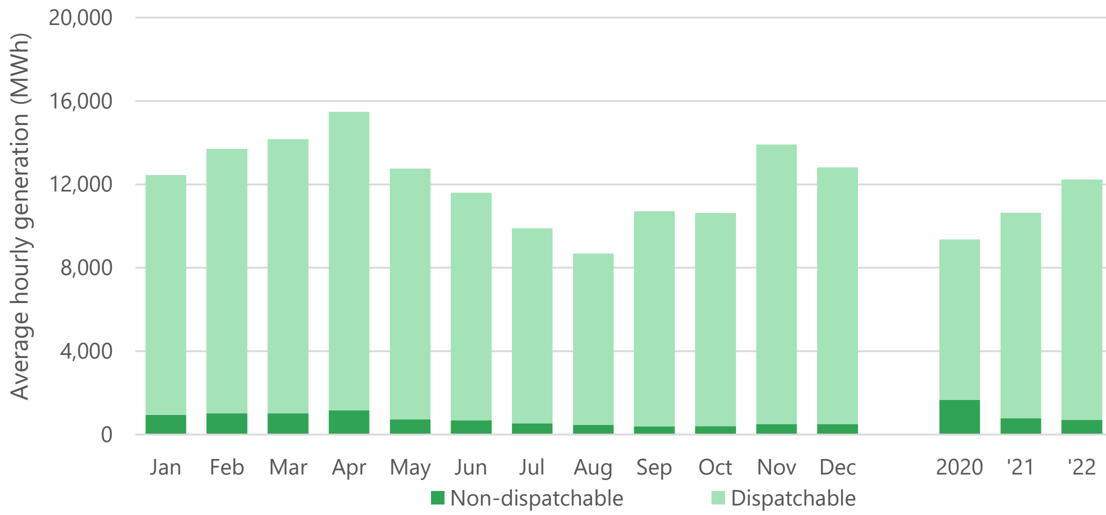
Wind integration brings low cost generation to the SPP region but does not count for much accredited capacity. There are a number of operational challenges in dealing with substantial wind capacity. For instance, wind energy output varies by season and time of day. This variability is estimated to be about four times more than load when measured on an hour-to-hour basis. Moreover, wind is counter-cyclical to load. As load increases (both seasonally and daily), wind production typically declines. The increasing magnitude of wind capacity additions, along with the locational concentration, volatility, and timeliness of wind, can create challenges for grid operators with regard to managing transmission congestion and resolution of ramping constraints (which began being reflected in scarcity pricing in May 2017) as well as challenges for short- and long-run reliability. Several price spikes occurred because of wind forecast errors. Under-clearing of wind is also the leading cause of day-ahead and real-time price divergence.

In the SPP market, wind and other qualifying resources were allowed to register as non-dispatchable variable energy resources, provided the resource had an interconnection agreement executed by May 21, 2011 and was commercially operated prior to October 15, 2012. As discussed in Section 2.4.2, in April 2019 FERC approved a change of the tariff in 2019 that required all non-dispatchable variable energy resources to become dispatchable by January 1, 2021, or 10 years after beginning commercial operations, unless the resource was a run-of-the-river hydro-electric facility or exercising its rights under the Public Utility Regulatory Policies Act (PURPA).

[34] This is discussed in Section 3.2.1.

Figure 2–31 illustrates dispatchable variable energy resources (DVERs) and non-dispatchable variable energy resources (NDVERs) wind output since 2019.

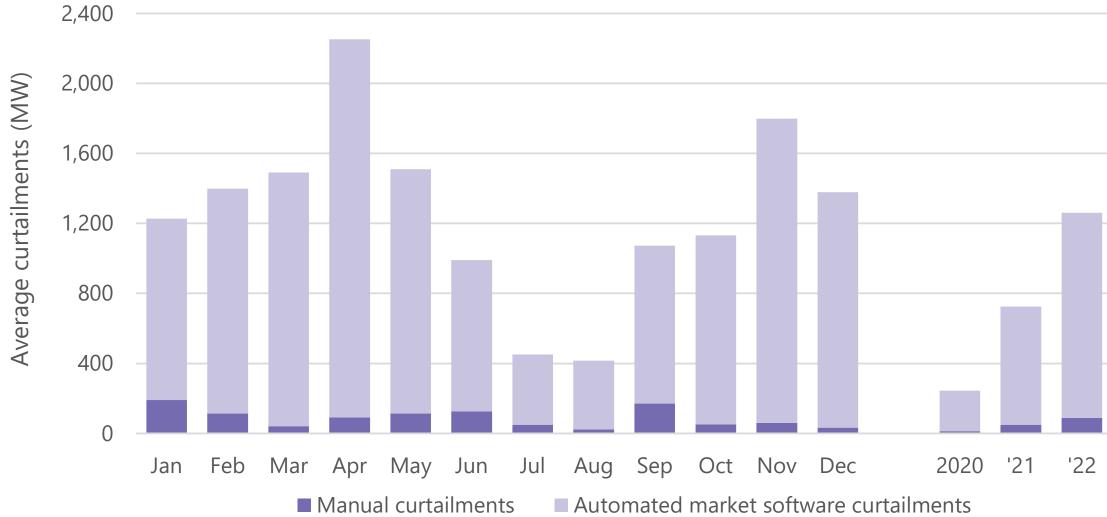
Figure 2–31 Dispatchable and non-dispatchable wind generation



April 2022 saw an hourly average of nearly 15,500 MWh of wind production, which was the highest since the start of the Integrated Marketplace. Also of note is the non-dispatchable generation continues to trend downward from year to year as more and more non-dispatchable resources are converted to dispatchable. In 2020, 18 percent of wind generation was produced by non-dispatchable variable energy resources, this declined to six percent in 2022.

Figure 2–32 illustrates average hourly curtailments for wind resources over the past three years. In real-time, there are two sources of wind curtailments: automated market software and manual. Automated market software curtailments occur when wind resources are dispatched down by the market system primarily to mitigate transmission constraints, while manual curtailments occur when the SPP reliability coordinator issues an out-of-merit-energy (OOME) instruction to manage reliability issues that cannot be handled through re-dispatch instructions.

Figure 2–32 Curtailments for wind resources



From 2020 to 2022, average hourly curtailments increased substantially from 244 MW to 1,260 MW. In addition, over this duration manual curtailments increased slightly as a share of total curtailments from five percent to seven percent, likely due to less transmission outages in 2020. Three factors associated with this curtailment increase are the large amount of wind generation in the market relative to the regional transmission buildout, the counter-cyclical nature of wind curtailments compared to load, and the conversion of previously non-dispatchable wind resources to dispatchable wind resources. As previously illustrated, wind capacity in the SPP footprint increased from approximately 27,300 MW in 2020 to over 32,000 MW in 2022, while MISO's installed wind capacity increased by 3,000 MW in 2021 and was expected to increase by approximately 4,000 MW in 2022.[35] Additional MISO capacity can create loop flow, potentially adding more congestion on SPP lines. This large increase in installed wind capacity has increased competition for access to transmission lines which in turn has led to a sharp increase in congestion and curtailments.

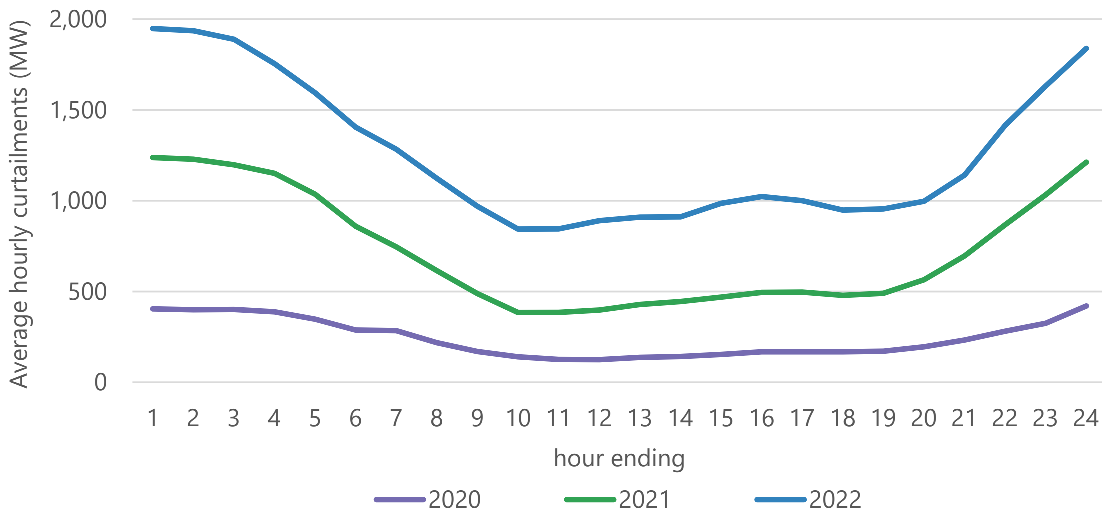
Manual dispatches are typically fewer during the lower wind output and higher demand months of summer, and more numerous during the higher wind output spring and fall months. Line loading in excess of 104 percent, operating guides, and outages caused 75 percent of manual

[35] See 2020 & 2021 State of the Market Report for the MISO Electricity Markets, and S&P Market Intelligence: Outlook 2022 for MISO (https://www.potomaceconomics.com/wp-content/uploads/2021/05/2020-MISO-SOM_Report_Body_Compiled_Final_rev-6-1-21.pdf) (https://www.potomaceconomics.com/wp-content/uploads/2022/06/2021-MISO-SOM_Report_Body_Final.pdf) (Outlook 2022: MISO expects net addition of 6.7 GW, primarily renewables | S&P Global Market Intelligence (spglobal.com))

dispatches for dispatchable variable energy wind resources. These same factors, plus transmission switching,[36] caused 80 percent of manual dispatches for non-dispatchable variable energy wind resources.

Next, wind curtailments are inversely related to load at both an hourly and seasonal level. Figure 2–33 depicts this relationship by showing that curtailments are relatively high during the morning, night, and shoulder months when load is relatively low.

Figure 2–33 Average hourly automated market software wind curtailments



In the 2022 Spring Quarterly State of the Market Report, MMU staff performed a regression analysis on wind curtailments in the market. This analysis found that wind production and real-time congestion dollars were able to explain 71.5 percent of wind curtailment levels.[37] In addition, this relationship was stronger during periods of high-wind production and low load levels. This relationship exists because wind production is relatively high during off-peak times when congestion is already relatively high, making it more likely for curtailment to occur.

Lastly, the conversion of previously non-dispatchable wind resources into dispatchable wind resources helped increase wind curtailment levels. Because of this rule change, non-dispatchable wind generation fell dramatically as a percentage of total generation over the past

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[36] Transmission switching out-of-merit instructions are issued to accommodate switching of 345kV transmission lines, because of stability concerns during the switching process. Typically, these instructions last from two hours prior to switching to two hours after switching is completed, whereas the 345kV line may be out of service for a longer timeframe.
[37] See SPP MMU Spring 2022 Quarterly State of the Market Report (https://www.spp.org/documents/67546/spp%20mmu%20quarterly%20state%20of%20the%20market%20report%20spring%202022.pdf)

three years. This affected automated market software curtailments because non-dispatchable resources are subject only to manual curtailments in the real-time market.

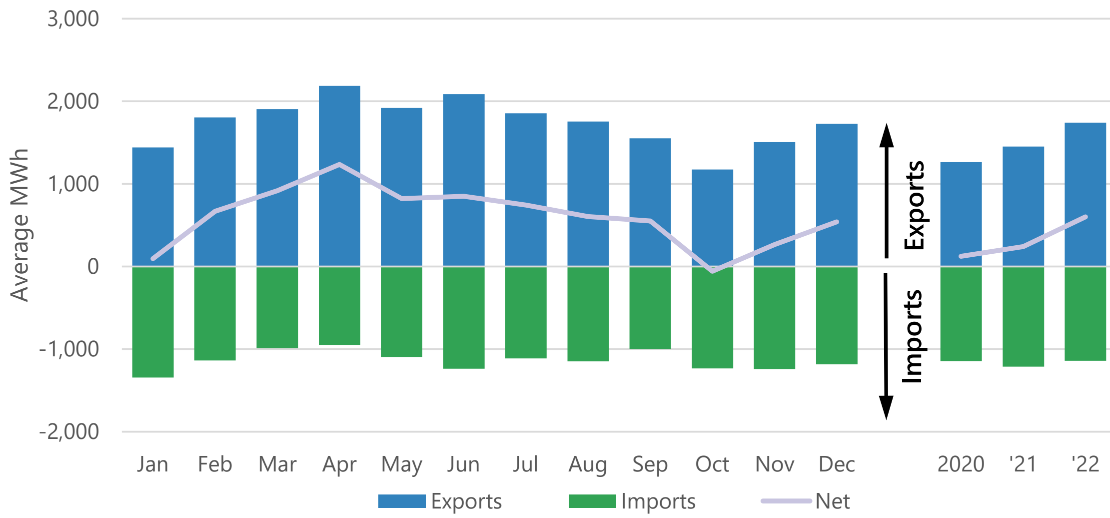
2.7 SEAMS

2.7.1 EXPORTS AND IMPORTS

The SPP Integrated Marketplace has greater than 6,000 MW of AC interties with MISO to the east, 720 MW of DC ties to ERCOT to the south, and over 1,000 MW of DC ties to the Western Interconnection to the west. Additionally, SPP has over 1,500 MW of interties with the Southwestern Power Administration (SPA) in Arkansas, Missouri, and Oklahoma, and over 5,000 MW of AC interties with the Associated Electric Cooperative (AECI) in Oklahoma and Missouri.

Figure 2–34 shows the imports and exports for SPP over the last three years and monthly imports and exports for 2022, both in real-time.

Figure 2–34 Exports and imports, SPP system



SPP has been a net exporter in real-time since 2017, prior to that it was a net importer. Typically, as wind generation increases, exports increase. In 2022, net exports were highest in April with an average of over 1,200 MWh. Nine of the 12 months averaged over 500 MWh of net exports while October was the only month with an average net import. Net exports for 2022 were 600 MWh, up from 240 MWh in 2021 and 122 MWh in 2020.

Figure 2–35 through Figure 2–39 show the data for the four most heavily used interfaces in real-time, namely ERCOT (includes North and East interfaces), SPA, MISO, and AECI. Also shown is PJM, which had an increase in imports from SPP in April during SPP's highest wind generation in

2022. Tight supply conditions and high prices normally drive exports to ERCOT. Exports to ERCOT increased in 2022 compared to 2021 and 2020 and were particularly elevated from May to August compared to other months in 2022. Southwestern Power Administration hydropower is imported to serve municipals tied to SPP transmission and is highest during on-peak hours, but is typically scheduled day-ahead. MISO interchange generally follows wind production, while AECI interchange is coordinated on an ad hoc basis. DC tie imports and exports are scheduled hourly, and the DC ties are not responsive to real-time prices. Nonetheless, many exports and imports with ERCOT and MISO are adjusted based on day-ahead price differences in the organized markets and expectations of renewable generation. Interchange with SPA and AECI is less responsive to prices. Transactions between SPP and PJM are minimal except during some of the highest wind generation months in SPP that drives exports.

Figure 2–35 Exports and imports, ERCOT interface

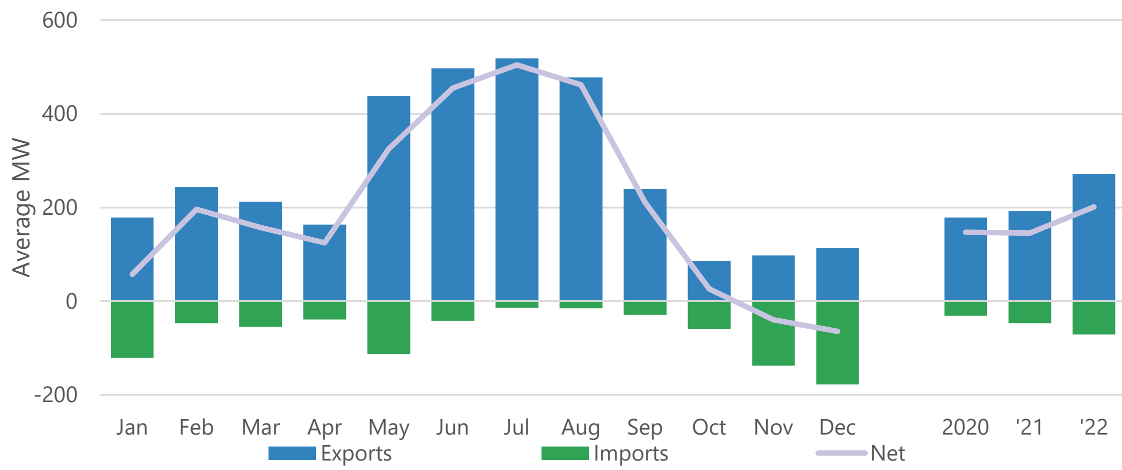


Figure 2–36 Exports and imports, Southwestern Power Administration interface

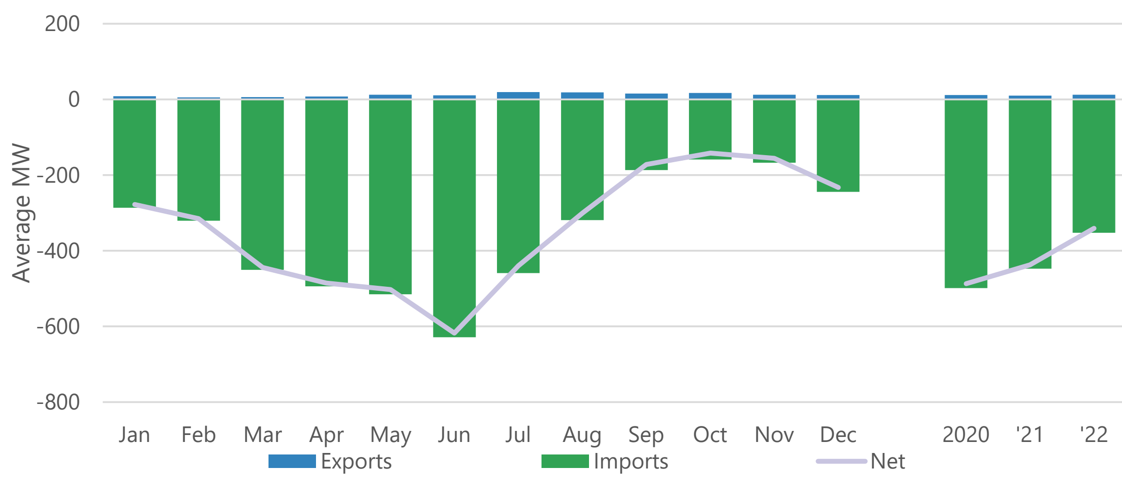


Figure 2–37 Exports and imports, MISO interface

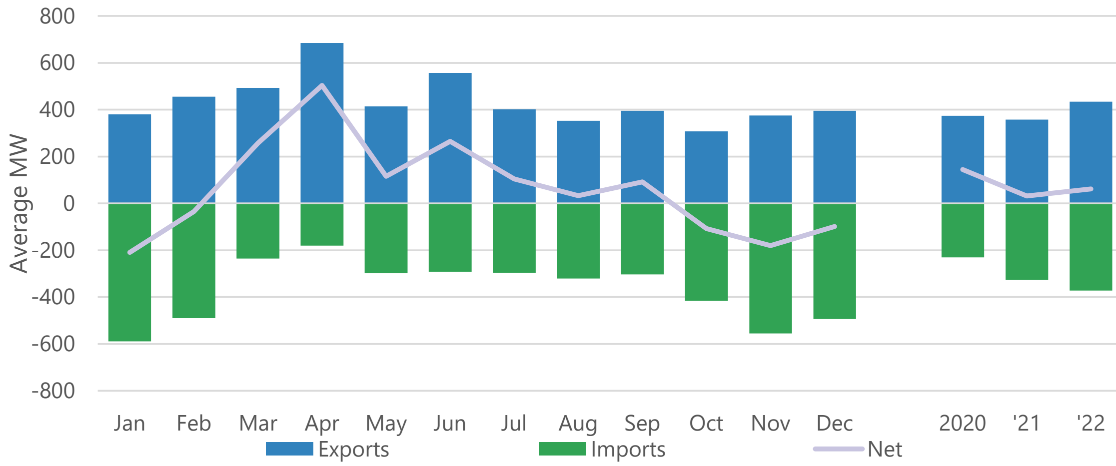


Figure 2–38 Exports and imports, Associated Electric Cooperative interface

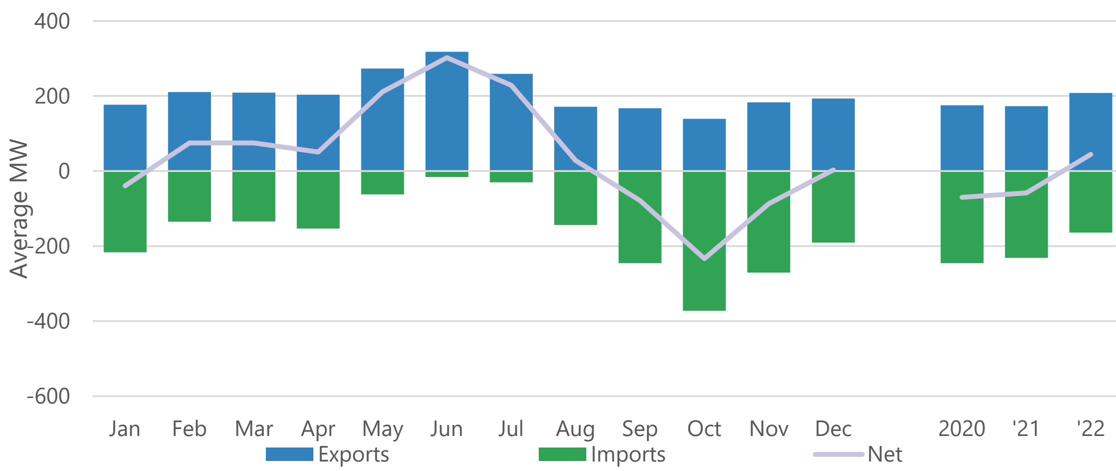
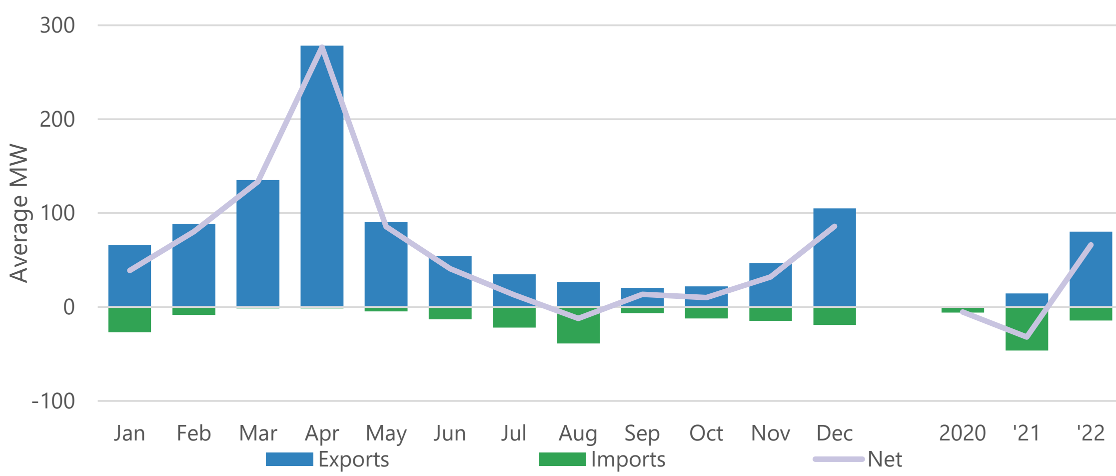


Figure 2–39 Exports and imports, PJM interface

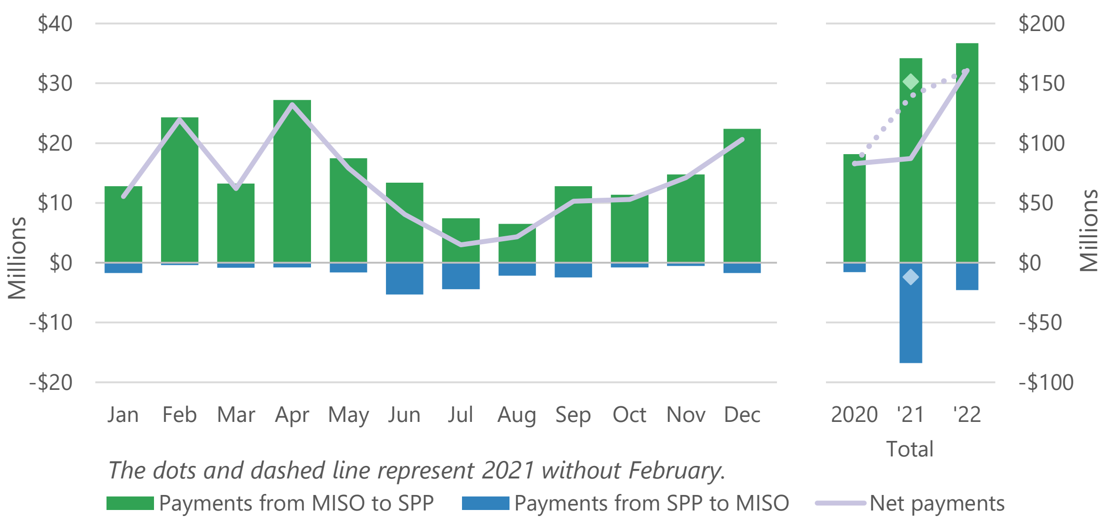


2.7.2 MARKET-TO-MARKET

SPP began the market-to-market (M2M) process with MISO in March 2015 as part of a FERC requirement that also included regulation compensation and long-term congestion rights.[38]

Each RTO is allocated property rights on market-to-market constraints. These are known as firm flow entitlements (FFE), and each RTO calculates its real-time usage, known as market flow. RTOs exchange money (market-to-market settlements) for redispatch based on the non-monitoring RTO's[39] market flow in relation to its firm flow entitlement. The non-monitoring RTO receives money from the monitoring RTO if its market flow is below its firm flow entitlement. It pays if above its firm flow entitlement. Figure 2–39 shows payments by month between SPP and MISO (positive is payment from MISO to SPP and negative is payment from SPP to MISO.)

Figure 2–40 Market-to-market settlements



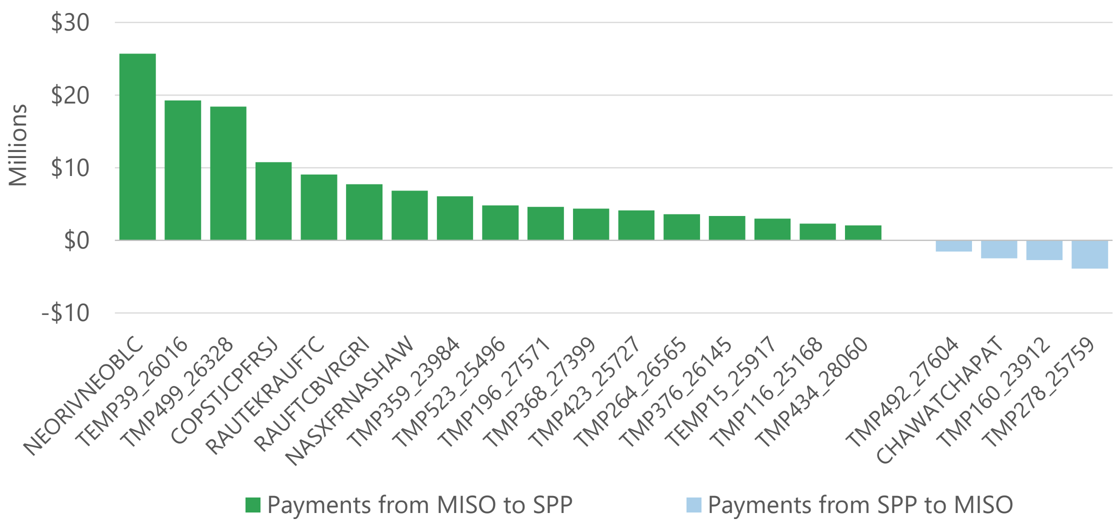
All months in 2022 were a net payment from MISO to SPP. Payments from MISO to SPP totaled over $183 million in 2022 while payments from SPP to MISO totaled almost $23 million. This resulted in a net payment from MISO to SPP of $160 million compared to $87 million in 2021. The dotted line represents the total net payment trend removing the winter weather event in

[38] The market-to-market process, regulation compensation, and long-term congestion rights were required to be implemented one year after go-live of the SPP Integrated Marketplace. The market-to-market process under the joint operating agreement allows the monitoring RTO and non-monitoring RTO to efficiently manage market-to-market constraints by exchanging information (shadow prices, relief request, control indicators, etc.) and using the RTO with the more economic redispatch to relieve congestion.
[39] Essentially, the RTO which manages the limiting element of the constraint is the monitoring RTO. In most cases, the monitoring RTO has most of the impact and resources that provide the most effective relief of a congested constraint.

February from the 2021 results. This results in a net payment from MISO to SPP of $139 million in 2021, still 15 percent less than the $160 million in 2022.

Figure 2–41 shows market-to-market payments (over $2 million from MISO to SPP and over $1 million from SPP to MISO) by flowgate for 2022.

Figure 2–41 Market-to-market settlements by flowgate



MISO wind impacts many SPP market-to-market flowgates and can increase the amount of market-to-market payments from MISO to SPP. Potomac Economics (external Independent Market Monitor for MISO) notes in their annual report[40] that MISO's average wind output was 14 percent higher in 2021 than in 2020 and 61 percent higher over the past three years. In 2022, April was the month with the highest net payments from MISO to SPP totaling over $26 million. Wind generation as a percentage of total generation was at its highest in SPP in the month of April in 2022 as well. The continued increase in wind and market-to-market payments signify low cost wind generation in both SPP and MISO both vying for transmission capacity to serve load economically.

Thirty flowgates had payments from MISO to SPP over $1 million for 2022, with eight of those flowgates having payments over $5 million and four of those over $10 million. Only four flowgates had payments from SPP to MISO of over $1 million. For 2022, the constraint with the highest payments from MISO to SPP was the Neosho-Riverton 161kV flowgate with over $25 million in payments. This constraint has resulted in payments from MISO to SPP totaling over $73 million since the start of the market-to-market process, which is the highest total for all

[40] See Wind Generation section under Energy Market Performance and Operations in the 2021 State of the Market Report for the MISO Electricity Markets.

constraints. The constraint with the third highest amount of payments from MISO to SPP was TMP499_26328[41] resulting in payments over $18 million in 2022. This and other MISO constraints were consistently not binding in the SPP day-ahead market until October 2022. The constraint with the highest amount of payments from SPP to MISO was TMP278_25759[42] totaling almost $4 million in 2022.

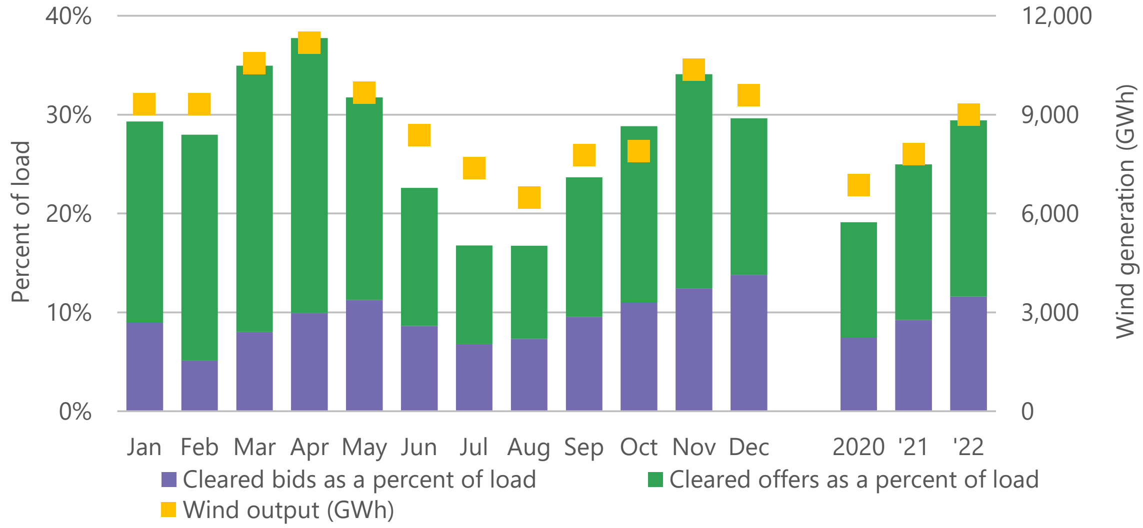
2.8 VIRTUAL TRADING

Market participants in SPP's Integrated Marketplace may submit virtual energy offers and bids at any settlement location in the day-ahead market. Virtual offers represent energy sales to the day-ahead market that the participant needs to buy back in the real-time market. These are referred to as "increment offers," which are like generation. Virtual bids represent energy purchases in the day-ahead market that the participant needs to sell back in the real-time market. These are referred to as "decrement bids," which are like load. The value of virtual trading lies in its potential to converge day-ahead and real-time market prices, and improve day-ahead unit commitment decisions.

In order for virtual transactions to converge prices, there must be sufficient competition in virtual trading; transparency in day-ahead market, reliability unit commitment, and real-time market operating practices; and predictability of market events. Since the market began in 2014, there has been increasing levels of virtual participation. Figure 2–42 displays the total volume of virtual transactions as a percentage of real-time market load along with wind output levels.

[41] MISO flowgate TMP499_26328: (Forman Xfmr 230/1 kV for the loss of Hankinson-Wahpeton 230 kV (OTP)).
[42] MISO flowgate TMP278_25759: (Overton Xfmr 345/161 kV (AMRN) for the loss of Overton-McCredie 345 kV (AECI-AMRN)).

Figure 2–42 Cleared virtual transactions as percent of real-time load

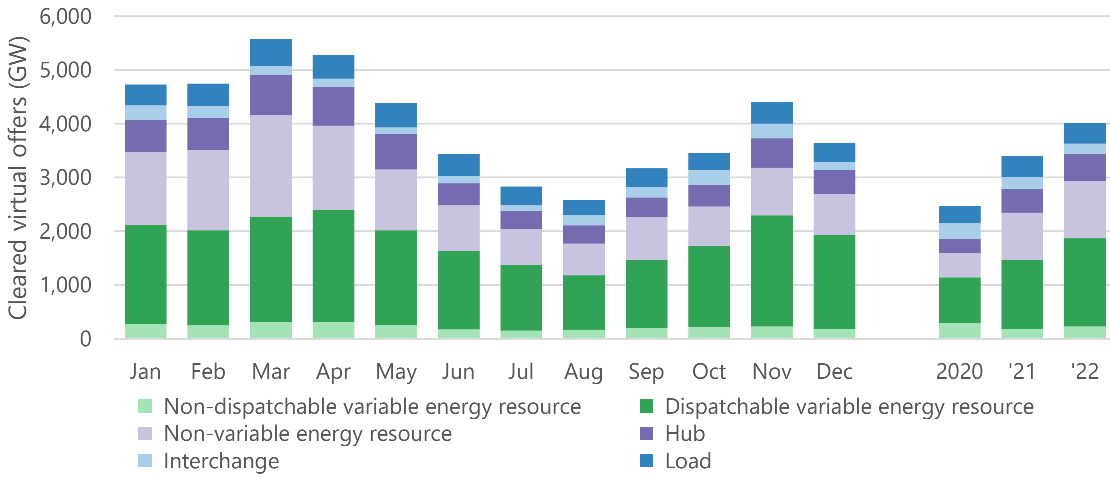


As shown in the figure, virtual transactions averaged 29.5 percent of real-time market load, compared to 25 percent in 2021 and 19 percent in 2020. Historically, the greatest increases in virtual transactions as a percentage of load have been with cleared virtual offers, however, his trend did not continue in 2022. Cleared virtual offers as a percentage of load amounted to over 11.5 percent, up from nine percent in 2021 and seven and one-half percent in 2019. Virtual cleared offers increased from slightly over 15.5 percent in 2021 to nearly 18 percent in 2022 while only averaging just under 12 percent in 2020. Virtual bids typically increase during high load hours. Virtual bids typically increase during high load hours.

At 29.5 percent of load, the average hourly total volume of cleared virtuals ranged from 3,631 MW of withdrawal to 5,569 MW of injection. The net cleared virtual positions in the market averaged about 1,938 MW of injection, or supply, each hour – a one percent increase year-over-year.

The majority of virtual transactions occurred at wind resources in 2022 – a trend that has been increasing since mid-2015. Figure 2–43 illustrates the settlement location types where virtual offers clear.

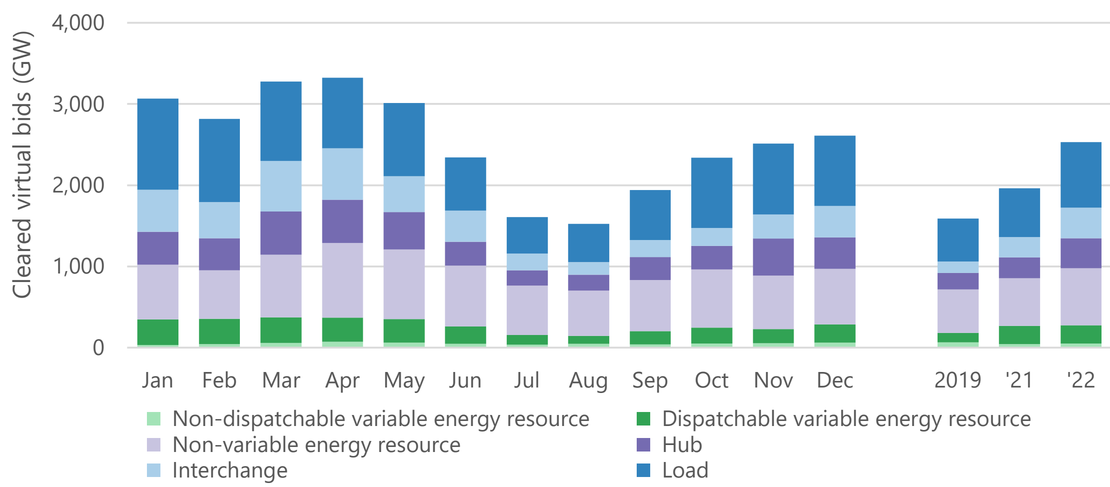
Figure 2–43 Cleared virtual offers by settlement location type



In total, the monthly average of cleared virtual offers for 2022 was over 4,000 GW, up from nearly 3,400 GW in 2021. This figure shows that an average of almost 1,900 GW of virtual offers cleared at variable energy resources per month during 2021.[43] This is up from an average of nearly 1,500 GW per month in 2021. Virtual offers at wind locations remain the largest volume of any single location type. These large volumes highlight the possibility that market participants with registered wind resources may be missing financial opportunities by under-cleared in the day-ahead market.[44]

Figure 2–44, below, shows the cleared virtual bids by settlement location types.

Figure 2–44 Cleared virtual bids by settlement location type



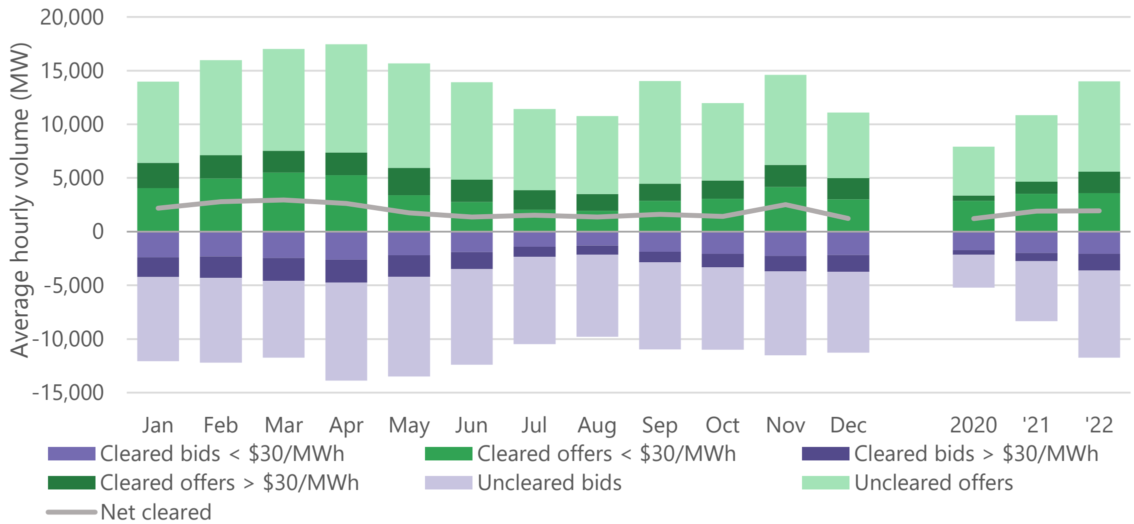
[43] This includes both dispatchable and non-dispatch variable energy locations.
[44] Section 4.1.3 on price divergence discusses the effects of under-cleared wind in the SPP market.

The locations where virtual bids occur are in contrast with the locational volumes of virtual offers. Cleared virtual bids were primarily at resources other than variable energy resources, followed by load locations. Variable energy resources had the lowest volume of virtual bids by location.

Average monthly cleared virtual bids increased from just under 2,000 GW in 2021 to over 2,500 GW in 2022. Cleared virtual bids at non-variable energy resources had a monthly average of nearly 703 GW cleared at non-variable energy resource locations in 2022, up from 589 GW in 2020. Virtual bids at load locations have been steadily increasing, up to a monthly average of 807 GW in 2022, up four percent from nearly 601 GW in 2021.

Figure 2–45 shows how virtual bids and offers are offered and cleared at the day-ahead market.

Figure 2–45 Virtual offers and bids, day-ahead market



The cleared demand bids that offered more than $30/MWh over the cleared day-ahead price, and the supply offers offered at less than $30/MWh under the cleared day-ahead price, are considered "price-insensitive." Compared to 2021, price-insensitive bids increased 110 percent and price-insensitive offers increased 76 percent. Cleared bids increased 33 percent, and cleared offers increased 20 percent. Price-insensitive bids and offers are willing to buy/sell at a much higher/lower price that could lead to price divergence rather than competitive, or price-sensitive, bids and offers leading to price convergence between the day-ahead and real-time markets. Price-insensitive bids and offers usually occur at locations with congestion and arbitrage against the day-ahead and real-time price differences. Given that price-insensitive bids and offers are likely to clear, these can be unprofitable if congestion around these locations does not materialize, leading to divergence between the markets.

Financial information for virtual trades is shown monthly and on an annual basis for 2022 in Figure 2–46.

Figure 2–46 Virtual profits with distribution charges

Month	Gross profit	Gross loss	Gross net profit (prior to fees)	RNU charges/ credits	Day-ahead make-whole payment charges	Real-time make-whole payment charges	Virtual fee	Total net profit
January	77.0	-38.3	38.7	-8.1	-1.2	-8.0	-0.2	21.1
February	88.6	-43.6	45.0	-7.1	-1.6	-8.6	-0.2	27.5
March	78.6	-45.7	32.9	-9.4	-2.1	-9.3	-0.3	11.8
April	78.2	-41.8	36.3	-9.8	-3.5	-10.2	-0.3	12.6
May	67.1	-36.1	31.1	-8.2	-2.2	-14.2	-0.2	6.4
June	47.8	-26.5	21.4	-5.0	-1.4	-17.8	-0.2	-3.0
July	56.0	-38.1	17.9	-2.0	-0.6	-23.1	-0.1	-8.0
August	51.9	-27.8	24.1	-2.5	-0.7	-17.7	-0.1	3.1
September	40.8	-11.8	29.0	-5.2	-1.2	-14.8	-0.2	7.7
October	49.3	-20.4	28.8	-5.3	-1.1	-8.2	-0.2	14.1
November	66.0	-37.5	28.5	-8.0	-1.2	-9.1	-0.2	10.1
December	78.9	-43.5	35.4	-5.4	-2.4	-14.3	-0.2	13.1
Total	780.1	-411.1	369.0	-76.0	-19.1	-155.2	-2.3	116.4

All figures in $ millions.

Ten months in 2023 were profitable in aggregate for virtual transactions with June and July being the exceptions. In the 106 months since the market began, only 15 months have had a net loss when factoring in fees. Three factors that led to virtual trading losses in June and July were low wind generation, low load, and relatively higher day-ahead and real-time make-whole payments. Usually, virtual trading profits are higher during periods of high wind and low load which creates large price differences between the day-ahead and real-time markets. These price differences stem, in part, from under-cleared wind in the day-ahead market. This contributes to a higher portion of negative prices in real-time as compared to the day-ahead.[45]

[45] Section 4.1.3, price divergence, discusses the effects of unscheduled wind in the SPP market.

Financial information for virtual trades on an annual basis for the past three years is shown in Figure 2–47.

Figure 2–47 Virtual profits with distribution charges, annual

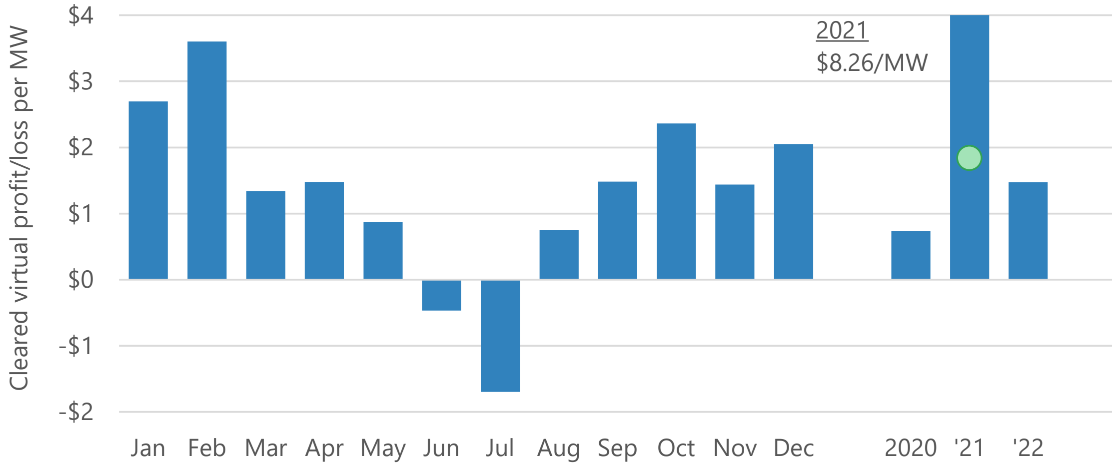
	2020	2021	2022
Raw profit	$ 252.4	$1,070.1	$780.1
Raw loss	-180.5	-390.0	-411.1
Raw net profit, before charges and fees	71.8	680.2	369.0
Revenue neutrality uplift charges/credits	-5.4	-29.1	-76.0
Day-ahead make-whole payment charges	-3.8	-9.8	-19.1
Real-time make-whole payment charges	-26.2	-104.8	-155.2
Virtual fees	-0.8	-1.7	-2.3
Net profit	$ 35.6	$ 534.7	$ 116.4

All figures in $ millions

Virtual trades profited $369 million before charges and fees in 2022, nearly a 46 percent increase from 2020. The large decrease from 2021 to 2022 in aggregate profit stems largely from the 2021 winter weather event. Virtual bids can be charged distribution fees for day-ahead make-whole payments and virtual offers are susceptible to real-time make-whole payment distribution fees. In addition, both types of transactions can receive revenue neutrality uplift charge/credits and are assessed a per megawatt virtual fee. The average 2022 rates per megawatt for day-ahead make-whole payments, real-time make-whole payments, and real-time revenue neutrality uplift distributions are $0.23/MWh, $2.17/MWh, and $0.91/MWh, respectively. When factoring in these charges and credits, the net virtual trading profits for 2022 were $116.4 million, which is about 15 percent of the profit level before fees. Net profits in 2022 decreased 78 percent from $534.7 million in 2021.

Net profits are typically small when assessed on a per megawatt basis. However, the 2021 average was much larger than in 2020 and 2022. Figure 2–48 illustrates the monthly average profit per megawatt for a cleared virtual in 2022.

Figure 2–48 Profit and loss per cleared virtual, after fees

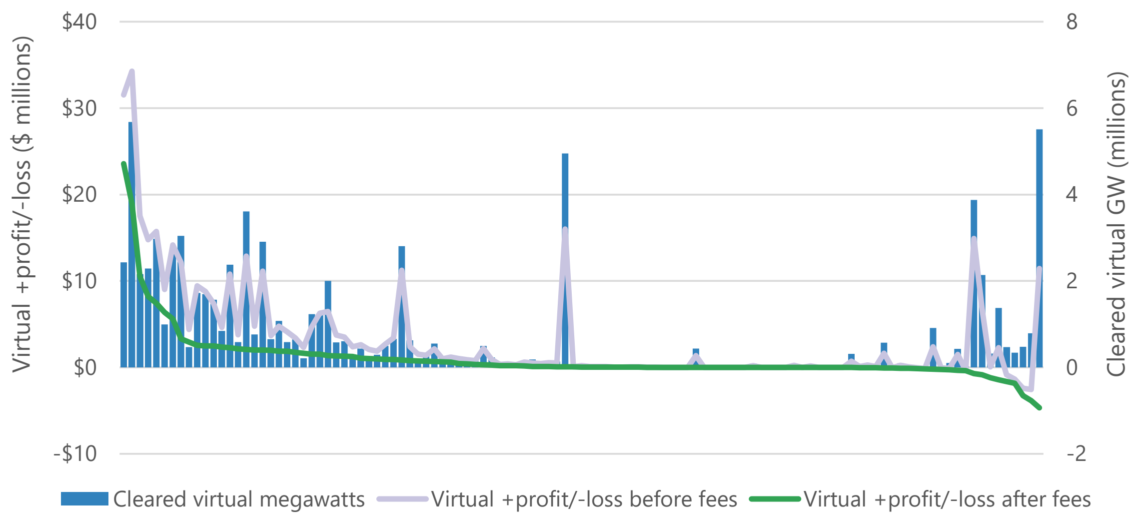


The dot on the chart represents 2021 without February included.

The chart shows that, when factoring in all fees, the average profit per megawatt in 2022 was $1.47 per cleared megawatt, a decrease from $8.26 per cleared megawatt in 2021. However, if February 2021 were excluded due to the impacts of the winter weather event, the 2021 average profit per megawatt would have been $1.84/MW. This would mean that average profit per megawatt was down 20 percent for from 2021 (excluding February) to 2022.

One hundred and thirteen participants transacted virtuals in 2022, an increase of ten from 2021. Figure 2–49 illustrates each virtual participant's virtual portfolio for the year by both net megawatts cleared and profits before and after adjusting for fees.

Figure 2–49 Virtual portfolio by market participant



Six participants accounted for about 64 percent of the virtual profits after fees, which can also be referred to as net profits. These participants account for roughly 21 percent of the transactional volume in the market. Virtual trading generated profits before fees for 96 participants, and profits after fees for 73 participants. The total losses after fees amounted to roughly $21.6 million, and three entities accounted for nearly 55 percent of that loss.

Additionally, Figure 2–49 highlights the disparity in the trading fees paid by each market participant. These fees totaled over $145 million in 2022; they include: virtual fees (one percent), real-time revenue neutrality uplift fees (20 percent), day-ahead make-whole payment fees (seven percent), and real-time make-whole payment fees (72 percent). Virtual bids are subject to virtual fees, real-time revenue neutrality fees, and day-ahead make-whole payment fees. Virtual offers are subject to virtual fees, real-time revenue neutrality fees, and real-time make-whole payment fees. Nearly three-quarters of the total fees assessed to virtual transactions are assessed only to virtual offers.

The discrepancy in virtual fees relates to the quantity calculation associated with payers of real-time make-whole payments – specifically, the real-time net settlement location deviation hourly amount. This determinant accounted for over 85 percent of the real-time make-whole payments in 2021, or roughly $133 million. As the name implies, the quantity applied to applicable non-virtual transactions includes only the incremental deviations from day-ahead, however the quantities assessed to virtual offers include the full virtual offer quantity.

This calculation methodology, when combined with the larger make-whole payments normally associated with real-time, generally leads to higher fees associated with virtual offers when compared to virtual bids. In 2022, the fees associated with virtual offers amounted to $4.79 per megawatt compared to $3.06 per megawatt for virtual bids. This calculation methodology and associated incentives could be part of the reason why virtual trading offsets only part of the under-clearing of wind resources in the day-ahead market and should be considered as part of any analysis or evaluated as part of any potential solution to address price divergence. The market monitor will continue to evaluate these trends going forward.

Cross-product market manipulation has been a concern in other RTO/ISO markets, and extensive monitoring is in place to detect potential cases in the SPP market. For example, a market participant may submit a virtual transaction intended to create congestion that benefits a transmission congestion right position. Generally, this behavior shows up as a loss in one market, such as a virtual position, and a substantial associated benefit in another market, such as a transmission congestion right position. In the SPP market, only seven market participants lost more than $100,000 in virtual transactions before fees, and 17 lost more than $100,000 in virtual transactions after fees in 2022. The market monitor reviews these outcomes and takes actions as needed.

2.9 RESOURCE ADEQUACY

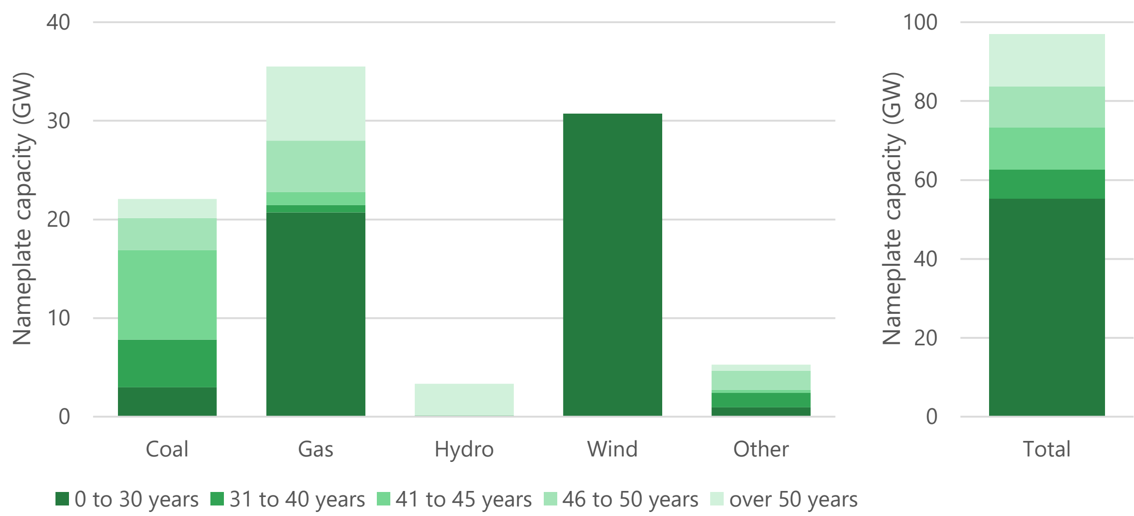
In February 2021, resource adequacy challenges were brought to the forefront as SPP's resource adequacy construct was tested during a severe cold snap. This event highlighted several issues including the lack of seasonal resource adequacy requirements and the need to improve accreditation to better factor in availability. The MMU made several recommendations after the February winter weather event to address resource adequacy. SPP is currently addressing these as well as other recommendations and issues in the stakeholder process, with varying degrees of success.[46,47]

This section highlights the state of SPP capacity within the SPP footprint.

2.9.1 CAPACITY AGE, ADDITIONS, AND RETIREMENTS

Figure 2–50 illustrates that certain segments of the SPP generation fleet are aging.

Figure 2–50 Capacity by age of resource



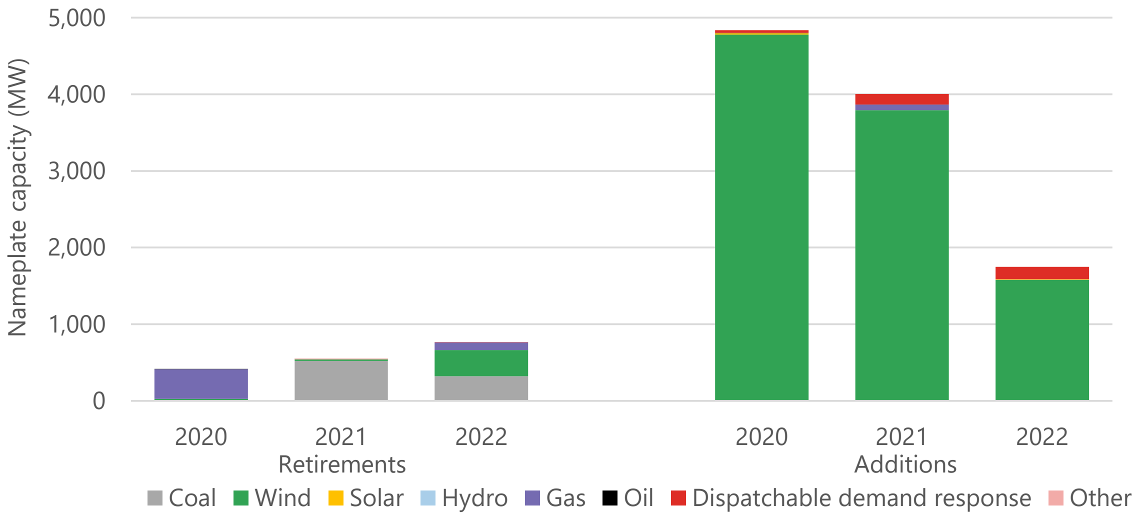
As of the end of 2022, nearly 43 percent of SPP's generation fleet is more than 30 years old. In particular, 87 percent of coal capacity and 42 percent of gas capacity is older than 30 years. According to the U.S. Energy Information Administration (EIA), the national average retirement

[46] SPP MMU Report on February 2021 Winter Weather Event
[47] IRATF process

age of coal-fired generation in 2021 was 52 years.[48] Aside from the resources that joined SPP from Nebraska in 2009 and the Integrated System[49] in 2015, the largest source of new capacity in the SPP footprint over the last 10 years has been wind capacity.

Figure 2–50 shows the annual trend of capacity additions and retirements over the past three years.

Figure 2–51 Capacity additions and retirements by year



Almost all of the coal and gas capacity retired since 2016 has been 1950s era plants. Most of the wind units that retired were first-generation wind resources. One of the wind units retired in 2022 was partially built, abandoned, and never entered commercial operation. Of the 766 MW of retired capacity in 2022, 340 MW were wind units, 322 MW were on a coal unit, 100 MW were gas units, and the remaining four MW were on dispatchable demand response units.

Total nameplate capacity additions were 1,750 MW in 2022. For capacity additions, wind generation has accounted for 92 percent of the additions over the last three years. Of note, only 1,579 MW of wind generation was added in 2022, this is down markedly from 4,800 MW in 2020 and 3,800 MW in 2021. Even with the increased amount of solar generation in the generation interconnection queue, only one 10 MW solar resource was added in 2022. Several dispatchable demand response resources were added to the market in 2022, ranging in size from 0.1 MW to 100 MW. Considering the 1,750 MW in capacity additions along with 766 MW of retirements, 984 MW of net generating capacity was added to the SPP market in 2022.

[48] Through December 2021. *See* https://www.eia.gov/electricity/data/eia860M/.

[49] Market participants added as part of the Integrated System are Western Area Power Administration – Upper Great Plains (Western), Basin Electric Power Cooperative, and Heartland Consumers Power District.

2.9.2 GENERATION AVAILABILITY

Generation availability represents the generating capacity available to the market to serve load and ancillary service requirements. In 2022, SPP had over 98 GW of generation capacity of which 64.5 GW were accredited. Average hourly available capacity averaged 63,655 MW.[50]

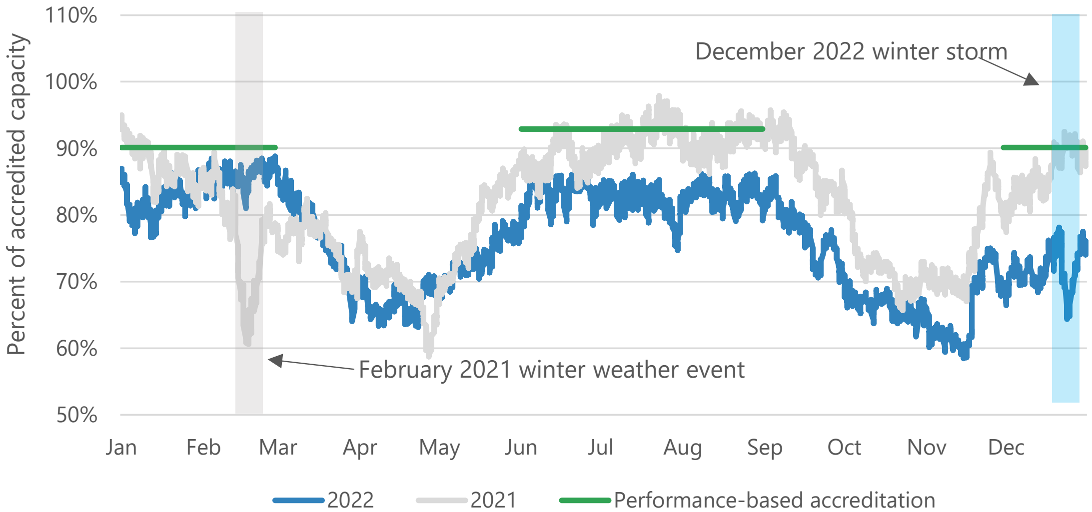
The MMU recommends the accreditation process render an accredited capacity that reflects the true generation availability at any given time as closely as possible. For resources that are not covered under SPP's proposed effective load carrying capability (ELCC) process,[51] the current capacity accreditation process for ensuring available capacity to serve demand is completed annually and is singularly focused on adequate resource availability during the summer peak. Accreditation numbers are based on a performance test of a resource's installed capacity and do not reflect historic performance or planned maintenance.

The Improved Resource Availability Task Force (IRATF) and the Supply Adequacy Working Group (SAWG) led the review of the resource accreditation process in 2021 due to concerns that the current process was not accurately reflecting the expected availability of generation. After reviewing several approaches, their ultimate recommendation was to adopt a single summer season performance-based accreditation (PBA) process using equivalent forced outage rate demand (EFORd'), a methodology that isolates the effects of planned maintenance and outages, and to bring the equations more in line with how other regions measure outage rates for accreditation purposes.[52] Under current timelines, performance based accreditation will be implemented partially in 2025 and phased in over the next several seasons.[53] However, availability data suggest that this updated accreditation process will likely not provide an accurate reflection of resource availability and will likely be insufficient to ensure reliability absent other changes.

[50] The maximum capacity available in any given hour was 80,446 MW on February 11 and the minimum capacity available occurred on November 6 when 43,325 MW were available.
[51] While FERC initially approved ELCC in August 2022, it since reversed its decision in March 2023. See ER22-379-003.
[52] See "GTTF Performance Based Accreditation Recommendations for Conventional Resources" published by the Generator Testing Task Force.
[53] Performance based accreditation and the current timeline are currently on hold as stakeholder groups address concerns brought up in FERC's reversal of their approval of ELCC accreditation in March 2023.

Figure 2–52 shows the expected availability percentage using performance based accreditation.[54] It also shows the actual availability of non-ELCC accredited capacity that is registered internally to SPP (and hence, whose performance is directly measurable) throughout 2022. Any difference between these two numbers represents the gap between what we would expect to be available under performance-based accreditation versus what was actually available during a given period.

Figure 2–52 Percent of accredited capacity available



In 2022, the internal accredited capacity was approximately 63,122 MW, or roughly 98 percent of total accredited capacity in SPP. Resources not using ELCC accreditation (steam turbines, large hydro, etc.) accounted for just under 58,000 MW or 90 percent of accredited capacity. Figure 2-51 shows that, for the non-ELCC accredited megawatts, roughly 76 percent were available on average in 2022. That figure went as high as 89 percent (56,000 MW) in a total of 3 hours, and as low as 58 percent (37,000 MW) for an hour. Availability was significantly below average during the winter storm in December, hitting a minimum availability of 64 percent for multiple hours on December 24.

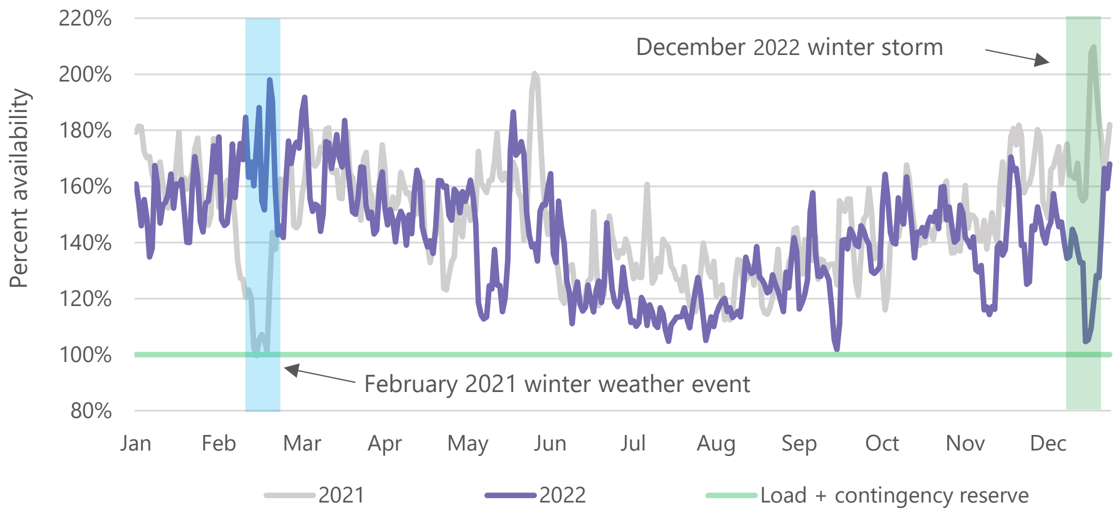
These figures are significantly lower than the expected availability of 93 percent in summer using the performance based accreditation methodology. Figure 2–52 also highlights the SPP recommendation that a winter season be included in the adequacy process in addition to summer. Here too, available capacity was significantly lower than the expected availability of 90

[54] This calculation excludes resources that are proposed to be accredited under the ELCC approach, including wind, solar, and storage resources. Excluding these resources provides a direct comparison between the proposed accreditation approaches and the performance of the resources that would be accredited under those approaches.

percent for winter. The MMU recommends that a resource adequacy requirement be applied to all four seasons, and preferably monthly. The significant troughs in actual availability in the spring and autumn seasons reflects a lower forecasted demand and lower probability of a significant event. This should be reflected in a lower supply adequacy requirement that would provide SPP a reasonable estimate of actual expected available generation while giving resources an opportunity to take planned maintenance outages when the risks and needs to the system change.

Looking at generation availability relative to demand shows the reliability margin available to the region. Figure 2–53 shows, for each day, the minimum hourly capacity available from all internal resources registered in the market as a percentage of demand for that same hour for 2022 and 2021.[55] The SPP planning criteria requires a resource planning margin of 12 percent above each load responsible entity's summer season net peak load, an amount that increased to 15 percent in 2023.

Figure 2–53 Minimum capacity available as a percent of load



The maximum amount of capacity offered during any hour in the day-ahead market was just under 77,000 MW while the maximum demand was 53,332 MW. While these numbers indicate SPP has sufficient capacity to cover internal demand in theory, in reality, the margin between available capacity and demand varies significantly. During 2022, minimum availability as a percent of load during a given day averaged 140 percent, but went as low as 93 percent. The

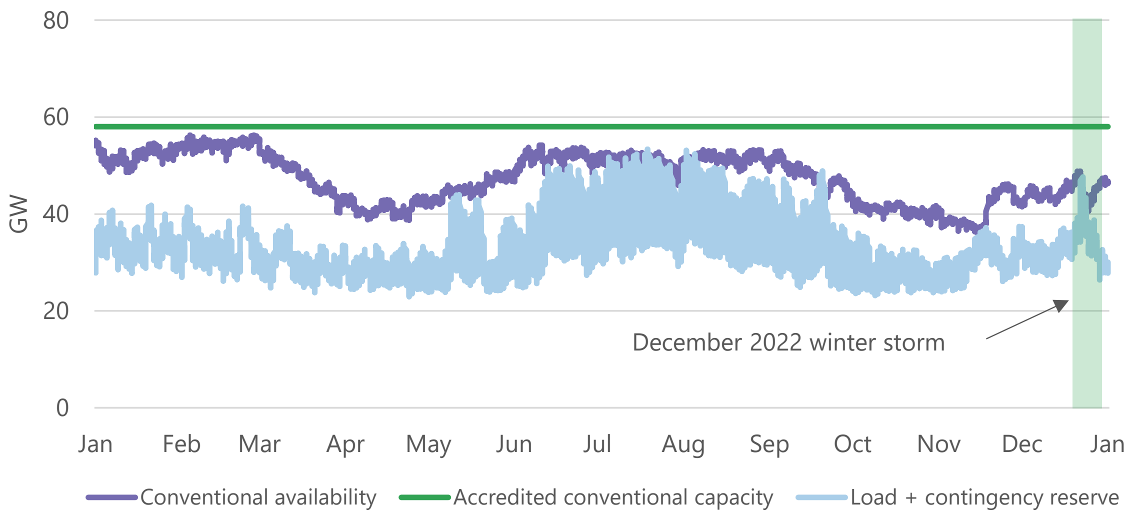
[55] All resources includes both accredited and non-accredited generation resources for all generation resource types. Behind the meter resources that are not registered in the market are assumed to be included in the load performance.

margin between available capacity and load dipped significantly during both the summer peak and a major winter event in December.

As the proportion of variable energy resources (VERs) in SPP's supply mix continues to grow, the system's need to count on the availability of conventional resources increases. In 2022, conventional resources accounted for 97 percent of the available generation on average, ranging from 60 percent to nearly 100 percent. Variable energy resources, primarily wind, accounted for 2 percent on average, ranging from less than one percent to nearly 40 percent.

Figure 2–54 compares internal conventional capacity to its actual availability and load plus contingency reserves by hour for 2022. The hours when total conventional capacity is nearly equal to load plus contingency reserves are often those where system reliability depended on variable energy resources. Because the output of these resources are variable and forecast based, frequent reliance on variable energy resources to prevent operating reserve or energy shortages without adequate improvements to transmission and investment in energy storage or complementary conventional generation represents a real risk to system reliability.

Figure 2–54 Conventional capacity available versus load



Aside from the winter storm in December, this chart shows that the reliability margin without variable energy resources was very tight frequently throughout the summer season, currently the only season with a resource adequacy requirement. Because the percentage of variable energy generation in the SPP region is increasing due to more wind and solar coming online and more conventional resources retiring, the number of periods SPP will rely on variable energy resources to prevent shortages will likely continue to increase, requiring a strategic approach to managing the grid. This could include targeted investments in transmission to improve variable energy resource deliverability and policies or incentives to increase investment in energy storage resources.

Metrics that reflect daily, monthly, or seasonal average neglect to reflect the extremes of the period. Reliability requires planning for and mitigating those extremes. Figure 2–55 shows average load as a percent of available capacity along with the maximum percent of capacity load reached by month. This shows that while average load hovered around 60 to 70 percent of available capacity for much of the year, during the tightest hours, it often exceeded 90 percent of available capacity and reached as high as 107 percent in September. Load exceeded 90 percent of available generation in 465 day-ahead hours, or roughly 5 percent of day-ahead intervals. These maximum values and hours where load is at least 90 percent of available generation demonstrate periods where excess capacity was limited and system reliability was at greater risk.

Figure 2–55 Average and maximum load as a percentage of available capacity

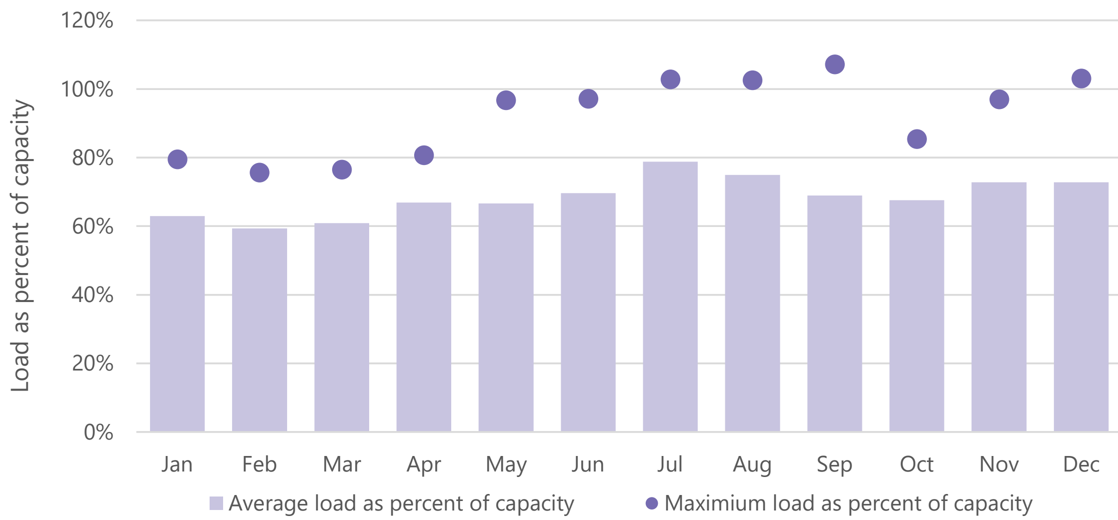
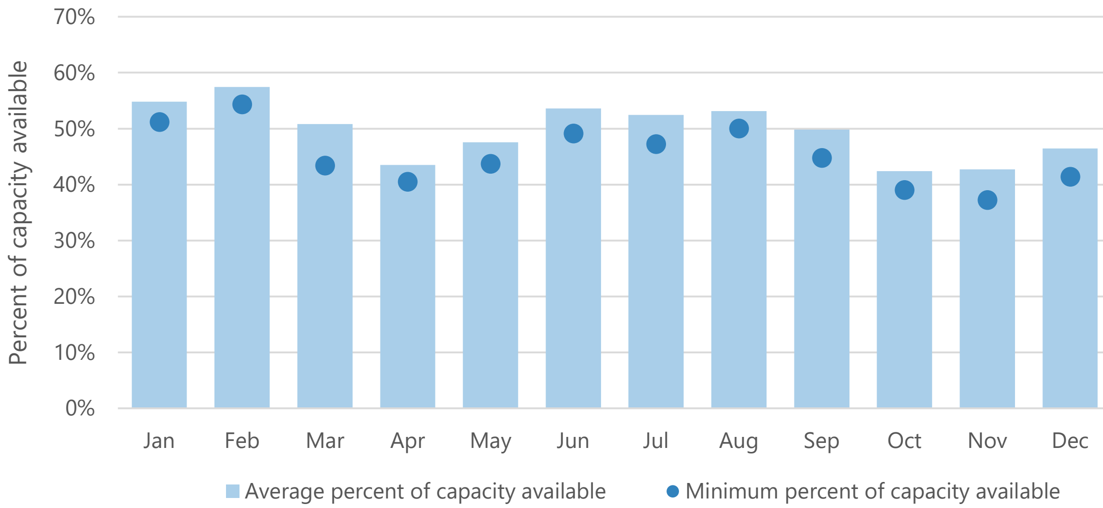


Figure 2–55 provides a similar comparison but for average and minimum percent capacity available out of total monthly accredited capacity. This demonstrates the lowest period of availability where system reliability was at greatest risk. The monthly average capacity available ranged from 42 percent to 57 percent, whereas the monthly minimum capacity available ranged from 37 percent to 54 percent.

Figure 2–56 Average and minimum available capacity as a percentage of total capacity



The analysis in this section demonstrates how managing capacity to a single summer peak or even a winter and summer peak as an accreditation process is not sufficient to ensure resource adequacy and reliability, or to incentivize resources to plan maintenance during periods of low forecasted demand. Although work has been done to try to address this known gap, it does not go far enough to address the reliability risks related to supply adequacy and resource availability. As such, the MMU has the same four critical recommendations related to supply adequacy, with slight modifications based on lessons learned over the past two years:

1) If SPP is to rely on any resource to provide energy, then that resource should be available. The resource adequacy process should take into account all outages to more accurately represent expected availability and include an analysis of outage correlation between resources in similar areas and using the same fuels. Deliverability should also be considered, similar to the effective load carrying capability methodology.

2) There should be meaningful incentives related to reliability. There should be market, out-of-market, and/or regulatory policy mechanisms to incentivize reliability attributes. These attributes include but are not limited to flexibility on outage timing and duration, dual-fuel capability, and winterization.

3) A more frequent resource adequacy requirement, such as a seasonal (or perhaps monthly) requirement, should be developed. The February 2021 winter weather event and December 2022 winter storm both demonstrated the importance of having an accurate expectation of resource availability during cold weather, not just summer peak. Our data also demonstrate low availability levels during the shoulder season when most

planned outages are taken. The MMU supports the Winter Season Resource Adequacy Requirement currently going through the stakeholder process and further, recommends exploring the feasibility of a spring and fall resource adequacy requirement as well.

4) SPP should plan for shocks to generator availability including adverse weather events, pipeline outages, wind turbine icing, and solar eclipses. Express attention should be paid to the pattern and correlation of outages between resource types and locations. SPP should implement mitigation measures to ensure the reliable operation of the grid under all circumstances. This may include strategic investments in transmission to enhance deliverability of capacity, development of energy storage resources, and price sensitive demand.

3 UNIT COMMITMENT AND DISPATCH PROCESSES

This chapter covers unit commitment and dispatch, scarcity pricing, and ramp. Key points from this chapter include:

- In 2022, capacity started by the day-ahead market decreased by six percentage points and capacity started by self-commitments increased by one percentage point.
- Total outages for capacity dropped seven percent from 2021. Overall, long-term outaged capacity decreased by about four percent from 2021 to 2022.
- The ramp capability product implemented in March 2022 and fast-start pricing implemented in May 2022 brought changes to scarcity pricing. Ramp-up scarcity averaged around a 185 intervals per month, with an average scarcity price of roughly $20/MWh. There was no ramp-down scarcity during any interval during 2022. Regulation up and regulation down both had decreases in the number of real-time scarcity intervals in comparison to 2021. Regulation up was down 26 percent and regulation down 60 percent. Operating reserve shortage intervals, conversely, increased eight percent from 2021. The impact of fast-start pricing on scarcity events appears to be minimal.
- About 19 percent of regulation-up scarcities and about 37 percent of regulation-down scarcities occurred in the first interval of the hour. This is compared to an average of seven percent for the other intervals of each hour. This trend has held since the inception of the SPP marketplace and continues to increase.
- SPP designed a ramp capability product, which was implemented on March 1, 2022.[56] There were issues identified with the deliverability of ramp in the market shortly after its implementation. SPP is working to address these issues.
- Fast-start resources were implemented on May 18, 2022 to meet compliance with FERC's order. There was little discernable impacts to fast-start revenues from the new process.
- Fast-start resources are still predominately cleared in the day-ahead market, although their key benefit is to provide quick offline to online generation for real-time uncertainty events.

[56] *Tariff Revisions to Add Ramp Capability*, FERC Docket No. ER20-1617.

- Thirty percent of the energy produced in 2022 came from self-committed resources. This is down from the 31 percent seen in 2021 and 36 percent seen in 2020.

3.1 COMMITMENT PROCESS

The Integrated Marketplace uses centralized unit commitment to determine an efficient scheduling and dispatch of generation resources to meet energy demand and operating reserve requirements. Most commitments begin in the day-ahead market. The day-ahead market attempts to commit sufficient capacity to meet the loads that were bid into the day-ahead market. Because of differences between day-ahead and real-time and locational issues, it is often necessary to commit additional capacity outside the day-ahead market. This is done through the reliability unit commitment (RUC) processes and manual commitments. SPP employs five reliability commitment processes:

- multi-day reliability assessment (MDRA);
- day-ahead reliability unit commitment (DA RUC) process;
- intra-day reliability unit commitment (ID RUC) process;
- short-term intra-day reliability unit commitment (ST RUC) process; and
- manual commitment instructions issued by the RTO.

Figure 3–1 shows a timeline describing when the various commitment processes are executed.

Figure 3–1 Commitment process timeline

Multi-day reliability assessments are made for at least three days prior to an operating day. This assessment determines if any long lead-time generators are needed for capacity or are needed to address an emergency for the operating day. Any generator committed from this process is treated as a “must commit” in the day-ahead market. The day-ahead closes at 0930 Central time and is executed on the day before the operating day, with the results posted no later than 1300. The day-ahead reliability unit commitment process is executed approximately 45 minutes after the posting of the day-ahead market results. This allows market participants time to re-offer their uncommitted resources, often with better information on forecasts and gas markets.

The intra-day reliability unit commitment process is run throughout the operating day, with at least one execution occurring every four hours. The short-term intra-day reliability unit commitment may be executed as needed to assess resource adequacy over the next two hour period as part of the intra-day process. SPP operators may also issue manual commitment instructions for capacity, transmission, or local reliability issues during the operating day to address reliability needs not fully reflected in the security constrained unit commitment algorithm used in the day-ahead and reliability unit commitment processes. Transmission operators occasionally also initiate local reliability commitments.

3.1.1 RESOURCE STARTS

The SPP resource fleet, excluding variable energy resources, started just over 4.3 million MW of capacity in 2022. That represents a 16 percent increase from 2021. The major contributors of the increase of started capacity came from resources started by the day-ahead market and simple-cycle combustion turbine resources started by intra-day reliability unit commitment. Figure 3–2 shows the percentage of capacity from starts by commitment process. For all generation participation offers in the day-ahead market by commitment status, see Figure 3–10.

Figure 3–2 Started capacity by commitment type[57]

	2020	2021	2022
Day-ahead market[58]	75%	69%	63%
Self-commitment[59]	14%	19%	20%
Intra-day RUC	4%	5%	8%
Short-term RUC	1%	2%	4%
Manual, regional reliability60	4%	4%	3%
Day-ahead RUC	<1%	1%	<1%
Manual, local reliability	1%	1%	<1%
Multi-day reliability assessment	<1%	<1%	<1%

As shown above, 63 percent of started capacity in 2022 was a result of the day-ahead market, which continues to be the primary commitment process. The day-ahead market is the preferred

[57] This table represents started capacity, meaning the capacity is counted each time the resource is started. To see day-ahead cleared capacity for each hour, see Figure 3-11.
[58] For this table, the day-ahead market category excludes resources started due to self-commitment in the day-ahead market.
[59] Self-commitment includes resources started in the day-ahead market due to a self-commitment.
[60] Manual commitments for regional reliability include commitments for additional capacity and manually staggering start-up or shutdown times.

method of start-up for resources with longer lead times. However, a limiting factor on the number of day-ahead commitments is that the optimization algorithm is restricted to a 48-hour window;[61] hence, large base-load resources with long lead-times and long run times may not appear economic to the day-ahead market commitment algorithm. Some market participants choose to self-commit these resources, which contributes to the amount of self-commitments.

Within the operating day, commitment flexibility is limited by resource start-up times. As the operating hour approaches, fewer resources are eligible to be started. The reliability unit commitment processes—day-ahead,[62] intra-day, short-term, and manual—represent about 16 percent of the started capacity. Many of these commitments are due to uncertainty of the forecasted resources or needing additional ramp-able capacity. The ramp product, implemented in March of this year, and the uncertainty product, to be implemented in 2023, are expected to help reduce these amounts.[63] Figure 3–3 shows that a large majority of start-up instructions issued to combined-cycle generators are the result of the day-ahead market. This result is expected given the lower variable costs and different operating parameters for these resources relative to other gas units.

[61] Commitments are evaluated over 48-hour window, which covers the operating day and the next day. Although two days are evaluated, start-up and shutdown instructions are issued for the operating day only. The day after the operating day is evaluated to decrease inefficiencies across day-boundaries (e.g., shutting down a resource at the end of one day only to start it an hour later on the next day).
[62] This is day-ahead reliability unit commitment process, not the day-ahead market.
[63] The ramp product is discussed in further detail in Section 3.2.3.2, and the uncertainty product is discussed in Section 3.2.3.2.3.

Figure 3–3 Origin of start-up instructions for gas resources

Commitment process	Combined-cycle			Simple-cycle, combustion turbine			Simple-cycle, steam turbine		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Day-ahead market	88%	88%	89%	77%	74%	72%	56%	58%	59%
Day-ahead RUC	0%	<1%	<1%	0%	<1%	<1%	3%	5%	4%
Intra-day RUC	2%	2%	3%	5%	7%	13%	16%	10%	12%
Short term RUC	0%	<1%	<1%	3%	5%	7%	2%	1%	<1%
Manual, local reliability	0%	1%	<1%	2%	2%	1%	1%	<1%	<1%
Manual, regional	1%	1%	<1%	9%	7%	5%	7%	2%	1%
Self-commitment	9%	7%	7%	5%	5%	3%	14%	25%	22%
Multi-day reliability	0%	0%	0%	<1%	<1%	<1%	<1%	<1%	<1%

For gas-fired generators with simple-cycle combustion turbine technology, the day-ahead market accounted for 72 percent of their total starts. This is consistent with 2021. Steam turbine starts increased in the day-ahead market with 59 percent in 2022, compared to 58 percent the year before and 56 percent in 2020.

The intra-day RUC had a larger percentage of starts than 2021. Gas-fired generators with simple-cycle combustion turbine technology increased to 13 percent of starts in 2022 from seven percent in 2021. Simple-cycle steam turbine increased from 10 percent from 2021 to 12 percent of total starts for 2022. Combined cycle resources' intra-day RUC starts also increased from two percent in 2021 to three percent in 2022.

Some reliability unit commitments are made to meet instantaneous load capacity requirements. However, this is not a product that generators are directly compensated for by the market. These commitments are often not supported by real-time prices and can lead to make-whole payments. The next section discusses the drivers behind reliability commitments.

3.1.2 DEMAND FOR RELIABILITY

Figure 3–2 noted that about 14 percent of SPP start-up instructions by capacity originated from SPP reliability unit commitment processes. To understand the need for the reliability commitments, it is useful to discuss the different assumptions, requirements, and rules that are used in the reliability unit commitment processes after the day-ahead market.

One difference between day-ahead and real-time is wind generation. Eighty-eight percent of the real-time wind production cleared in the day-ahead market in 2022. Market participants determine the participation levels for their wind resources in the day-ahead market through supply offers. In contrast, SPP's wind forecast is used by the reliability unit commitment processes.

Another important difference between the two studies is virtual transactions. Market participants submit virtual bids to buy and virtual offers to sell energy in the day-ahead market. A virtual transaction is not tied to an obligation to generate or consume energy; rather, it is a financial instrument that is cleared by taking the opposite position in the real-time market. Because the reliability unit commitment processes must ensure sufficient generation is on-line to meet energy demand, virtual transactions are not included in the reliability unit commitment processes used in day-ahead, intra-day, or short-term.

Other differences also affect net energy demand. Net energy demand is demand net of both variable energy generation, the combination of imports, exports, and parallel flows from other markets. Import and export transaction data are updated to include the latest information available for the reliability unit commitment processes. A fundamental difference between the two studies is the definition of demand. In the day-ahead market, demand is determined by bids submitted by the market participants whereas, in the real-time market, demand is physical. Demand bids in the day-ahead market average around 98 percent of the real-time values, as shown in Figure 2–5. Other smaller differences between the two markets include losses and operating reserves.

These types of differences are referred to as resource gaps (i.e., a gap in meeting demand) between the day-ahead and real-time markets. The resource gap is the excess price-following, physical generation cleared in the day-ahead market that was not needed in real-time. A negative resource gap would indicate that the total generation cleared in the day-ahead market is insufficient to serve real-time demand. The resource gap is typically positive, indicating more dispatchable generation is cleared in the day-ahead market than was necessary to serve real-time load.

The primary drivers for the resource gaps are:

1) differences in virtual supply net of virtual demand,

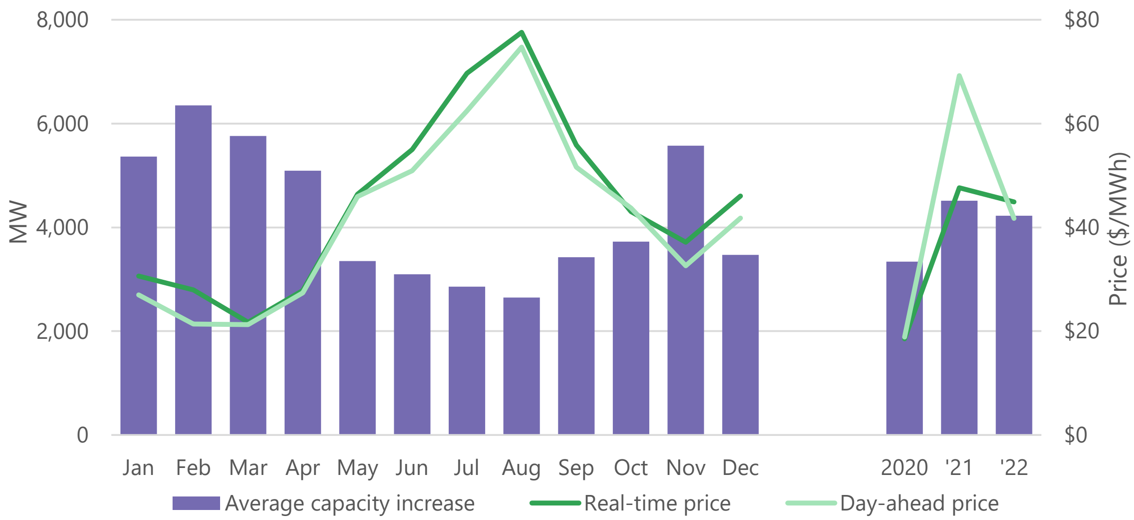
2) differences in real-time wind generation compared to wind cleared in the day-ahead market, and

3) real-time net exports exceeding day-ahead net exports.

It is generally true that the day-ahead market clears less wind generation than is produced in real-time. The mismatch is partly because some market participants with wind generation assets, recognizing the uncertainty of the wind forecast in day-ahead, offered such that the full amount of forecasted capacity did not clear in the day-ahead market. This may cause other generation to clear in the day-ahead market that will not be needed in real-time when the wind replaces it.

The resource gaps can help explain why some generators produce much less in real-time or why additional commitments occur after the day-ahead market has cleared. Figure 3–4 compares on-line capacity between the day-ahead and real-time markets alongside marginal energy price.

Figure 3–4 Average hourly capacity increase from day-ahead to real-time



The chart indicates that in 2022 there was, on average, around 4,200 MWh of additional dispatchable generation cleared incremental to the day-ahead market, a decrease of 6 percent compared to 2021. The spike in day-ahead 2021 prices can be attributed to the February 2021 winter weather event. The high prices in the summer 2022 are related to high peak loads and low capacity margins, which are typically seen each year. As previously mentioned, two of the main drivers of the excess capacity in day-ahead are shown in Figure 3–5.

Figure 3–5 Average hourly capacity increase from day-ahead to real-time with wind and virtual components

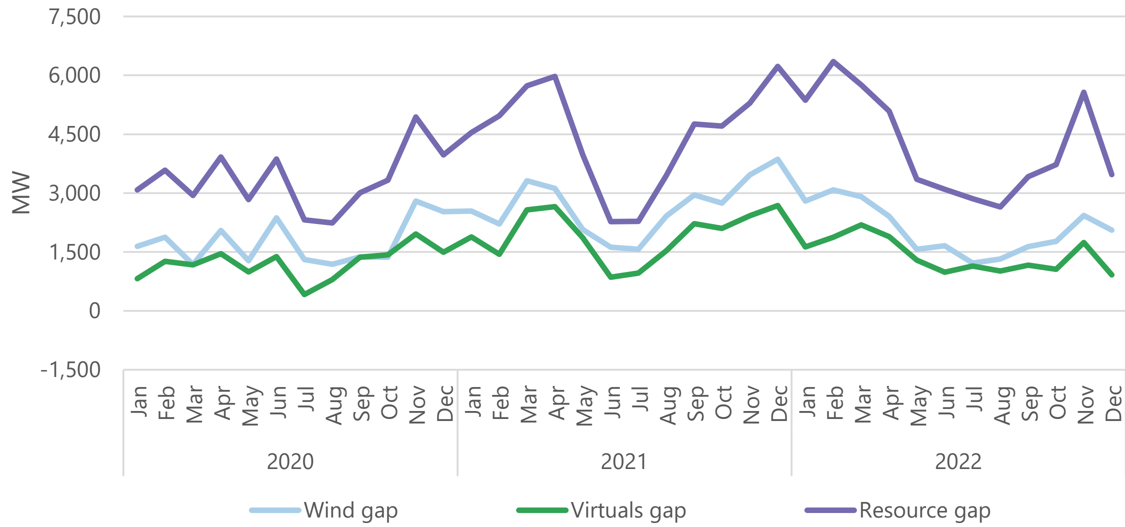


Figure 3–5 shows that the gaps due to wind and virtuals are still the main drivers for the resource gap. These two elements make up 82 percent of the total resource gap in 2022. However, these wind and virtuals gaps decreased 14 percent from 2021. These decreases helped contribute to the 7 percent drop in the total resource gap from 2021 to 2022.

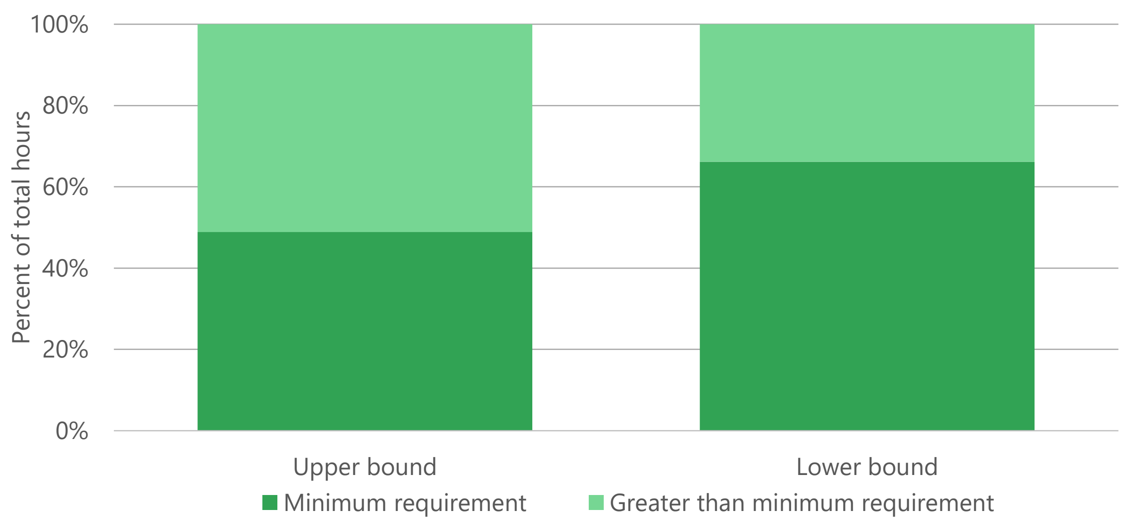
As shown by the graphed gaps in Figure 3–5, the shapes of the wind gap and virtuals gap very nearly match the shape of the overall resource gap. This further indicates that the wind and virtuals gap are driving the variations of the overall resource gap. As discussed in section 2.8, virtuals occur mostly at wind generator locations. The effect of this is seen in Figure 3–5 as the shape of the virtual gap largely follows the shape of the wind gap. This indicates that, on average, the virtuals are reacting to the changes in wind generation. Therefore, the resource gap is ultimately caused by the wind gap.

The wind gap can be caused by insufficient clearing of wind generation in the day-ahead market. To balance this insufficiency, the day-ahead market may then clear other generation that represents physically dispatchable generation in real-time. Then, in real-time, the actual wind generation replaces the additional dispatchable generation that was cleared in day-ahead. The result can be that the day-ahead market clears excessive generation. In real-time, this excess generation will likely run at minimum output. The excess generation's minimum output can cause other generators to run lower on their offer curve, which can lower the real-time energy price, making real-time prices diverge from day-ahead prices.

On average, the market-wide resource gap is positive, and no additional capacity is needed in real-time. However, in some cases, the day-ahead market can clear insufficient generation. This can be a case that is not represented by the average, a locational insufficiency due to congestion, or a parameter that is not directly or sufficiently cleared in the day-ahead market such as ramp. When the day-ahead market clears insufficient generation, additional capacity may be committed for reliability after day-ahead.

One of the reasons for reliability commitments is the need for ramp capability. The instantaneous load capacity constraint may commit additional resources to ensure there is adequate ramping capacity to meet the instantaneous peak demand for any given hour. The instantaneous load capacity constraint is defined as the greater of the forecasted instantaneous peak load, or an SPP defined default value. Figure 3–6 shows the percentage of hours for which the default value is used for the upper bound and lower bound of instantaneous load capacity.

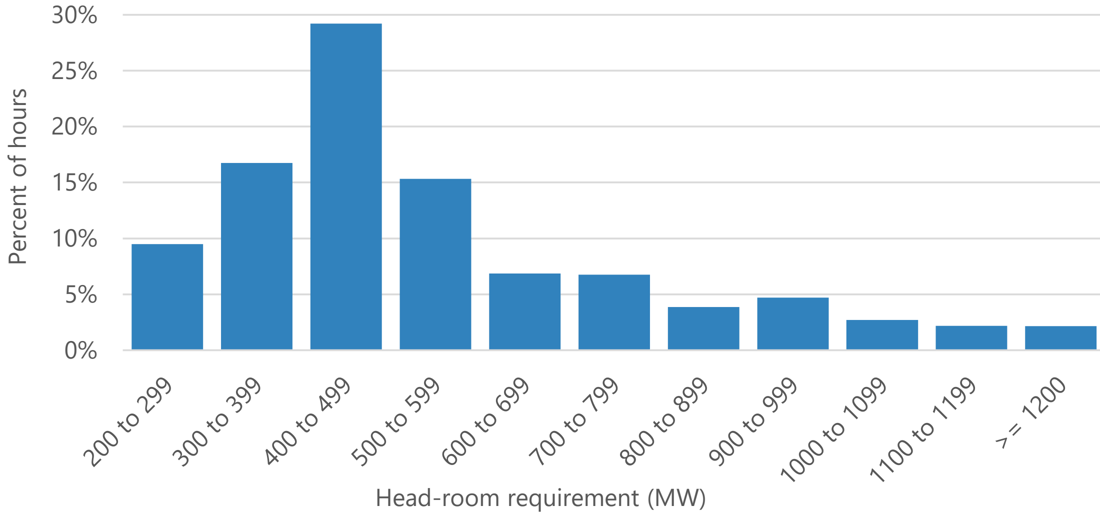
Figure 3–6 Frequency of minimum requirement for instantaneous load capacity



A value is calculated for upper bound (upward ramp) and a lower bound (downward ramp) based on forecasted load. However, the default, or minimum requirement, is not based on market information. Because the default value is used in over half of all intervals, the instantaneous load capacity constraint can contribute to reliability commitments that are not based on current market information. The default requirements are hourly values as low as 200 MW. SPP evaluates the default values quarterly.

The percent of hours at various upper bound requirements is shown in Figure 3–7.

Figure 3–7 Instantaneous load capacity upper bound requirements



The most frequent observations were from 400 MW to 499 MW at around 29 percent of the observations. There were about the same number of observations in lower requirements as last year and the year before. While a market-based product is more appropriate for a market efficiency improvement, keeping this requirement low may help reduce unnecessary make-whole payments.

Resources committed to provide ramp capability can affect real-time prices, whether as a result of applying the instantaneous load capacity constraint in a reliability unit commitment process or a manual process. Without the appropriate scarcity pricing rules that reflect the market value of capacity shortages due to ramp capability, the cost of bringing the resource on-line may not be fully reflected in the real-time prices. The resource keeping the market from being scarce may not be paid to provide the needed capability. Additionally, manual commitments made during conservative operations, while possibly needed for capacity, similarly suppress the price signals when they are needed most.

Reliability commitments, along with wind exceeding the day-ahead forecast, can dampen real-time price signals, as is evidenced by 51 percent of real-time make-whole payments made for reliability unit commitments, as shown in Figure 4–29.[64]

3.1.3 FAST-START RESOURCES COMMITMENT

As of May 18, 2022 a fast-start resource is defined as any dispatchable resource that can start, synchronize, begin injecting energy within 10 minutes of SPP notification, and have a minimum-

[64] This is the sum of the intra-day RUC, short-term RUC, and day-ahead RUC in Figure 4-29.

run time of one hour or less. Market Storage Resources meeting these criteria while having a discharge time of 60 minutes or less also meet the fast-start criteria. Prior to this date, dispatchable resources with a start-time of less than 10 minutes and choosing to classify as quick-starts were considered quick-start resources, regardless of run time requirements.

In 2016, FERC issued a Notice of Proposed Rulemaking (NOPR) on fast-start pricing processes as a part of a broad initiative aimed at improving price formation in regulated wholesale power markets in the United States.[65] This was followed by an order published in December 2017 which specifically targeted SPP's fast-start pricing, finding it unjust and unreasonable.[66] FERC's stance remained largely unchanged in response to numerous briefs and replies from a broad array of stakeholders, including those provided by the SPP Market Monitoring Unit.[67] As a result, SPP filed proposed changes to its pricing practices, which were accepted by FERC in June 2019[68] and went live in May 2022.

Below are the SPP changes made to comply with the order:

- The addition of a separate "pricing run" in market execution;
- The ability to relax minimum capacity levels for pricing purposes in the new pricing run, potentially as low as zero megawatts;
- The inclusion of amortized start-up and no-load costs as function of resource capacity and run time when calculated permissible energy offers;
- The elimination of SPP's prior "screening run" used to manually eliminate uneconomic fast-start commitments; and
- Changes to eligibility for dispatch and cost reimbursement under fast-start procurement, including a one-hour ceiling on minimum run times and automatic consideration of resource eligibility based on physical parameters.

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[65] Notice of Proposed Rulemaking. 15 December 2016. Federal Energy Regulatory Commission. Docket RM17-3-000.
[66] Order Instituting Section 206 Proceeding and Commencing Paper Hearing Procedures and Establishing Refund Effective Date. 21 December 2017. Federal Energy Regulatory Commission. Docket EL18-35-000.
[67] Comments and Recommendations of the Southwest Power Pool Market Monitoring Unit. 12 February 2018. SPP MMU. Docket EL18-35-000.
[68] Order on Paper Hearing. 12 June 2019. Federal Energy Regulatory Commission. Docket EL18-35-000.

The changes to permissible costs in energy offers for fast-start resources resulted in the formulation of two new adders that reflect amortized start-up and no-load costs, respectively. These adders are described by the formula below:

Figure 3–8 Fast-start resource composite offer adders

Start-up adder

$$StartupAdder = \frac{StartupCost}{EcoMax * \frac{MinRunDuration}{1\ Hour}}$$

No-load adder

$$NoLoadAdder = \frac{NoLoadCost}{EcoMax * \frac{MinRunDuration}{1\ Hour}}$$

Functionally, the two adders translate dollar-denominated startup and no-load costs into dollar *per megawatt-hour* costs that the market-clearing engine can integrate into and interpret as incremental production costs. Combined with the existing incremental energy offer, the three components sum to a “composite offer” specifically employed for fast-start qualified resources.

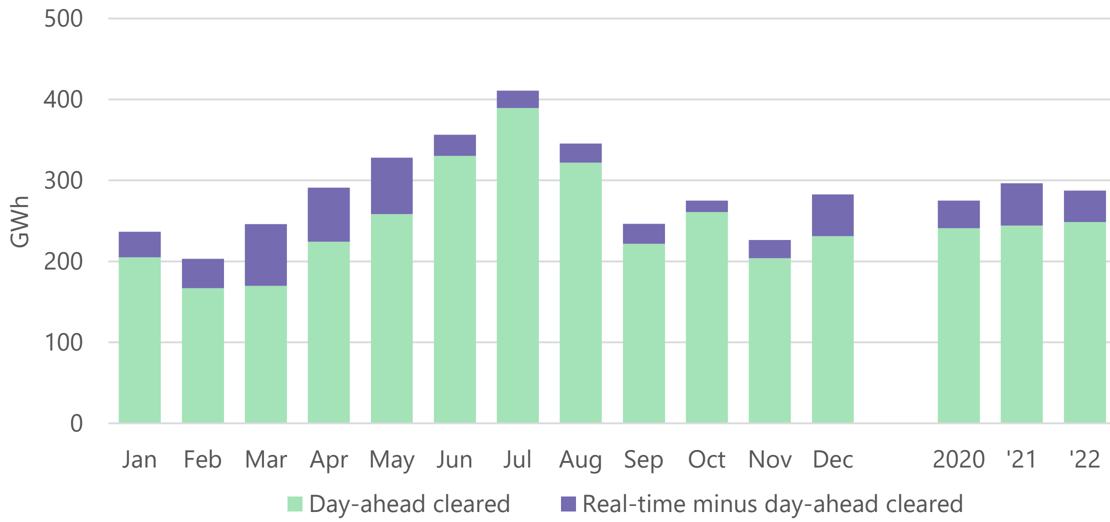
There were 86 resources offered in with parameters meeting the fast-start criteria after implementation in 2022. Figure 3-9 below illustrates the total nameplate capacity by fuel type for resources meeting the fast start criteria.

Figure 3–9 Nameplate capacity of fast-start resources

Fuel type	Nameplate capacity (MW)
Natural gas	2,126
Hydro	596
Fuel oil	282
Market storage resource	11

Historically, SPP has seen a large percentage of the fast-start resources clearing in the day-ahead market. Figure-3-10 shows the megawatts cleared by fast start resources in the day-ahead market compared to megawatts dispatched incremental to day-ahead in real-time.

Figure 3–10 Day-ahead cleared megawatts vs incremental real-time



The chart shows that resources meeting the fast-start criteria post-implementation appear to have cleared a higher percentage in the day-ahead market than in real-time after the new fast-start logic implementation. This is a concerning trend, as one of the key attributes of fast-start resources is to sit off-line near real-time and respond to ramp and uncertainty needs. Nearly 80 percent of the fast-start megawatts cleared in the day-ahead market were natural gas resources with the remaining 20 percent being hydroelectric plants.

One of the key objectives of the fast-start logic was to reduce uplift in the market, particularly for fast-start resources. The expectation was that higher energy prices set by the fast-start resources' composite offers would reduce the need for uplift. Figure 3-11 and 3-12 show the 2022 day-ahead and real-time make-whole payments, by month, for the 86 resources qualifying as fast-starts post implementation.

Figure 3–11 Day-ahead make-whole payments to fast-start resources

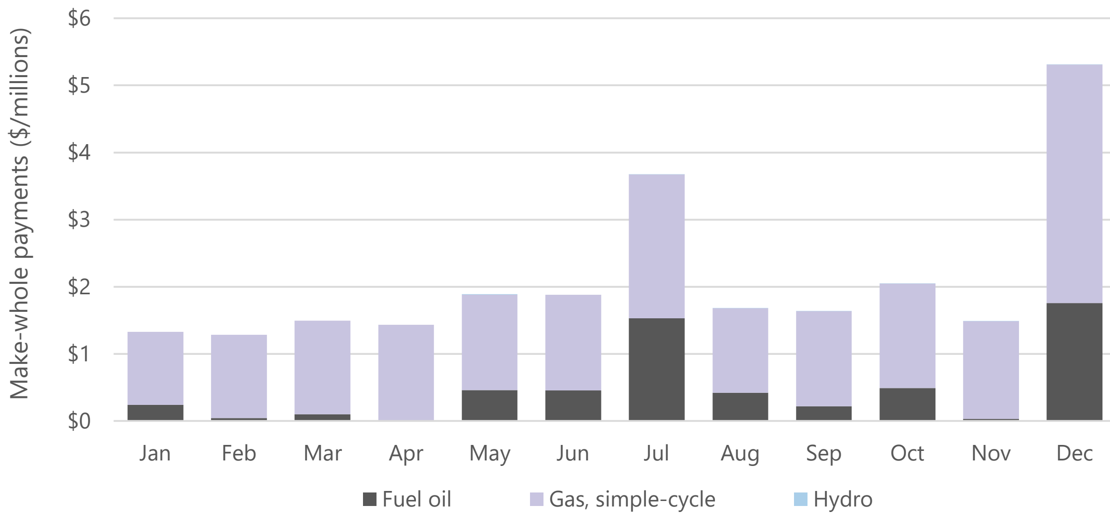
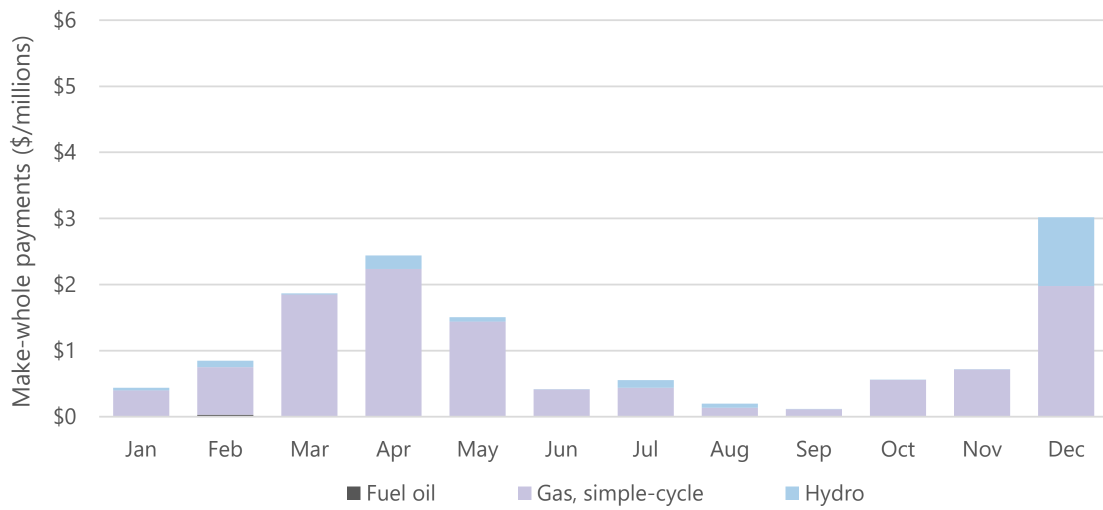


Figure 3–12 Real-time make-whole payments to fast-start resources



Total make-whole payments to fast-start resources were roughly $38 million dollars, with $12.6 million of that coming from the day-ahead market. Figure 3–11 shows a reduction in day-ahead make-whole payments to fast-start resources starting around the time of the fast-start resource logic implementation in May. However, when we compare the day-ahead make-whole payments for these resources from June through December 2021 to the same period in 2022 we see there was a 300 percent increase in make-whole payments. Much of the increase in make-whole payments to natural gas resources is directly attributable to increased fuel costs. Contrarily, real-time make-whole payments to fast-start resources appear to be relatively the same as prior to fast-start periods. The upticks in December for both markets stem from the winter weather event during the end of the month.

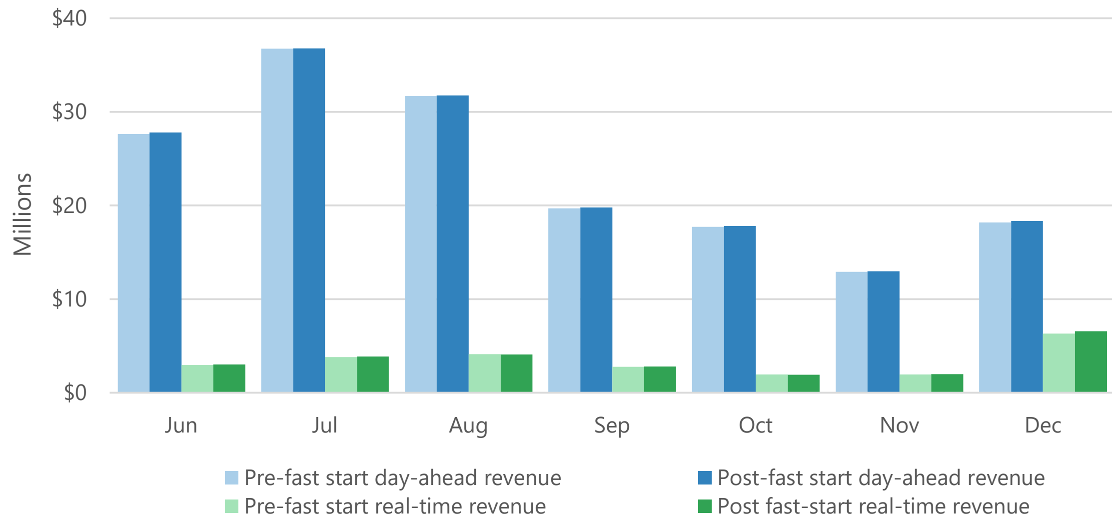
Day-ahead make-whole payments per megawatt eligible for day-ahead cost reimbursement was $2.11/MWh for natural gas, and $0.25/MWh for hydro. These metrics for real-time where $551/MWh for fuel oil, $75/MWh for natural gas, and $1.70/MWh for hydro.

There are many elements that can affect make-whole payments to include the frequency of the resources' deployments, the associated market prices, and the resources' fuel costs. The newly implemented fast-start logic did not have a direct effect on the total operating cost of fast-start resources, but it does have an effect on the revenues those resources can receive.

As described above, offline fast-start resources are cleared and dispatched based of their energy offers and submitted resource parameters. However, they can set higher prices in the pricing run based off their composite offers, described above. Make-whole payments are composed of resource's costs compared to revenues during a commitment period. Because the fast-start logic did not affect the costs that resources are made-whole to, changes in revenues will be the only driver for the changes in make-whole payments.

Prior to the fast-start logic, resources' energy day-ahead revenues were calculated by multiplying the day-ahead locational marginal price in the day-ahead dispatch-run by the megawatts generated in the day-ahead dispatch run. After the fast-start logic, resources are compensated by multiplying the day-ahead dispatch megawatt from the day-ahead dispatch-run times to the pricing-run's applicable day-ahead location-marginal price. These methods apply to both day-ahead and real-time markets, except in real-time day-ahead megawatts-cleared are subtracted from the real-time and multiply the product by the real-time locational marginal prices. Figure 3-13 below shows the difference in the revenues to fast-start resources with the new fast-start pricing method verses the pre-fast-start method.

Figure 3–13 Fast-start revenues under old pricing versus new fast-start pricing



The above chart shows that there was very little change in the revenues to fast-start units due to the new fast-start pricing. The fast start pricing appeared to have created 1.5 percent increase in day-ahead revenues to fast start resources and a half a percent increase in real-time revenues. All else equal, the increase in revenue would cause a negligible reduction in make-whole payments.

3.1.4 GENERATION SCHEDULING

The day-ahead market provides market participants with the ability to submit offers to sell energy, regulation-up service, regulation-down service, spinning reserve, and supplemental reserve, and/or to submit bids to purchase energy. The day-ahead market co-optimizes the clearing of energy and operating reserve products out of the offered capacity. All day-ahead market products are traded and settled on an hourly basis.

In 2022, participation in the day-ahead market continued to be robust for both generation and load. Load-serving entities that also own generation assets consistently offered generation into the day-ahead market at levels in excess of the requirements of the limited day-ahead must-offer obligation. Participation by merchant generation—for which no such obligation exists—was comparable to that of the load-serving entities. However, as shown in Figure 3–14, merchant generators self-commit at a much lower rate than load-serving entities. This is likely because merchant generators have incentive structures in place based primarily on market outcomes.

Figure 3–14 shows day-ahead market offers by commitment status and participant type.

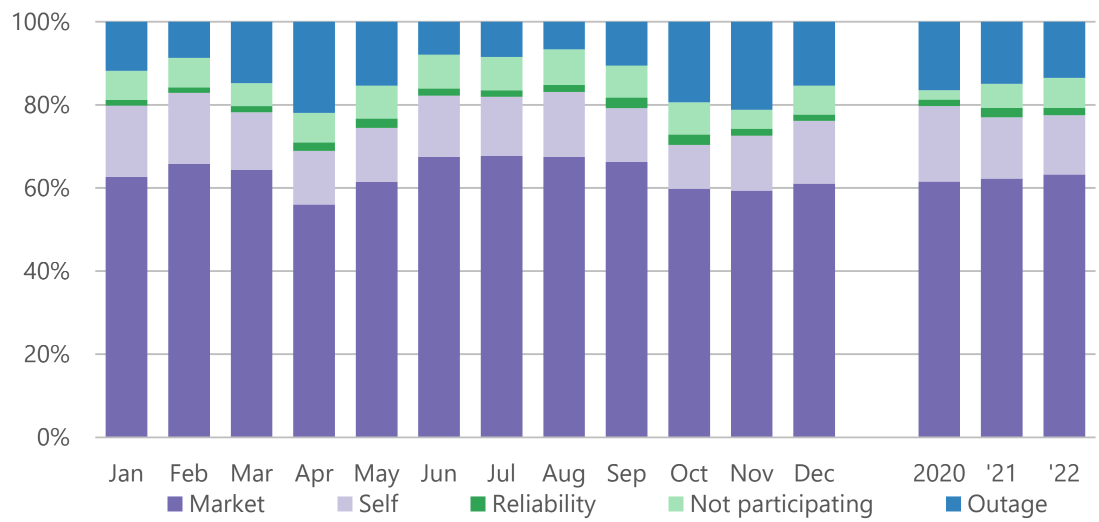
Figure 3–14 Day-ahead market offers by commitment status and participant type

Resource type	Owner type	Market	Self	Reliability	Not participating	Outage
Fossil fuel resources	Load-serving entity	67%	16%	3%	0%	14%
	Merchant	80%	8%	0%	0%	12%
Variable energy resources	Load-serving entity	61%	36%	0%	0%	3%
	Merchant	46%	3%	0%	31%	20%

Overall, the offers in "market" status have increased while offers in a self-commitment status decreased. However, the merchant variable energy resource owners decreased their offered capacity in "market" status while increasing their "not participating" and "outage" status. Merchant variable energy resource owners also reduced self-commitment.

Figure 3–15 shows generation capacity in the day-ahead market by commitment status.

Figure 3–15 Day-ahead market capacity by commitment status

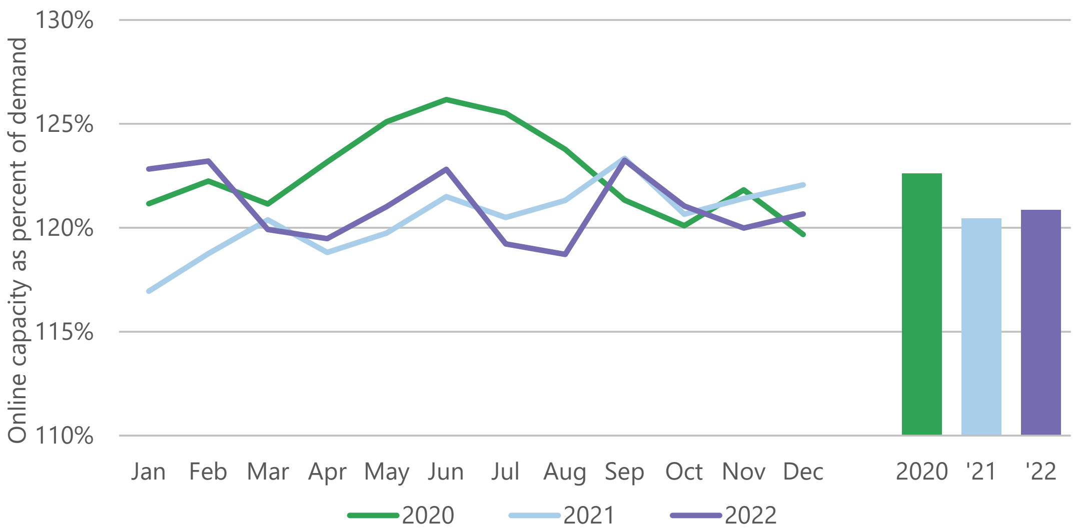


The average percent of total offered capacity by commitment status shows a decrease in the "self-commit" status and a slight decrease in the "outage" status. The "market" commitment status averaged 63 percent while resources with the commitment status of "reliability" averaged around two percent and the commitment status "not participating" increased to about seven percent. The "outage" commit status averaged 14 percent. The "self-commit" status averaged around 14 percent of total offered capacity which was about the same as 2021. Self-commitments have declined for the last three years as shown above.

Compared with Figure 3–3 in Section 3.1.1, which shows origins of only initial started capacity, these values represent commitment status of all generation capacity offered including those on-line. Self-commit started capacity increased for the second straight year from 19 percent in 2021 to 20 percent in 2022, however, the self-commit percent of all capacity offered decreased from 15 percent to 14 percent.

Figure 3–16 shows on-line capacity commitment as a percent of load.

Figure 3–16 On-line capacity as a percent of load



Capacity commitment as a percent of load increased slightly from 2021. Beginning in 2016, capacity as a percent of load decreased yearly through 2018. However, from 2018 through 2020, there were small increases from 120 percent in 2018, to121 percent in 2019 and 123 percent in 2020. The 2021 results marked a decline in online capacity as a percent of load to 2018 levels. Having too much capacity on-line with non-zero minimums causes other resources to operate lower on their offer curves, which can contribute to under-recovery of costs and, therefore, increased make-whole payments.

Additional capacity may be beneficial for necessary rampable capacity. Prior to the ramp product, which was implemented in March 2022, there was no rampable capacity requirement other than instantaneously load capacity, which has a reserved use. The ramp product is covered in section 3.2.3, below. SPP plans to implement an uncertainty product, covered in section 3.2.4, in late 2023. The uncertainty product along with the ramp product are anticipated to help supply rampable capacity to the market. Prior to these products, the market clearing software had no method for optimizing or pricing the clearing of rampable capacity for a given interval. There are issues, outlined in sections 3.2.3 and 3.2.4, for both products that will need to be addressed for the effective delivery of procured ramp.

3.1.5 MUST-OFFER PROVISION

The Integrated Marketplace has a limited day-ahead must-offer provision that was intended to incentivize load-serving entities with generation assets to participate in the day-ahead market. Market participants that are non-compliant are assessed a penalty based on the amount of capacity available in the day-ahead market relative to the market participant's peak hourly real-time load. The requirement is limited in the sense that not all resources or capacity must be offered. Only market participants with generation assets that serve load are subject to the must-offer requirement, and they are required to offer only enough generation to cover most of their load plus reserve obligations, per asset owner, which may not be all of their resources or available capacity. An alternative way to satisfy the provision is to offer all generation that is not on outage. In 2022, no day-ahead must-offer penalties were assessed. In 2021, one day-ahead must-offer penalty of $7,413 was assessed. Six penalties were assessed in 2020 totaling $42,679. While this provision does highly encourage available generation to be offered, it does not impose a penalty for excessive outages, which has been cited as a reason for conservative operations in the past. The day-ahead must-offer provision also does not tie into Attachment AA, which defines the resource adequacy requirement in the SPP tariff.

The MMU continues to recommend updating the day-ahead must offer requirement and addressing FERC's concerns. In light of the increased volume of outages that contributed to conservative operations in 2019, the MMU has assigned a higher priority to addressing the issue. See further discussion in Section 7.4.

3.2 DISPATCH

The real-time market co-optimizes the clearing of energy and operating reserve products out of the available offered capacity based on the offer price for each product while respecting physical parameters. The real-time market clears every five minutes for all products. The settlement of the real-time market also occurs at the five-minute level and is based on market participants' deviations from their day-ahead positions.

3.2.1 SCARCITY PRICING

A scarcity price is a price that reflects the value of a product when there is not enough of the product to meet the demand. SPP's market uses marginal cost pricing, which prices a product by the cost to produce the next increment. When a product is scarce, there may not be additional supply, so price cannot be determined by the next increment. In this case, a scarcity price is used to set marginal price. The Integrated Marketplace uses demand curves to set graduated scarcity prices so that small scarcities are priced lower than large scarcities. Scarcity prices inform market participants that the product was short and incentivize future provision of that product.

When an insufficient amount of ramp capability-up service, ramp capability-down service, regulation-up service, regulation-down service, or contingency reserve is cleared, a scarcity price is set by a demand curve. The scarcity of these products can be caused by a lack of capacity or a lack of ramp. Scarcities are due to capacity when there are insufficient resources at maximum output available to meet demand. Scarcities are due to ramp when sufficient capacity is available, but ramp rate limitations do not allow access to the full capacity. When multiple products compete for the same, limited capability of resources, the scarcity of one product can also raise the price of other products. As of May 2022, scarcity prices are set by the pricing run according to the dispatch in the pricing run.[69] Scarcity or a lack of scarcity, in the dispatch run has no bearing on scarcity prices in the marketplace.

Regulation, ramp capability, and contingency reserve scarcities are priced by demand curves. The regulation demand curves, for both up and down, consist of six steps with a maximum price of $600/MW. The demand curve for ramp capability, for both up and down, also consist of six steps, but the maximum scarcity price is based on the average cost to run a dispatchable fast-start resource at its maximum output for its minimum run time. SPP updates this maximum demand curve price monthly based on three months of historical offers. The highest maximum demand curve price was $53/MW in February. The contingency reserve demand curve consists of three steps with a maximum price of $1,100/MW.

The clearing engine does not record the reason for the scarcity, (i.e., capacity or ramp.) The MMU suggests that SPP capture the appropriate information so that the reason for the scarcity will be transparent.

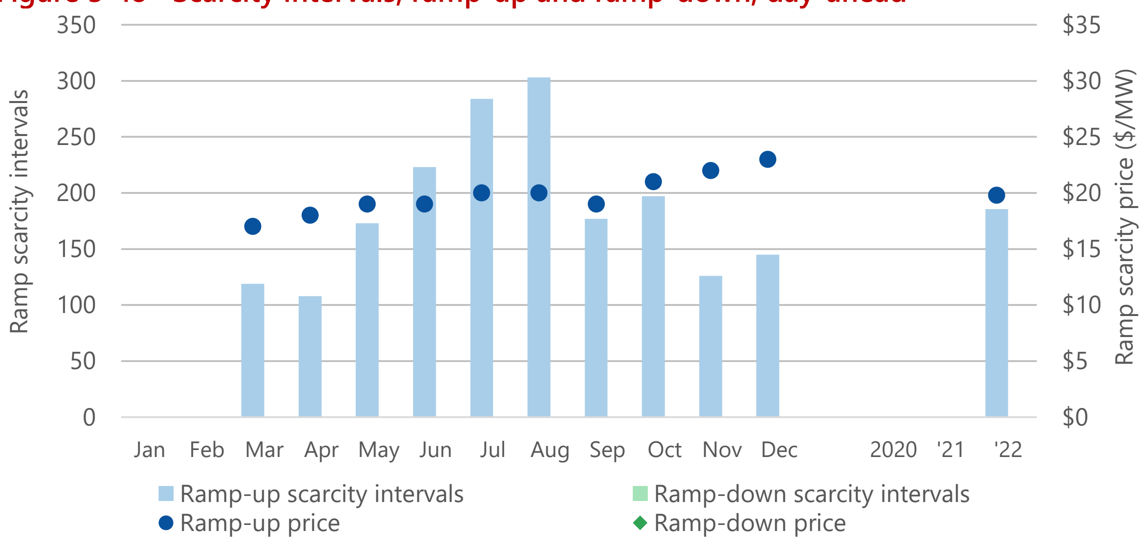
Figure 3–17 and Figure 3-18 displays the number of scarcity intervals in the day-ahead market and average prices by month, along with an annual average of values.

[69] Pricing runs and dispatch runs are products of the newly implemented fast-start logic, discussed in section 3.1.3

Figure 3–17 Scarcity intervals and prices, regulation and operating reserves, day-ahead

Six hours of regulation-up scarcity occurred during 2022, with two intervals in May, three in June, and one in July. Outside of the winter weather event in February, 2021 had only one hour of regulation-up scarcity (in October), and 2020 had three hours of regulation-up scarcity.

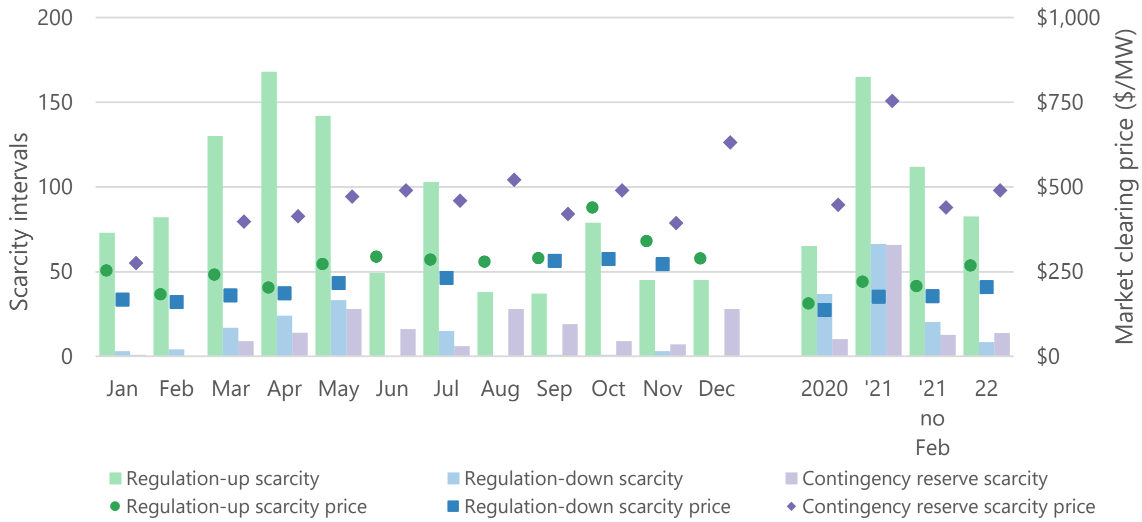
Figure 3–18 Scarcity intervals, ramp-up and ramp-down, day-ahead



Ramp capability-up scarcity occurs much more frequently in the day-ahead market compared to regulation and contingency reserve scarcity. During these shortages, the median ramp-up cleared was about 90 percent of the requirement while the fifth percentile was about 63 percent. Ramp capability-up was rarely short at significant levels in the day-ahead market. The median shadow price during a shortage was around $20/MW. Ramp capability-up scarcities peaked in August, with scarcity price levels peaking in December.

Figure 3–19 and 3-20 displays the number of scarcity intervals in the real-time market and average prices for each product by month, along with an annual average of monthly values.

Figure 3–19 Scarcity intervals and prices, regulation and operating reserves, real-time



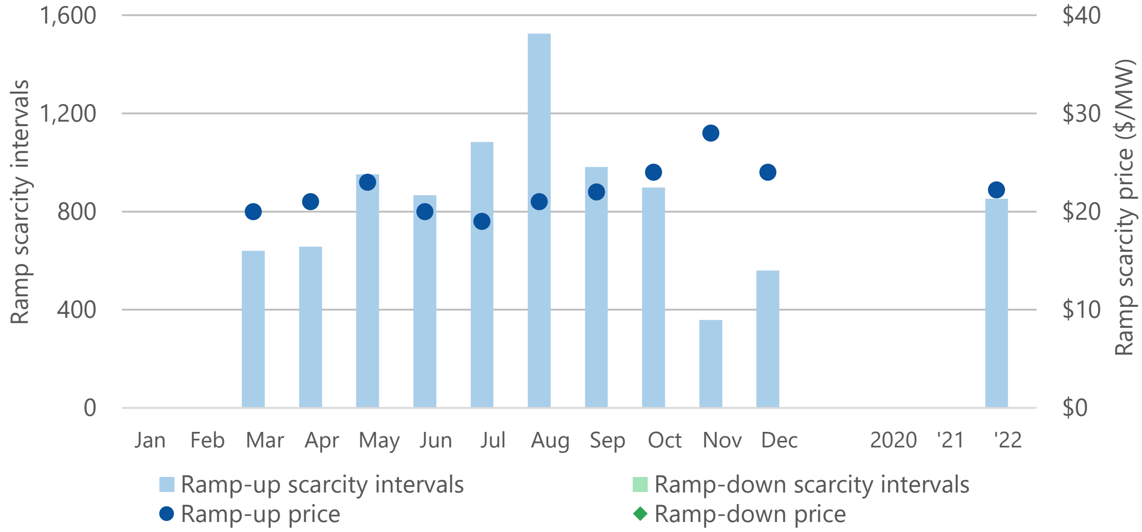
Regulation-up scarcity occurred in just under 1,000 intervals. During these shortages, a median of about 91 percent of the requirement was cleared with a fifth percentile of about 18 percent of the requirement. There were about 165 operating reserve scarcity intervals. The median operating reserve cleared during these shortages was about 92 percent of the requirement while the fifth percentile was about 70 percent. Regulation-down was scarce in about 100 intervals. The median regulation-down cleared during shortage was about 94 percent of the requirement with a fifth percentile of about 75 percent. There were no ramp capability-down shortages. Regulation-down and operating reserve were rarely scarce and cleared nearly all their requirement during shortages. Both regulation-up and ramp capability-up cleared nearly their entire requirement almost all of the time but had occasional significant shortages.

Excluding February 2021, regulation-up scarcities decreased by about 26 percent from 2021 while regulation-down scarcity decreased by about 59 percent. Contingency reserve decreased by about 22 percent from 2021.

Regulation-up scarcity peaked in April, followed by May and March. Regulation-down scarcity peaked in May, although there were few. Operating reserve was evenly distributed throughout the year.

The average scarcity prices were about $280/MW for the regulation-up, $220/MW for regulation-down, and $450/MW contingency reserve. The highest monthly average regulation-up and, regulation-down scarcity prices occurred in October and did not correspond to the peak scarcity intervals. The highest monthly average scarcity price for operating reserve occurred in December, mostly during the winter weather event. The average scarcity prices for each scarcity type have been increasing in recent years.

Figure 3–20 Scarcity intervals and prices, ramp-up and ramp-down, real-time



The most frequent scarcity in real-time was ramp capability-up, implemented March 1, with about 8,500 scarce intervals. There was no ramp capability-down scarcity during 2022. The median ramp-up cleared during shortages was about 85 percent of the requirement while the fifth percentile was about 26 percent. Like the day-ahead market, ramp capability-up in the real-time market peaked in August, about 50 percent higher than the next highest months: July and September.

The average scarcity price for 2022 was $22/MW for ramp capability-up. The monthly average ramp capability-up scarcity prices peaked in November.

Scarcity related price spikes for regulation-up, regulation-down, and contingency reserve happened more frequently at the beginning of each hour while ramp capability-up scarcity peaked toward the end of the hour. Figure 3–21 and Figure 3–22 below illustrate a count of the scarcity events in the real-time market by the 12 intervals of each hour.

Figure 3–21 Regulation and operating reserve scarcity, by interval, real-time

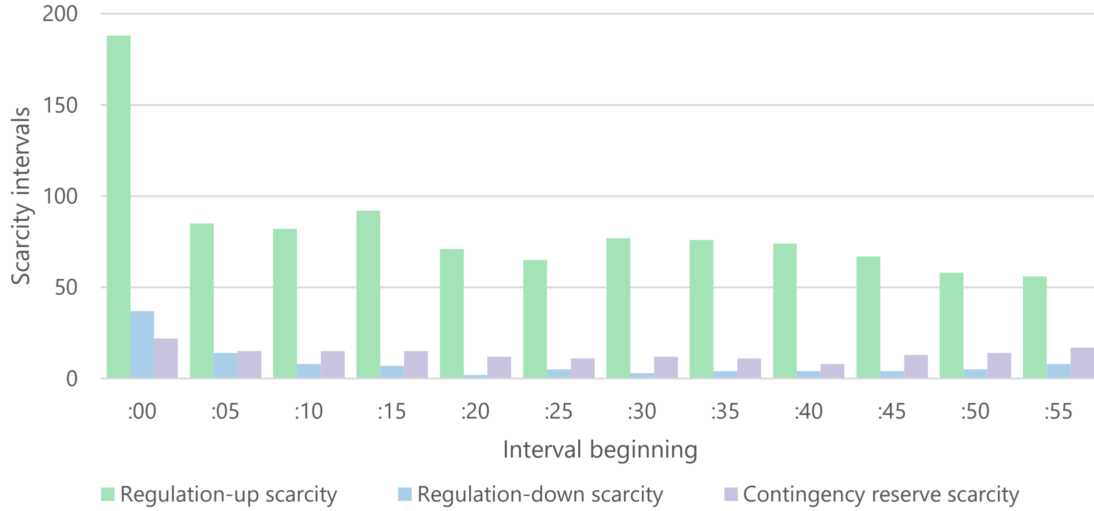
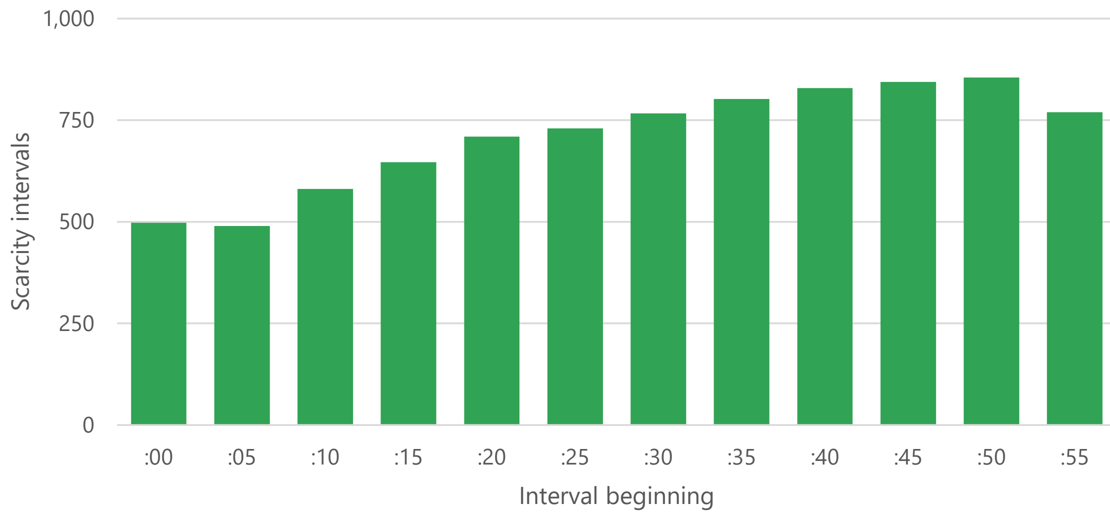


Figure 3–22 Ramp capability-up scarcity, by interval, real-time



About 19 percent of regulation-up scarcities and about 37 percent of regulation-down scarcities occurred in the first interval of the hour. Regulation scarcity events typically happen at the beginning of the hour and have since the inception of the marketplace. Contingency reserve scarcities were more equally distributed across the hour, though they also peaked at 13 percent in the first interval of the hour. Ramp capability-up scarcities were more evenly distributed throughout the hour than regulation scarcities. However, they peaked toward the end of the hour in interval beginning :50, followed by the two preceding intervals.

One potential reason for regulation scarcities peaking at the beginning of the hour is that SPP does not pre-position regulating resources to be within their regulating maximum and minimum limits prior to the period that the resource is cleared for regulation. Consider a resource that is currently dispatched to its minimum of 100 MW. If this resource clears 20 MW of regulation-down reserves in the next hour, it will need to move up to 120 MW. If the resource's ramp rate does not allow it to ramp up 20 MW in one interval, the resource cannot provide regulation-down in the first interval. If this causes a scarcity, the resource may have to buy back a day-ahead position at scarcity prices. However, if the resource moves there prior to the hour, it will deviate from its current dispatch instruction, which has financial penalties.[70] Consequently, resources often follow dispatch until the first interval of the regulation commitment, contributing to shortages in the first interval of the regulating commitment.

There are reasons for SPP to pre-position resources to their regulating ranges prior to the regulation period. However, should opportunity costs occur for these resources during the pre-position period, this may need to be addressed.

3.2.2 RAMPING

The increase or decrease of the resource's output to achieve the next dispatch instruction is called "ramp." The number of megawatts a resource can ramp in one minute is the resource's "ramp rate."

In real-time, resources are increasing and decreasing output to meet changes in both load and non-dispatchable generation. These changes can be measured as changes in net load. Net load is net of both non-dispatchable generation, the combination of imports, exports, and parallel flows from other markets.

Figure 3–23 shows the frequency and extent of net load changes from one real-time interval to the next.

[70] Resources that deviate from their dispatch signals can receive Uninstructed Deviated Charges for the deviated megawatts. The median price per megawatt for deviation in 2022 was about $3.60. However, the maximum price charged for deviation was about $44.20. In addition to this charge, resources do not receive cost reimbursement for any deviated megawatts in the event energy prices are lower than energy cost.

Figure 3–23 Frequency of net load change, real-time

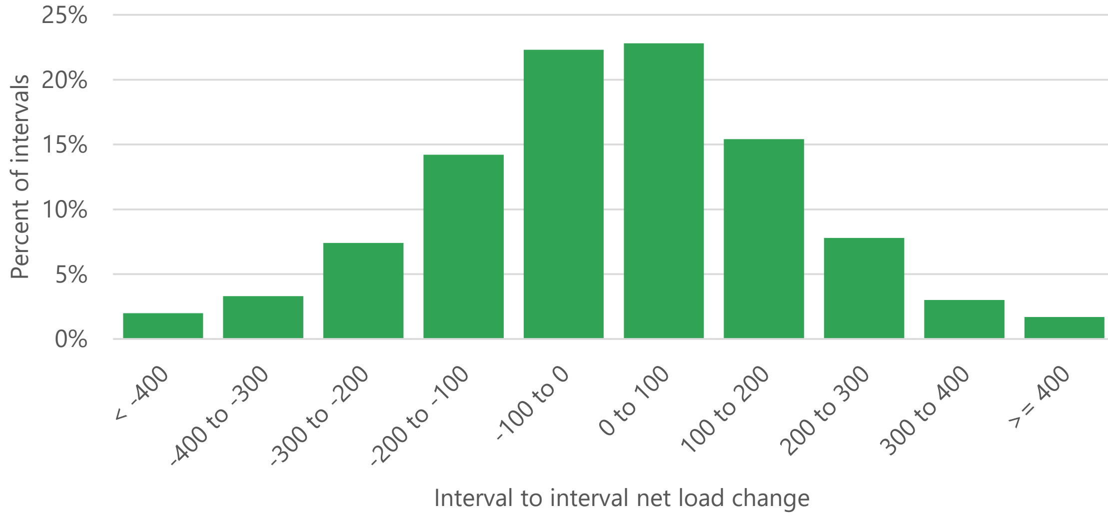
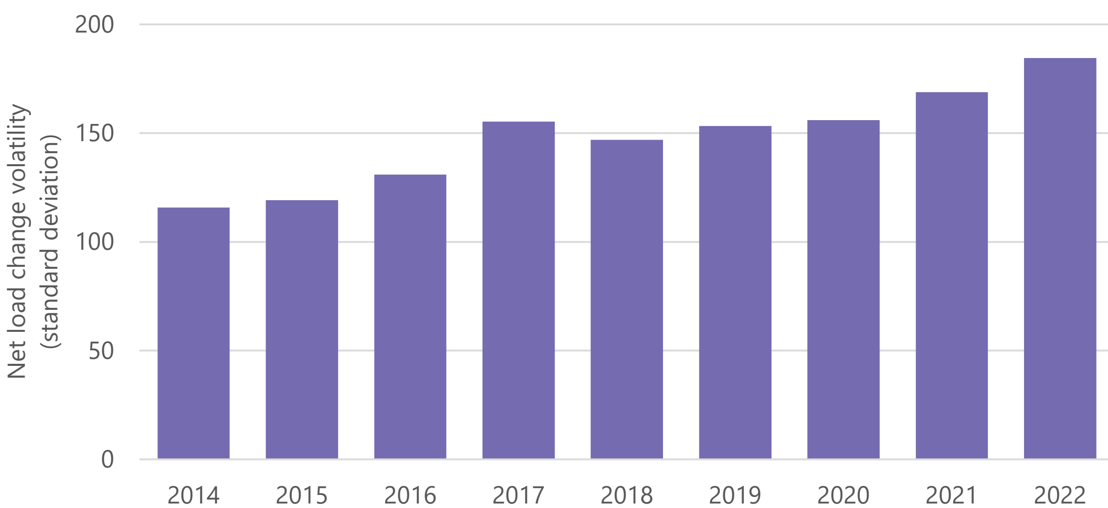


Figure 3–23 represents decreases in net load and increases in net load for the year. Of the net load changes between real-time intervals, 95 percent were between a decrease of about 381 MW and an increase of about 359 MW. This is up from 2021 when the decrease was about 345 MW and the increase was about 330 MW. The 95th percentile net load changes, both positive and negative, increased by about nine percent in 2022, up one percent from 2021 changes, and a five percent increase from previous year's trends. This means that the market is seeing a slow increase in net load swings. These changes in net load must be balanced by resources with a flexible dispatch range, or ramp capability.

Figure 3–24 below shows the volatility in net load change since 2014.

Figure 3–24 Volatility of interval-to-interval net load change

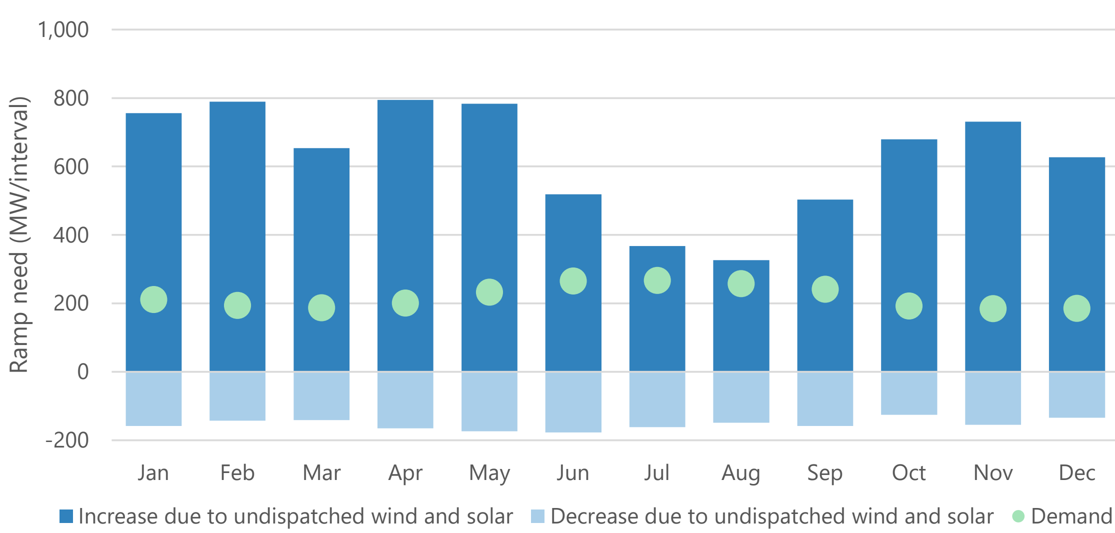


Net load volatility increased about eight percent from 2020 to 2021 and about ten percent from 2021 to 2022. For the most part, net load volatility has slowly increased since 2014.

As variable energy resources serve more load, volatility is expected to increase. Forecasted variable energy resources, wind and solar, produced about 38 percent of total generation. Of all intervals where these resources were on-line and available for economic dispatch, forecasted variable energy resources were expected to follow dispatch in about eight percent of resource-intervals, compared to about 80 percent for non-forecasted energy resources. When these forecasted resources are not following dispatch, it is possible for them to reduce the ramp need when they move in the same direction as demand, as long as they don't overshoot demand by too much. However, they can also increase the amount of ramp need when they move in the opposite direction as demand or overshoot demand by a large quantity. When they increase the system ramp need, flexible, dependable resources are needed to account for the additional ramp they cause.

Figure 3–25 below shows the how much additional ramp was needed in real-time intervals due to undispatched, forecasted variable energy resources with the ramp that would have been needed for demand alone.

Figure 3–25 Additional ramp need due to undispatched forecasted resources, 95th percentile, real-time

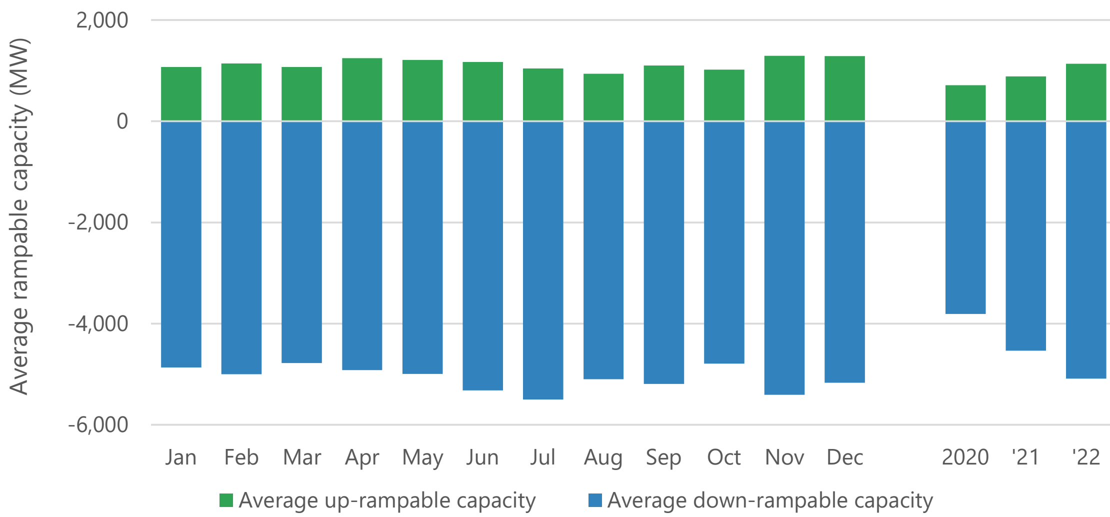


When forecasted resources were not following dispatch, they increased the real-time system net ramp need in about 74 percent of intervals. The 95th percentile increase in net ramp need was nearly 800 MW in several months. This is almost four times the ramp needed to meet the 95th percentile demand alone in these months. In contrast, undispatched forecasted resources decreased net ramp need by only about 180 MW at the upper end. Because the precise timing of the fluctuations of forecasted resources is unknown, rampable capacity must be committed and available throughout the day. This is even more challenging when the resources' real-time output does not follow the forecast. While forecasted variable energy resources provide inexpensive energy, it comes at the cost of a greater need for more system ramp.

In any interval, resources typically have a range either above or below their current operating point that they can move to in the next interval. The rate at which they can move is their ramp rate. The total amount they can ramp is their rampable capacity.[71] SPP operators count on this rampable capacity to meet future energy needs and to protect against uncertainty.

Figure 3–26 shows the average up-rampable and down-rampable capacity by month after energy and operating reserve obligations are accounted for.[72]

Figure 3–26 Average rampable capacity



Although many factors affect available ramp, rampable capacity in the up direction, when averaged by month, was lowest in March, and highest in November. The amount of rampable

[71] Rampable capacity may be limited by a resource's ramp rate parameter and/or maximum or minimum operating limit. When a resource is near its maximum operating limit, even though its ramp rate allows it to ramp quickly, the amount it can ramp up is limited.

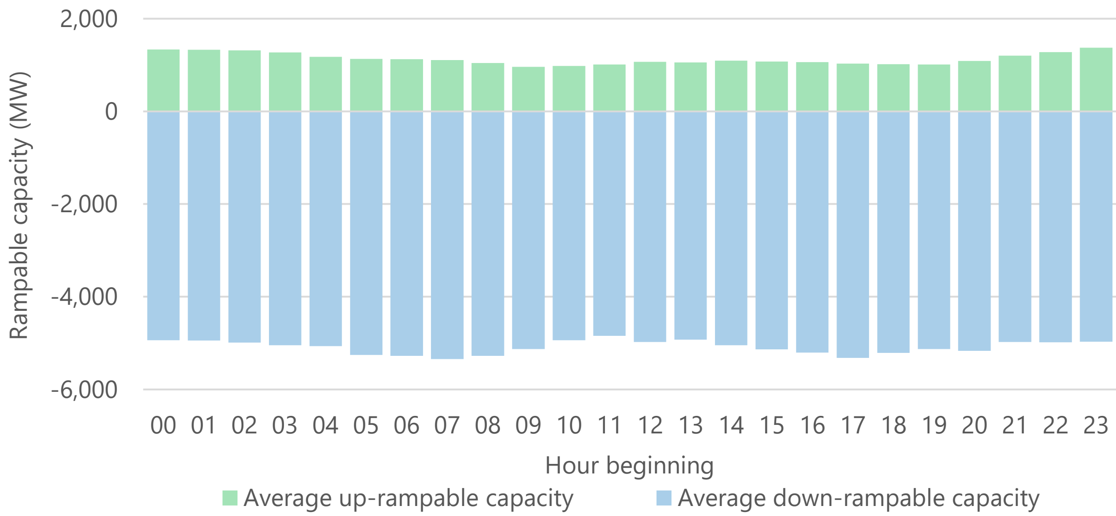
[72] The figures showing average rampable capacity are approximations. The market clearing engine allows for ramp sharing and also allows for some products to go short so that higher priority products can clear. There can be different amounts of rampable capacity available depending on the product. These graphs average the amount of load increase or decrease that would cause a shortage on the product that is nearest to a shortage.

capacity in the down direction is much larger than in the up direction when averaged by month, as shown above.

While the monthly averages do not change significantly throughout the year, the up-rampable capacity is on average about 28 percent higher and the down-rampable capacity is on average about 12 percent higher in 2022 than in 2021. The March implementation of the ramp capability product, covered in Section 3.2.3, had some effect on the increased volumes seen in the last 3 quarters of 2022.

Figure 3–27 shows the average rampable capacity in both the upward and downward directions by hour of the day.

Figure 3–27 Average rampable capacity, by hour



Rampable capacity in the up direction is lowest following the morning ramp in hours beginning 08, 09, 10, and 11. From hour beginning 12 until hour beginning 19, the rampable capacity increases slightly but remains lower. This is when load is relatively high for the day and resources operate closer to their maximums. As resources move closer to their minimum limits during the night, this rampable capacity increases. The ramp capability product is a step in the right direction to incentivize rampable capacity, but a design flaw, discussed in section 3.2.3, makes it unclear yet if prices based on lost opportunity will incentivize sufficient rampable capacity long term.

As previously mentioned, there is much more rampable capacity in the down direction than in the up direction. Although this rampable capacity is less in the early morning and late evening hours, this amount does not vary significantly throughout the day.

Ramp capability is needed to meet all of these changes in generation and load from interval to interval. A resource's ramp rate is used to calculate its dispatch instruction. A resource will generally not be dispatched beyond the capability of the resource's ramp rate. The ramp capability product, implemented in March 2022, procures ramp for expected uncertainty events in the subsequent 10-minute horizon.

3.2.3 RAMP CAPABILITY PRODUCT

The volume of scarcity events highlighted in Figure 3–13, illustrates the need for ramp capability. A resource's ability to ramp should be part of the clearing and dispatch decision and should be valued at a price to the extent the ramp is beneficial to the market. The MMU believes that a properly designed ramp capability product will be beneficial to the market, as it will properly price the need for rampable capacity.

SPP has designed a ramp capability product, which was implemented on March 1, 2022.[73] While the MMU generally supported the proposed design, the MMU did have some concerns with the design prior to implementation.[74] In addition to these concerns, the MMU identified an issue after implementation with the deliverability of ramp cleared by the ramp-up capability product. The MMU pre-implementation concerns and the deliverability concerns are both discussed later in this section.

3.2.3.1 Ramping limitations affect market outcomes

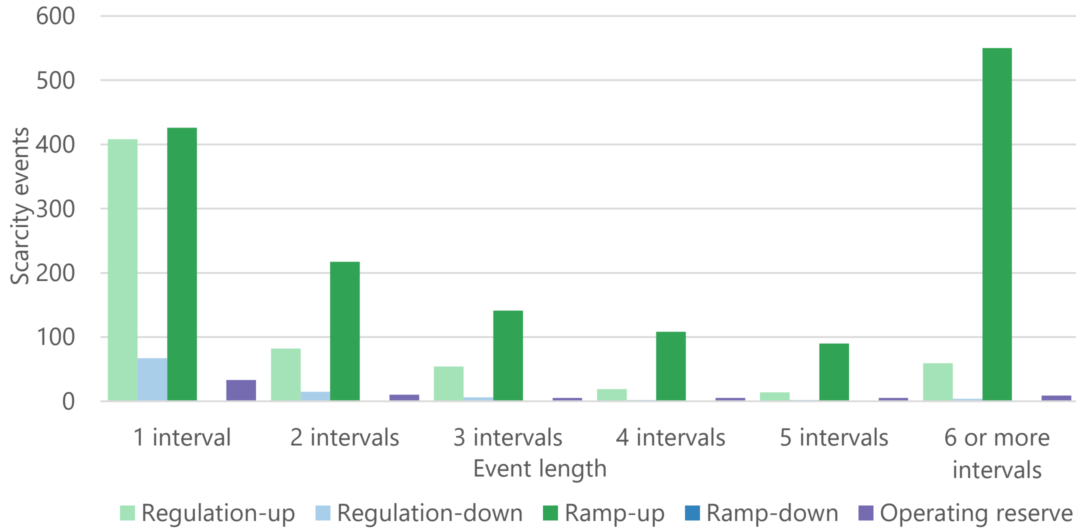
The real-time dispatch does not consider future intervals. It simply calculates one value: a dispatch instruction for the next interval. While the real-time balancing market considers a resource's ramp capability for the purpose of calculating the dispatch instruction for the next interval, ramp is not considered for any interval after that. Prior to the ramp product's implementation, ramp needs were not accounted for in terms of the subsequent dispatch instructions even though ramp is the very capability that allows a resource to get to future dispatch instructions.

Not having ramp capability considered for future intervals, can cause the market clearing engine to not be able to procure enough energy to serve the load or provide sufficient operating reserves in those future intervals. Even when enough capacity is available, a lack of ramp renders that capacity unreachable. Moreover, sufficient ramp has typically been offered, by the market participants, but the clearing process has not left enough available for future use. When

[73] See RR361, RR441, RR470, RR488, and Docket No. ER20-1617.
[74] See MMU comments in Docket No. ER20-1617.

this occurs in the pricing run, it often leads to short-term transitory price spikes.[75] Scarcity events in the dispatch run are shown in Figure 3–27.

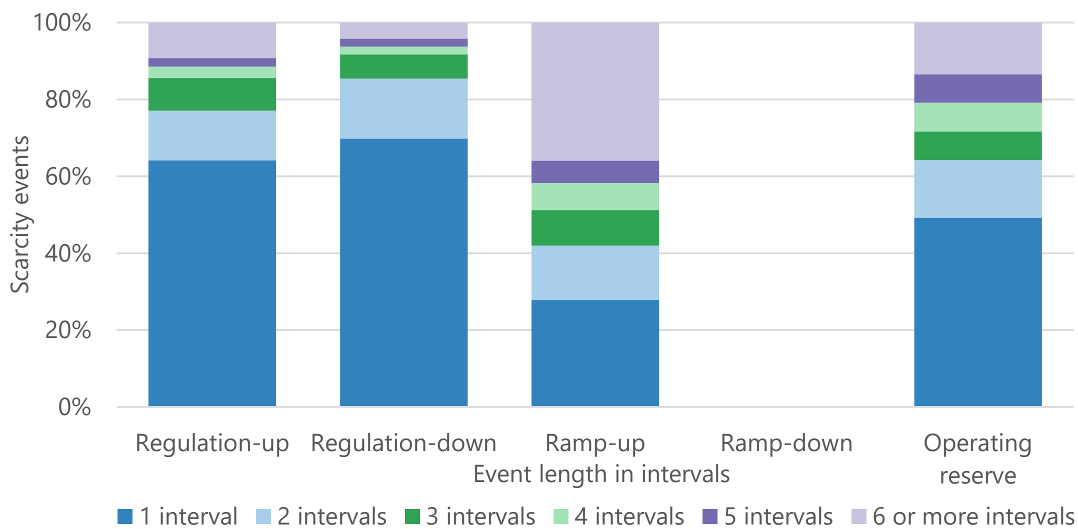
Figure 3–28 Interval length of scarcity events in the dispatch run



This figure shows that a scarcity pricing event in real-time was most likely to occur for only one five-minute interval. Comparably few scarcity pricing events last more than two intervals. This pattern has been consistent in recent years.

Figure 3–29 shows the interval length for the different types of scarcity events.

Figure 3–29 Interval length of short-term price spikes, percentage



[75] This is essentially temporal, or time-based, congestion.

Of all the regulation-up scarcity events, about 65 percent lasted for only one interval, and about 13 percent lasted for two intervals. For regulation-down scarcity events, about 70 percent lasted for only one interval, and about 16 percent lasted for two intervals. Operating reserve scarcity event lengths were more diverse with about 49 percent lasting for one interval, about 15 percent lasting two intervals, and about 7 percent lasting three intervals. These are roughly in line with 2021 results. For ramp-up scarcity events, 28 percent lasted one interval, and 14 percent lasted for two intervals. While ramp-up scarcity events decrease quickly as event length increases, like other products, there were many more ramp-up scarcity events, and they lasted longer. About a third of ramp-up scarcity events lasted longer than five intervals. Though relatively few, some ramp-up scarcity events lasted over 60 consecutive intervals. There were no ramp-down scarcity events.

Where sufficient capacity cannot be dispatched, scarcity prices are invoked. Scarcity prices are economic signals alerting market participants to the insufficient supply of a product. Almost all of these intervals with scarcity pricing were due to a lack of cleared ramp and not a lack of capacity. If sufficient ramp were reserved in advance for these scarcity intervals, then these scarcities likely could have been avoided. Ramp availability increased in previous years, but scarcity events have also increased, highlighting the continued need for systematic ramp procurement. The ramp capability product was expected to help reduce these transient scarcity events.

In addition, marginal energy prices can be elevated even when energy is not scarce. When ramp in the up direction is short, energy will always be given the highest priority. If there is not sufficient ramp to meet both energy and regulation-up, for instance, then the regulation-up scarcity price will be reflected in the marginal energy price. This causes a high marginal energy price even though there is no energy scarcity because the two products are competing for ramp. This makes energy prices more volatile. If sufficient ramp had been available, then regulation-up scarcity prices would not have raised the marginal energy price. A well-designed ramp capability product can ensure that more rampable capacity is available to meet energy so that regulation-up scarcity prices can be avoided. This helps to better reflect system conditions and reduces dispatch volatility.

3.2.3.2 Design of the ramp capability product

In the 2017 annual report, the market monitor recommended that SPP create a ramp capability product. SPP implemented the ramp capability product on March 1, 2022.[76]

[76] See RR361, RR441, RR470, and RR488 and Docket No. ER20-1617.

The ramp capability product design optimizes the resources' dispatch instructions over a ten-minute period to allocate any economically available ramp for the interval starting ten minutes in the future. Future ramp needs get met by pre-positioning online resources with available ramp if the cost of this action is less than the applicable ramp-scarcity demand curve price. The ramp requirement is set to procure enough ramp to meet forecasted net load changes plus an amount to cover unexpected net load changes based on historical needs. The ramp product optimizes only online ramp. Off-line ramp is not eligible to clear the ramp capability product, due to the short 10-minute clearing horizon. A market-clearing price will be set by the opportunity cost of providing other products. Figure 4-25 displays the average day-ahead and real-time ramp capability-up market clearing prices.

As shown in Figure 4–25, the average real-time market clearing prices for ramp-up averaged $5.69/MWh for the ten months it was in effect for 2022, while the average day-ahead prices only averaged $2.29/MWh. The disparity between the two markets prices stems from an issue discovered with resources clearing ramp capability-up behind binding constraints. This issue is described, in detail, below in section 3.2.3.2.1. The price for ramp-down was zero for every interval during the year for both real-time and day-ahead markets illustrating that the marketplace has a lesser need for rampable capacity in the down direction.

Figure 3–30 and Figure 3–31 below show the day-ahead and real-time cleared ramp-up megawatt hours for each product by fuel type.

Figure 3–30 Day-ahead cleared ramp-up by resource type

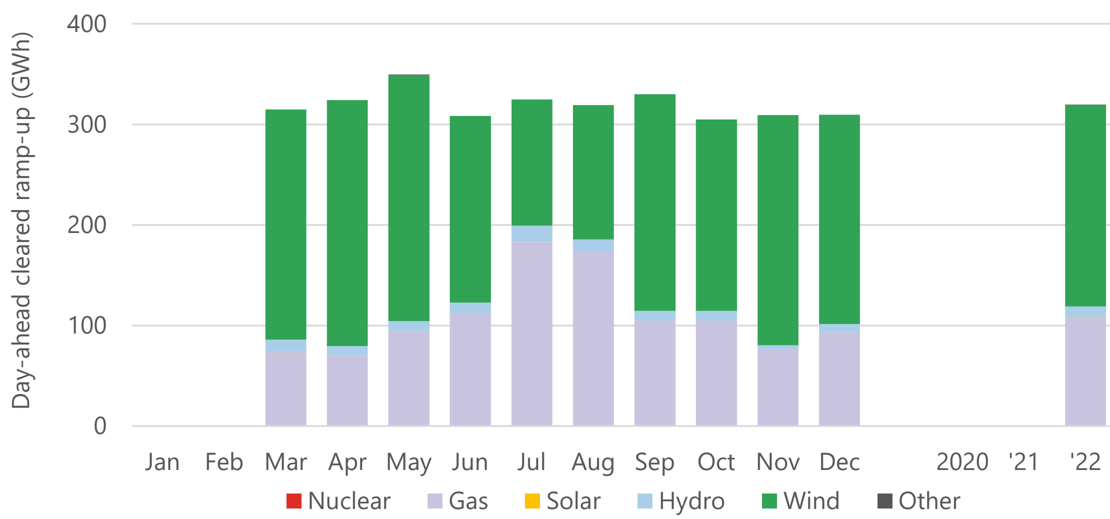
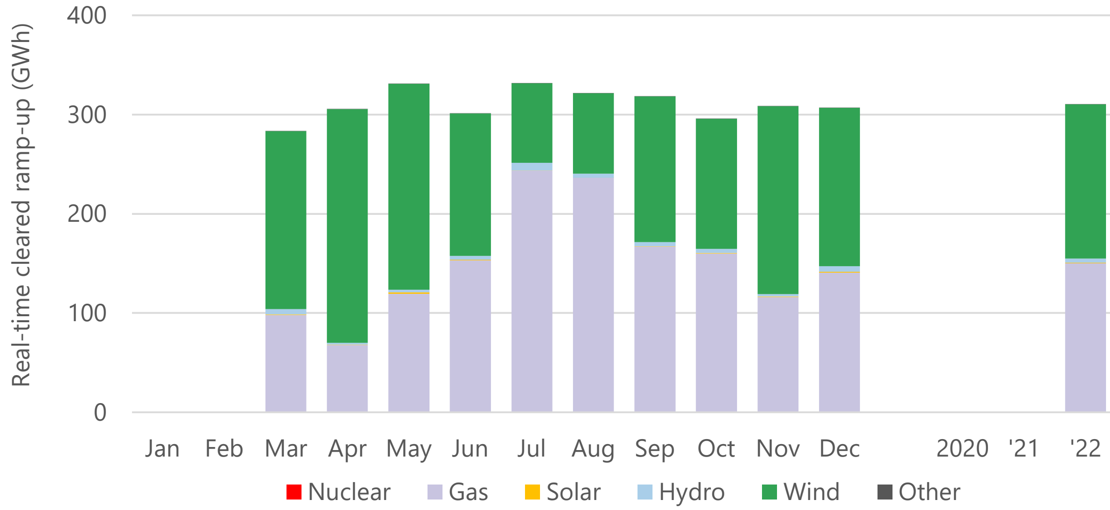


Figure 3–31 Real-time cleared ramp-up by resource type



As can be seen in the two above charts the vast majority of ramp capability-up is cleared by wind and natural gas resources. These figures also show that wind resources clear a greater percentage in the day-ahead market than the real-time market. Sixty-three percent of the ramp capability-up cleared in the day-market was cleared by wind, as compared to only 50 percent in cleared by wind resources real-time.

In winter 2022, the market monitor evaluated the effectiveness of the newly implemented ramp product, and discovered a design issue. This issue along with the market monitor's other preimplantation concerns are addressed below:[77]

3.2.3.2.1 Ramp capability-up procured behind binding constraints

The MMU was concerned with the trend of day-ahead ramp capability up scarcity events being roughly two and a half times the frequency of real-time ramp capability up scarcity events.[78] This is not a logical trend as there is far less uncertainty in the day-ahead market than the real-time market. In the day-ahead market, resources are considered to always stay on dispatch, forecasted outputs are assumed to be in line with forecasted quantities, and resources are not considered to trip. These assumptions do not hold true in the real-time market, so typically there are far more regulation and operating reserve shortages due to ramp limitations in real-time than day-ahead.[79]

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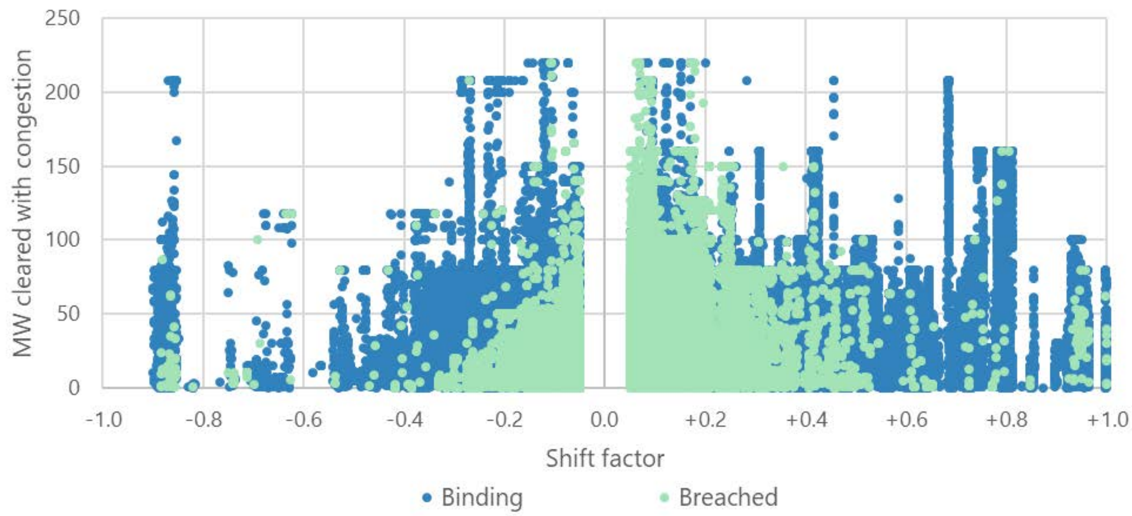
[77] See MMU comments in Docket No. ER20-1617.
[78] See Figures 3-13 and 3-14.
[79] See Figures 3-13 and 3-14.

The reason for the disparity between day-ahead and real-time ramp shortages has to do with how ramp capability-up is accessed for clearing. The resource owners do not offer in a cost for either ramp capability-up or -down. Instead, the products clear solely based off their opportunity costs for not clearing other products, such as energy. For instance, if a resource had an energy locational marginal price of $35/MWh and marginal energy cost of $30/MWh, the opportunity cost for ramp capability-up would be $5/MWh. This means that the price for ramp capability-up will need to be at least $5/MWh for this resource to clear the product. However, all dispatchable resource types with available ramp may participate in clearing this product, and congestion is not considered in the clearing. This means that a resource behind a constraint may have a negative $65/MWh energy locational marginal price and marginal energy cost of $10/MWh. In this case, this resources opportunity cost would be negative $55/MWh. The market-clearing engine considers all negative opportunity cost to have $0/MWh opportunity costs.

There is a disconnect with the assumptions used in the clearing of the ramp capability product and the actual deployment of the ramp. When the market clearing engine goes to deploy the ramp cleared behind the constraint, it is often too expensive to meet the ramp needs in the market. This can make the market go short products, when the cost of congestion relief costs are higher than the scarcity demand curves. In the example above, the negative $55/MWh opportunity cost will likely get more negative as the resource gets dispatched up for ramp. When the costs to ramp-up the resource get higher than the scarcity or violation relaxation limits the market will go scarce the product and price it with the associated scarcity price. Ramp capability scarcity demand curves are discussed in section 3.2.3.2.2.

Figure 3–32 below shows the megawatts of ramp capability-up cleared on resources with shift factors on a binding or breached constraint in the real-time market.

Figure 3–32 Real-time cleared ramp-up by resource type



The above graph illustrates that there is a large percentage of ramp capability-up being cleared behind a binding or breached constraint in the real-time market. The negative values represent resources with shift factors that increase congestion on a constraint, thus decreasing the ability to deliver ramp-up to the market. This is a leading contributor to the market not being able to use the ramp procured. SPP is working on solutions to reduce the effects of stranding ramp behind constraints.

3.2.3.2.2 Ramp product demand curve prices are likely too low

The ramp product prices scarcity with a demand curve. The MMU had concerns that the demand curve prices for ramp are likely too low. Prior to implementation, there was a concern that low prices may not allow the market to provision rampable capacity even though it is available. Consequently, physical ramp may be insufficient, and the price may not reflect the actual value of ramp, which undermines the purpose of a ramp product.

The MMU recommended that the maximum demand curve price be set slightly below the minimum regulation demand curve price. Avoiding regulation scarcity events in the future is the primary goal of a ramp product. A higher scarcity price may be needed to clear physical ramp and to incentivize ramp capability. The MMU reviewed the ramp-up and ramp-down scarcity demand curve's effectiveness. Ramp-down has had a $0/MW market clearing price since implementation in March. This is due to the abundance of rampable down capacity available in the market, as shown in Figure 3–26, above.

As stated before, ramp capability-up did have scarcity in both day-ahead and real-time markets. However, the MMU was unable to analyze the effects of the ramp-up demand curves, due to the issues discussed in the previous section concerning the deliverability of the procured ramp capability-up. In order to assess the effectiveness of the demand curves, we recommend that SPP staff evaluate the effectiveness of the demand curves when assessing solutions to the stranded ramping issue. There were no concerns with ramp capability-down scarcity demand curves as the product never went scarce in either day-ahead or real-time.[80]

3.2.3.2.3 Reduced need for instantaneous load capacity

The process known as instantaneous load capacity is ramp procurement without ramp payment. The instantaneous load capacity ensures that sufficient rampable capacity is committed to ramp from one average hourly load to the next. Resources committed to provide this rampable capacity add value to the market but are not paid for that value. These resources often run at a financial loss for most of the hour and are merely made-whole to their costs. The instantaneous load capacity requirement is not removed or reduced by the proposed ramp product. If more than one ramping timeframe is needed for more than one ramping purpose,[81] then the market monitor could support multiple ramp products.

SPP is working to implement an uncertainty product that will work similarly to the ramp product, with a one-hour time horizon, and off-line resources will be able to participate.[82] The MMU believes that this product, in conjunction with the ramp capability product, should significantly reduce the need for the use of committing the uncompensated capacity, currently defined as instantaneous load capacity. The MMU will evaluate the effects of both products in the day-ahead and real-time market after implementation of the uncertainty product and also after deliverability issues are addressed for the ramp capability-up product.

3.2.4 UNCERTAINTY RESERVE PRODUCT

SPP has proposed an uncertainty reserve product that has been approved by FERC and is slated to go into production on July 6, 2023.[83] The uncertainty reserve product is designed to provide one-hour rampable capacity. Both on-line and off-line resources will be able to clear, though off-line resources are not eligible to be made whole for fixed costs. This product will clear in both day-ahead and real-time markets.

[80] See Figures 3-13 and 3-14.
[81] For instance, it may be appropriate to have a ramp product similar to instantaneous load capacity to address inter-hour ramping needs in addition to an intra-hour ramp product to address short-term load variability.
[82] See RR449, FERC Docket No. ER22-914.
[83] See RR449, FERC Docket No. ER22-914.

The MMU has noted some concerns with the uncertainty product design, and will monitor the implementation and make recommendations if necessary.[84] Issues discussed in section 3.2.3.1 with the ramp capability product clearing undeliverable rampable capacity will also be present for the uncertainty product, once implemented. SPP stated they plan to apply similar corrections to the uncertainty product as those used to correct deliverability of the ramp capability product. Those corrective actions are not identified at this time.

The MMU also has concerns that the proposed uncertainty product may clear in amounts less than an off-line resource's minimum limit. Because the proposed design does not make off-line resources eligible to be made whole to their fixed costs, clearing below their minimum limit could make it difficult to represent those costs in their offers. Also, a resource's minimum will actually be produced if it comes on line, so the MMU believes that a resource's minimum limit should be the minimum a resource can clear for uncertainty reserve. Market participants may respond to this by increasing their offer enough to recover these costs with a small clearing amount. This, however, can over represent costs, which can cause the demand curve to clear before physical generation. However, if market participants do not increase their offer while clearing below their minimum limit, they could under-recover their costs. Addressing this concern would require significantly more complicated software, which would increase solution times.

The MMU is also concerned that the maximum price on the demand curve is at 20 percent scarcity. Having the maximum price so low on the stepped demand curve could cause the demand curve to clear uncertainty reserves rather than physical resources. The MMU will monitor these issues after implementation and will make recommendations as necessary.

3.3 SELF-COMMITMENTS

The purpose of the centralized unit commitment processes is to commit sufficient resources to serve load, subject to transmission and resource constraints, while minimizing cost. The centralized unit commitment process is able to minimize commitment costs because it has information, such as the amount of capacity required, the current transmission topology, the parameters of each resource, and the current state of each transmission and resource constraint.

The idea behind centralized unit commitment is essentially this: In the same way a team will likely realize better outcomes when the coach selects both the players and plays, the Integrated

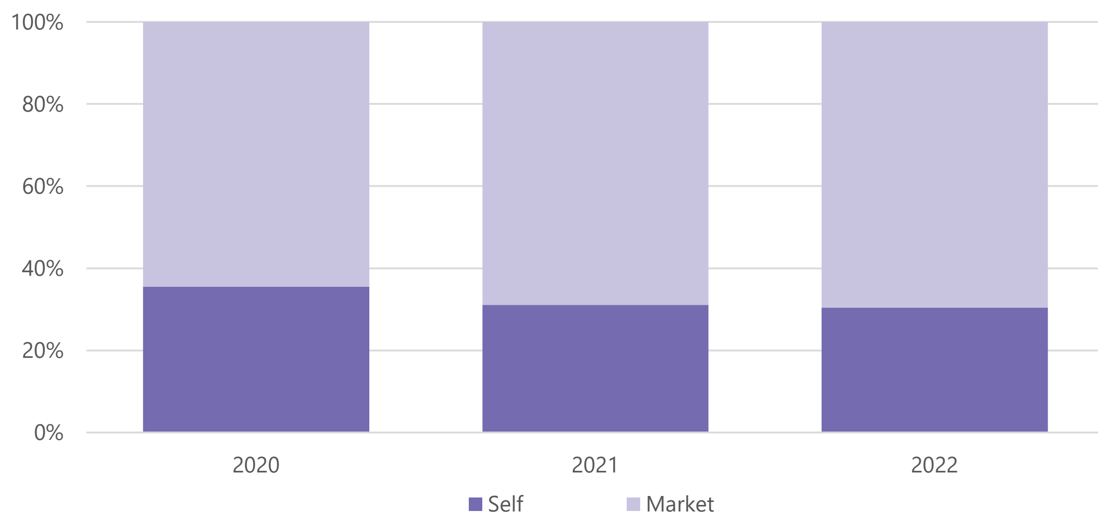
[84] See Motion to Intervene and Comments of the Market Monitoring Unit of Southwest Power Pool, FERC Docket No. ER22-914.

Marketplace will also probably realize better outcomes, for the collective, when it commits units in addition to dispatching them. While the team's record might be the same regardless of who is on the field, it is unlikely that the plays called, points scored, or yards gained would be the same.

Much like players choosing when to play, the SPP market allows participants to self-commit resources rather than have the market choose which units to run. While there may be good reasons for this, the practice can distort prices, offer and bid behavior, market outcomes, and investment signals.

Figure 3–33 shows the percentage of dispatch megawatts by commitment status in the day-ahead market.[85] All output from a self-committed unit is counted as self.

Figure 3–33 Percentage of megawatts dispatched by commitment status



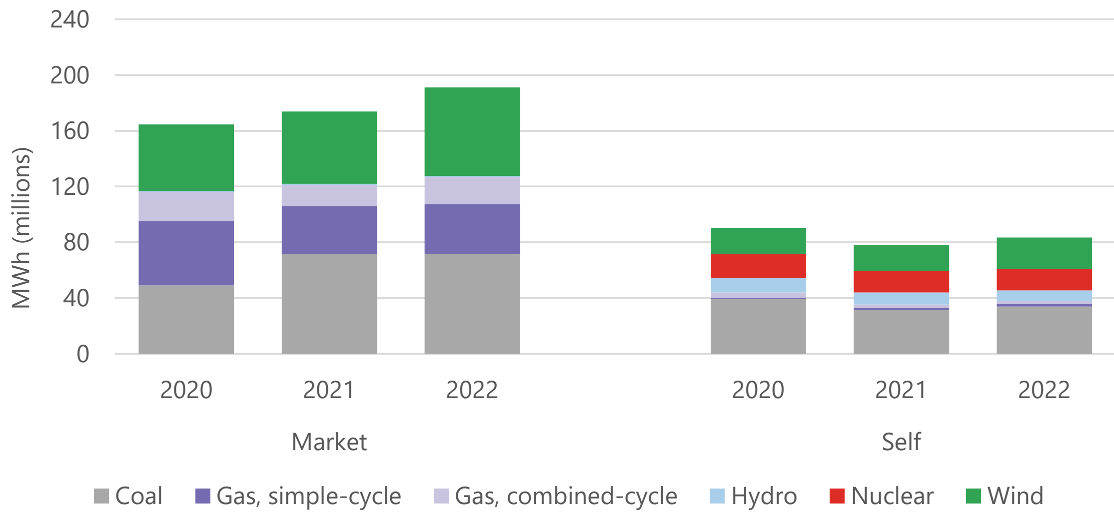
The volume of dispatched megawatts from self-committed resources remains nearly one-third of the total dispatch megawatt volumes. In other words, nearly one-third of the energy produced in 2022 was from a resource that was not economically selected by the day-ahead market's centralized unit commitment process.[86]

[85] For more detail on this and other metrics, see the MMU's whitepaper on self-commitment, *Self-committing in SPP markets: Overview, impacts, and recommendations*.
[86] Reliability unit commitments that continued to run in the day-ahead market were considered a market commitment.

Self-commitment shifts the merit order of the supply curve by treating the self-committed generators as price insensitive at their minimum, which shifts the supply curve to the right. The expected result of a rightward shift in supply is a decline in the marginal price of energy.

Figure 3–34 shows dispatch megawatts by fuel type by commitment type for each year of the study period.

Figure 3–34 Dispatch megawatt hours by fuel type by commitment type

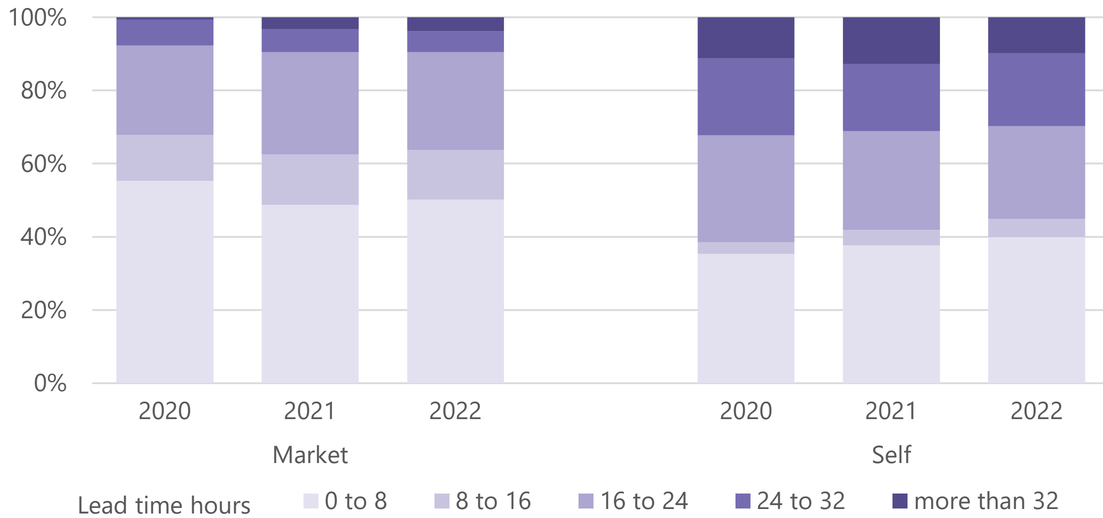


While resources of various fuel types self-commit, coal resources have produced and continue to account for the largest portion of self-committed megawatts. After declining by 19 percent from 2020 to 2021, Coal self-commitments increased by seven percent from 2021 and 2022. Additionally, after decreasing by three percent from 2020 to 2021, wind self-commitments increased by 23 percent from 2021 to 2022.

Resource lead-times, also called start-up times, are time-based operational parameters that vary widely by fuel type. In the Integrated Marketplace, resources can submit three different lead times: cold, intermediate, and hot. Thermal resources generally have longer lead times when they are cold as opposed to when they are hot. In the following section, lead times by commitment status and fuel type are examined.

Figure 3–35 shows the relationship between commitment status and start-up time.

Figure 3–35 Lead-time hours by commitment status

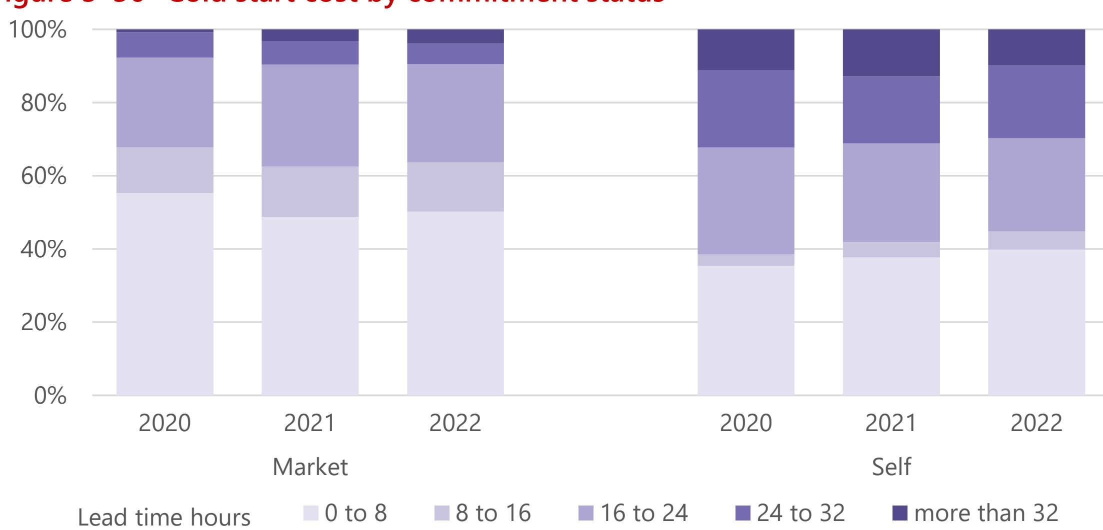


Self-committed resources tend to have longer lead times than market-committed resources. Because the centralized unit commitment must observe constraints other than cost, such as lead time, it may continue to run a unit even when the marginal price falls below that unit's offer. Nuclear units have the longest cold start-up time, followed by coal and natural gas.

Start-up offers are generally representative of the cost that a market participant incurs when starting a generating unit from an off-line state to its economic minimum and the cost to eventually shut the unit down. These offers are submitted in terms of dollars per start.

Figure 3–36 shows the relationship between commitment status and start-up cost.

Figure 3–36 Cold start cost by commitment status



Many of the units with high start-up costs have minimum run times that extend past the day-ahead market window. If the optimization evaluated start-up costs over each resource's full minimum run time, their start-up offers would be more competitive with shorter lead-time resources. This issue compounds for those resources with long lead times and high start-up costs. Because these units cannot come online until much later than the first hour of the day-ahead market day, their start-up cost is optimized over even fewer hours. Somewhat similar to lead-time, coal units have the highest cold start-up cost, followed by nuclear and natural gas.

Self-commitment represents a significant portion of the transaction volume in the Integrated Marketplace, and while it cannot be eliminated completely, the practice can likely be reduced substantially. By reducing self-commitment, prices and investment signals will likely be less distorted. A smaller distortion will likely help market participants make better short-run and long run decisions, which tends to coincide with improved market efficiency and profit maximization.

While the MMU has seen gradual reductions in self-commitments over the last few years, generation from self-committed generators still represents about one-third of the generation in the SPP market. Given its significance, the MMU recommends that the SPP and its stakeholders continue to find ways to further reduce self-commitments including developing a multi-day economic assessment.[87]

3.4 GENERATION OUTAGES

Generators cannot run constantly at full capacity and occasionally need to be out of service or derated. When a generation resource is out of service, its entire capacity is unavailable for dispatch. When a generation resource is derated, a portion of the capacity of the generation resource is unavailable for dispatch. Unless otherwise specified, outaged capacity refers to both out-of-service and derated unavailable generation.

Two major reasons for generation outages are generator maintenance and a forced event, such as an equipment failure. Generally, maintenance outages are planned or scheduled in advance in order to perform routine work, whereas forced outages are generally not scheduled and are difficult to predict in advance.

SPP assesses outages to determine real-time and future reliability of the bulk electric system. As the reliability coordinator and balancing authority, SPP approves, denies, or reschedules outages

[87] Chapter 7, recommendation 2017.4 "Address inefficiency caused by self-committed resources" for more information.

to ensure system reliability. The outage coordination methodology[88] is SPP's process document for scheduling outages. SPP's generation assessment process determines maintenance margin, which is the amount of capacity allocated for planned and opportunity generator outages. The purpose of the maintenance margin in outage scheduling is to help ensure capacity adequacy.

SPP's mission statement says that it will "*economically* keep the lights on."[89] Practically speaking, the more efficient and effective the market, the more economic incentives drive behavior that increase reliability. However, circumstances exist that are not promoting reliability through economic incentives. Some of the circumstances exacerbating the separation of economics from reliability in the market are outage driven.

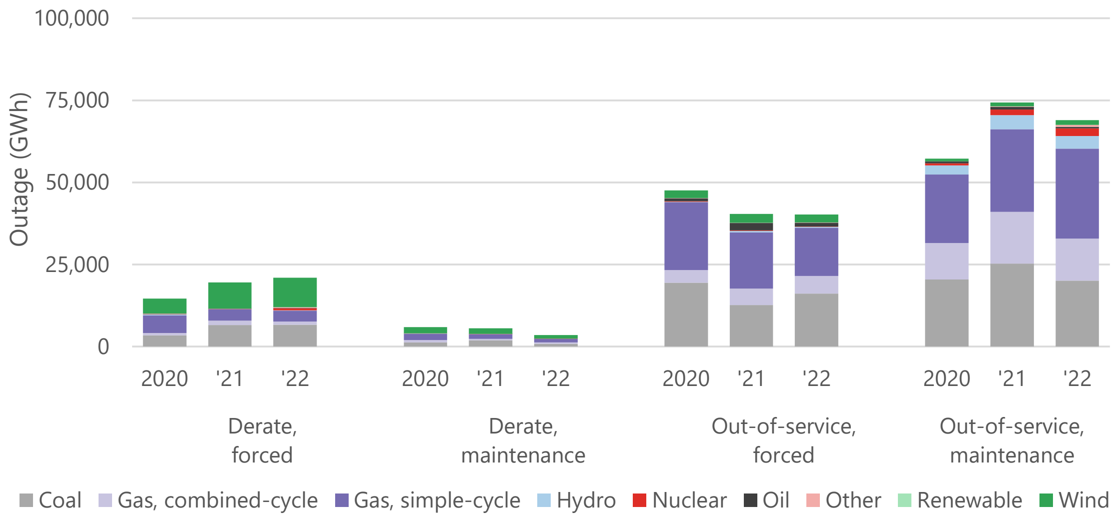
3.4.1 OVERVIEW

Outaged capacity has historically trended upward. However, in 2020 outaged capacity decreased, an anomaly due in large part to effects of the COVID-19 pandemic. In 2021, outaged capacity resumed the normal upward trend, increasing overall from the previous year by 11 percent. In 2022, the outaged capacity dropped seven percent from 2021. The higher levels of outaged capacity in 2021 may be explained by maintenance that was deferred from 2020 that was performed in 2021.

Overall in 2022, there was a slight decrease of outaged capacity likely due to normalizing of outaged capacity after the catch-up period in 2021. More specifically, maintenance outages decreased by nine percent while forced outages had a slight increase of two percent. Resulting in an overall decrease of outaged capacity between 2021 and 2022 of four percent. This can be seen in Figure 3–36, which shows capacity derated and taken out-of-service by reason—forced or maintenance.[90] Each reason is further categorized by fuel type.

[88] *SPP Reliability Coordinator Outage Coordination Methodology.*
[89] https://www.spp.org/about-us/, *emphasis added.*
[90] For purposes of this study, forced outages include forced, emergency, and urgent outage priorities. All other outage priorities, planned, opportunity, and operational, are classified as maintenance. Excess capacity/economic and upcoming model change outages are excluded from the results. Derated resources are still available to the market at a reduced capacity. Out-of-service resources are entirely unavailable.

Figure 3–37 Generation outages

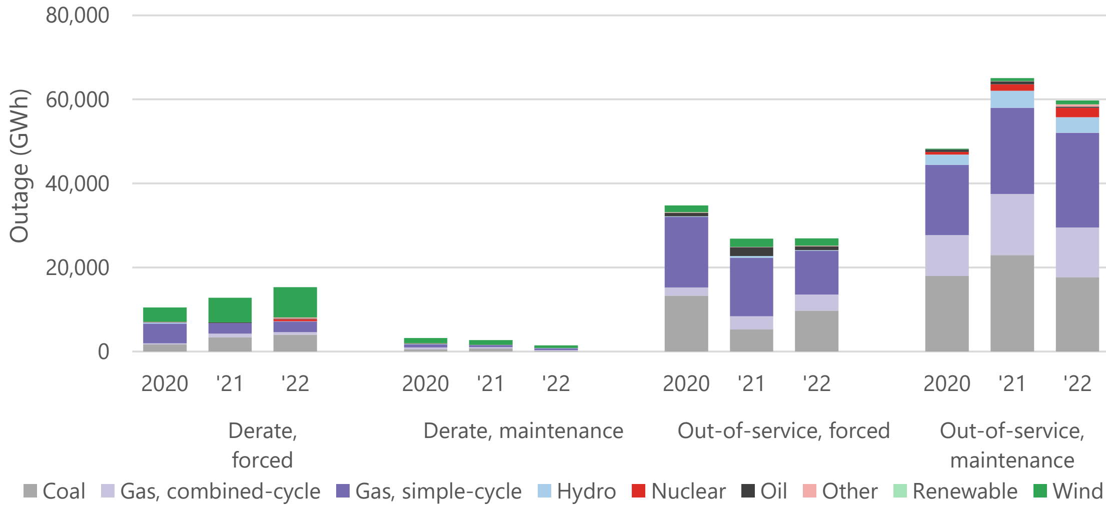


As in previous years, capacity taken out-of-service for maintenance accounts for the largest portion of outaged capacity. This is followed by capacity forced out-of-service; then by forced derates; and finally by maintenance derates. Coal provided about 33 percent of total generation[91] and accounted for about 33 percent of outaged capacity in 2022. Combined cycle gas provided about 13 percent of total generation and about 15 percent of outaged capacity, a similar ratio to coal. However, simple-cycle gas provided about eight percent of total generation, but about 34 percent of outaged capacity, a much higher ratio than coal or combined-cycle gas. The amount of capacity on outage is largely influenced by the amount of generation, but simple cycle gas has the highest rate of outaged capacity per generation. Currently, simple-cycle gas capacity is accredited the same in the resource adequacy process as coal and combined-cycle gas.

[91] See Figure 2–20.

Figure 3–37 shows outaged capacity for long-term outages and derates greater than seven days.

Figure 3–38 Long-term outages, greater than seven days



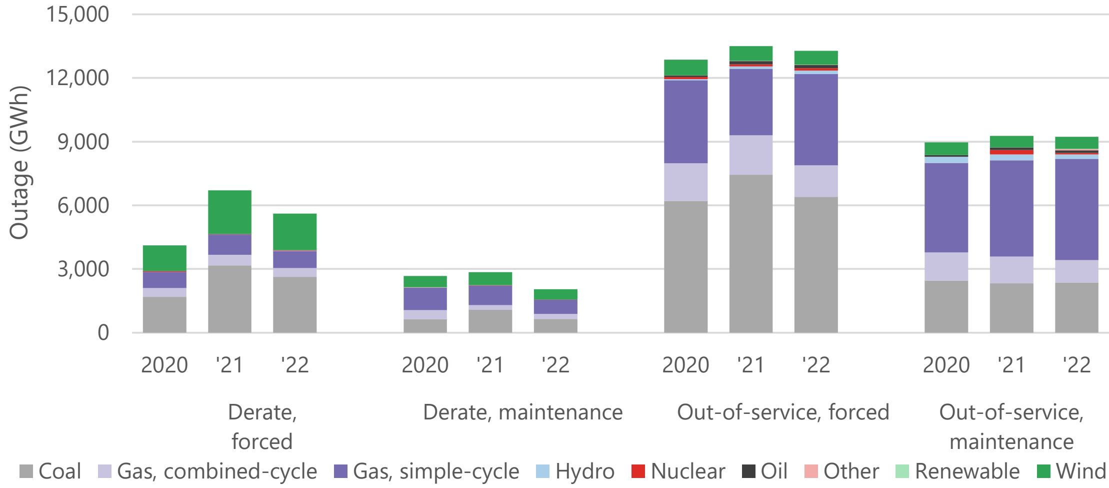
Outages and derates lasting longer than seven days are considered long-term. The majority of long-term outaged capacity is for maintenance. Overall, long-term outaged capacity decreased by about four percent from 2021 to 2022. However, misuse of long-term outages remains a concern.

Specific areas of concern are:

- placement of units on long-term outages during known or anticipated retirement;
- entry into the market, new construction projects;
- repowering projects;
- standing derates increasing in magnitude as wind farms age; and
- scheduling long duration outages during summer and/or winter peaks.

Figure 3–38 shows outaged capacity for short-term outages and derates of seven days or less.

Figure 3–39 Short-term outages, seven days or less



Outages lasting seven days or less are considered short-term. The majority of short-term outages are forced outages. Overall, short-term outages decreased about six percent from 2021 to 2022. Although there are multiple factors that contribute to the occurrence and completion of outages, the MMU remains concerned about the use of short-term forced outages, especially of accredited capacity,

When it comes to outages, 2020 can be viewed as an outlier due to the unusual conditions produced by the COVID-19 pandemic. Overall, the MMU is concerned about outages as outages affect both reliability and market efficiency. The MMU maintains that while some progress has been made there remains a lack of appropriate incentives to promote resource availability.

3.4.2 INSUFFICIENT INCENTIVES TO BE AVAILABLE

Even though there are legitimate reasons for resources to be on outage, proper incentives can promote reliability. A robust market design can help prepare for the best possible response to unforeseen difficulties by appropriately incentivizing availability through appropriate price formation, generation availability compensation, or true up, such as a claw back or receiving appropriate credit for resource adequacy.

In 2022, the Improved Resource Availability Task Force (IRATF) and Supply Adequacy Working Group (SAWG) reviewed recommendations from the Generator Testing Task Force (GTTF) to improve the accuracy of accreditation through a performance-based methodology. Stakeholders ultimately approved the option to use equivalent forced outage rate (EFORd') to adjust installed capacity for forced outages within management control. While this is a step in the right direction, the MMU ultimately believes this proposed accreditation process will fall short of providing any true incentive for availability.

3.4.2.1 Real-time and day-ahead market incentives

Historically, the SPP market tends to have relatively low prices as evidenced in Figure 4–1. As shown in Figure 2–5, on aggregate, load cleared nearly 100 percent of its real-time consumption in the day-ahead market. Typically, real-time generation procurement is not due to a load gap between day-ahead and real-time.

Low prices in the real-time and day-ahead markets are less likely to provide financial incentive for generators to complete maintenance and/or repairs as soon as possible. MISO provides a price floor during a maximum generation event based on the highest non-emergency offer.[92] ERCOT removes some reliability units from pricing and applies a risk adder to the price in certain situations.[93] In SPP, during conservative operations, resources have historically been paid large amounts in make-whole payments, while the prices were relatively low.

Price spikes in the SPP market are generally transient in nature. However, prices remained relatively high for a relatively long duration during the 2021 winter weather event. Otherwise, the generally low market prices during emergencies do not adequately reflect the value of reliability while large out-of-market payments are not transparent and do not properly inform investment decisions such as generator improvements, new generation, demand response resources, or imported energy. In order for maintenance and repair costs to be recovered, the value a resource provides must be reflected in some type of market price. A market price could also inform generators about the most reliable time to take outages. The current pricing mechanisms are not sending proper price signals to incentivize generation availability.

As noted in response to the February 2021 winter weather event, the MMU recommended that SPP and its stakeholders review price formation rules to consider if prices appropriately incentivize generation availability during emergencies and outages and would likely reduce outage volume and duration and increase the value of fuel certainty.

3.4.2.2 Resource adequacy incentives

The purpose of accrediting capacity to fulfill a Resource Adequacy Requirement (detailed in Attachment AA of the SPP OATT) is to ensure Load Responsible Entities (LREs) will be able to cover their net peak demand and that, on aggregate, SPP will have enough generation to cover

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[92] *MISO Tariff*, Schedule 29A. II. D.
[93] *ERCOT Protocols*, Section 6.5.7.3.1

system wide net peak demand with a probability of shedding load of one day in every ten years. Currently, SPP has a resource adequacy requirement for the summer season, and evaluates anticipated availability of summer capacity on February 15. While the RTO's process may assess capacity, it does not assess *availability* of that capacity.

Currently, the tariff lacks appropriate incentives for resources to remain available as there is no mechanism that addresses units that were claimed as capacity but become unavailable after February 15. LREs who have capacity that is accredited but is unavailable for the entire summer will not be subject to the capacity deficiency payment, the main tariff mechanism incentivizing LREs to carry an appropriate level of capacity. Without a mechanism to incentivize or ensure availability, there is a disconnect between the capacity SPP accredits for resource adequacy and the actual capacity available to operate the system reliably.

Additionally, the resource adequacy requirement[94] omits capacity shortages in non-summer months as there is currently no resource adequacy requirement for winter, spring, or fall.[95] Capacity shortages have been seen across every season, potentially compromising system reliability. For instance, capacity shortages can occur during extreme winter weather, such as the February 2021 winter weather event or the December 2022 winter storm. In both cases, a large portion of capacity accredited for the Summer Season was not available due to system shocks such as fuel deliverability and quality issues, equipment failures, and when wind resources experience icing and/or conditions outside of their operating threshold/tolerance. Planning for peak summer days as the only shock to capacity availability lacks the necessary complexity to ensure reliability year-round.

In numerous forums, SPP operations has described the importance of the availability of schedulable resources with a dependable fuel source due to the volatility of variable energy resources and system shocks such as adverse weather or pipeline outages. As outlined in section 2.9.2, the Improved Resource Availability Task Force (IRATF) and the Supply Adequacy Working Group (SAWG) reviewed the resource accreditation process in 2021, ultimately recommending to adopt a single summer season performance based accreditation (PBA) process using equivalent forced outage rate demand (EFORd) for conventional resources.[96] This process would adjust the installed capacity of resource accounting for forced outages, which would bring accreditation closer in line with expected availability, but would still fall short of

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[94] *SPP Open Access Transmission Tariff*, Sixth Revised, Volume No. 1, Attachment AA, Section 9
[95] SPP Stakeholders are currently reviewing a Revision Request that would convert the Winter Season Obligation to a full Resource Adequacy Requirement
[96] See "GTTF Performance Based Accreditation Recommendations for Conventional Resources" published by the Generator Testing Task Force.

being accurate. For variable energy resources, SPP adopted effective load carrying capability (ELCC) methodology. This methodology is more detailed, taking into account how much of installed capacity can be delivered given all other variable energy resources on the system.

The tariff design of performance-based accreditation is currently going through the stakeholder process but will likely be submitted to FERC later this year. ELCC was approved by FERC in August but later reversed in March 2023. In their reversal, FERC determined that SPP's accreditation approach of assessing capacity differently for different resources was unduly discriminatory. In addition, in a concurring opinion, Commissioner Clements expressed that the current accreditation process and any proposed accreditation process for just conventional resources is likely to not meet FERC's standard of just and reasonable and would be likely be deemed unduly discriminatory.

Even with the work SPP and its stakeholders have done toward creating a more accurate accounting of capacity, there is still nothing in the resource adequacy requirement that would mandate a minimum level of realized availability.[97] The MMU believes it is essential for the RTO to have accurate accounting of the registered capacity that is realistically deliverable, the portion available for dispatch, and incentives or disincentives to ensure that SPP's expectation of availability mirrors actual availability.

To ensure not only adequate capacity but that that capacity is deliverable when needed, the MMU recommends SPP and its stakeholders pursue mechanisms that would improve the availability of accredited capacity to ensure market participants have sufficient resources available to reliably serve load and planning reserve obligations year round.[98] There are numerous ways to potentially achieve this. However, the MMU strongly recommends an approach where LREs need to either offer enough to cover their load at all times or compensate another entity whose unused and unobligated capacity was used to cure any deficiency (see recommendations in Section 2.9 for more details).

While there is no way to be absolutely certain that capacity will be available in real-time, incentives can provide much more certainty than that exists with today's steel-in-the-ground capacity requirement. A sufficient requirement and accurate measurements of available capacity balance the plan to serve load reliably. SPP and its stakeholders should continue to work on

[97] *SPP Open Access Transmission Tariff*, Sixth Revised, Volume No. 1, Attachment AA, Section 9
[98] The Market Monitor is advisory in nature and presents possible solutions from an economic perspective. Other solutions of a regulatory nature are also under consideration by SPP.

mechanisms that reward resources that perform more reliably and are available when needed by SPP operations.

3.4.2.3 Outage coordination methodology

The outage coordination methodology is SPP's process document for scheduling outages. The Generator Outage Task Force recommended changes to the outage coordination methodology for better alignment with North American Electric Reliability Corporation (NERC) Generating Availability Data System (GADS) and for increased accuracy and flexibility of generator outage reporting. This includes alignment of the outage coordination methodology reporting threshold with SPP's registration threshold by decreasing it from 25 MW to 10 MW for accredited resources. Decreasing the outage or derate reporting threshold is intended to increase transparency and more accurately predict unavailable capacity which is especially important during reliability events such as conservative operations and energy emergency alerts (EEAs). Other improvements being implemented to the outage coordination methodology include decreasing the priority types from six down to three; updates, additions, and deletion of cause codes to improve accuracy and transparency of outage scheduling; and increasing the forced generation outages maximum lead-time to seven days maximum.

Resources in reserve shutdown that can be recalled, started, and synchronized within seven days are not required to report the outage to SPP. This rule allows resources to take an outage without the knowledge or approval of SPP. Furthermore, there is no guarantee, or even attempt to consider, if an emergency condition may occur during this time. The Generator Outage Task Force endorsed changes to the outage coordination methodology to require review of all reserve shutdown outages and to provide approval through the existing outage scheduling approval process.

The outage coordination methodology requires a reason and planned end date for the outage at both the time of the outage submittal and at the submittal of each change. An exception is that a forced outage can be submitted with an unknown cause, but the cause and planned end date are required to be updated promptly as soon as more information is known. The MMU has observed insufficient, omitted, delayed, and incorrect outage information. The MMU maintains material misstatements of outage information could be considered providing false information to the RTO and may result in referral to FERC.[99] SPP's roadmap initiative intended to resolve this market deficiency was recently given the lowest priority, effectively marking this item not to be evaluated again until SPP's roadmap is reassessed. Because outage submissions are intended to

[99] 18 CFR § 35.41

be used for assessing real-time and future reliability of the bulk electric system,[100] the MMU continues to recommend that SPP enhance the outage coordination methodology.

Additionally, an outage's original scope of work cannot always be completed in the original scheduled timeframe. Therefore, the current outage coordination methodology allows an outage to be extended. However, outage extensions can reduce efficiency of the outage coordination process. Regardless of the outage extension priority, outage extensions are approved similar to the way new forced outages are approved as the highest priority. Therefore, outage extensions have the potential to be inappropriately prioritized higher than new outages, resulting in denial of the new outages. The MMU has observed outages extended for reasons different than the original outage reason, resulting in misclassified and nontransparent outage extensions. The trend of outage denials is increasing as the maintenance margin[101] becomes tighter over time making accuracy and transparency in the outage scheduling process of increasing importance. The GOTF did not determine an endorsed path forward to close the gap of potential gaming opportunities of the current outage extension process. For some performance-based resource adequacy calculations, misclassified outages could affect the amount of capacity accredited under SPP's approved performance-based accreditation approach.[102] Misclassified outages can also affect out-of-market budgetary items, such as state recovery rates and taxes.

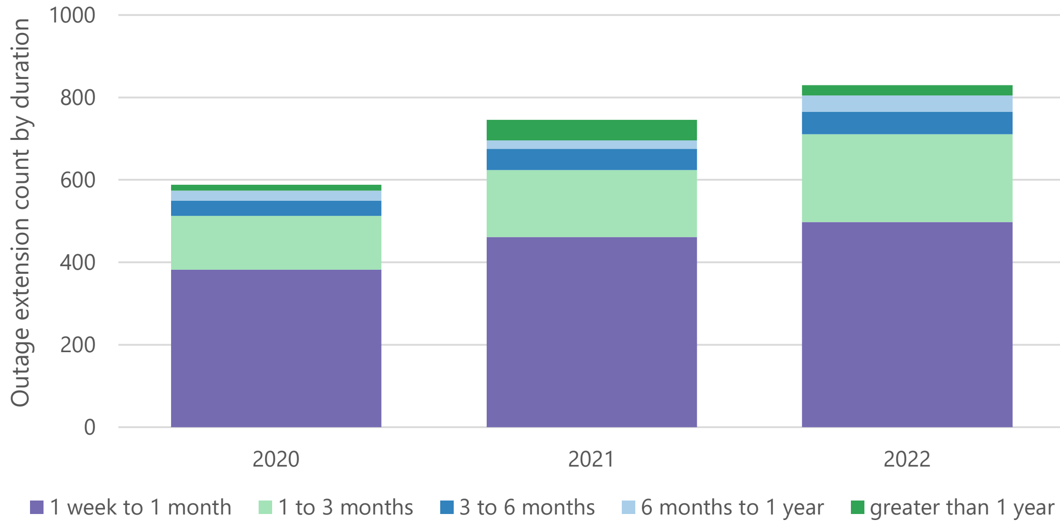
Similar to forced outages, outage extensions decrease the amount of available maintenance margin. The unexpected nature of outage extensions can adversely affect other processes such as the congestion hedging market. Figure 3–40 shows generator outage extensions that are greater than one week by duration.

[100] *SPP Reliability Coordinator Outage Coordination Methodology*, Section 1

[101] SPP allows a limited amount of planned megawatts on outage at any given time, referred to as the maintenance margin.

[102] Such as the Generator Testing Task Force's recommendation of EFOF'. See "GTTF Performance Accreditation Educational Overview_Final.pdf", available at https://www.spp.org/Documents/66148/SAWG%20Agenda%20and%20Background%20Materials%202021 1208.zip.

Figure 3–40 Generator outage extension count by duration, greater than one week



The amount of outage extensions continue to increase. Outage extensions can make outage coordination less efficient and can affect other downstream processes. The MMU remains concerned about the improper use of outage extensions, especially outage extensions of long duration. In 2022, there were 830 outages extended longer than one week, an eight percent uptick from 2021. The MMU encourages SPP to implement processes and mechanisms to properly schedule, classify, report, and prioritize outage extensions.

3.4.2.4 Generation assessment process

SPP implemented the generation assessment process in 2020 for outage scheduling to help ensure capacity adequacy. The generation assessment process analysis determines maintenance margin, which is the amount of capacity allocated for generator maintenance outages. Original implementation was at the daily level for both the short-term, seven-day maintenance margin forecast, and the long-term, greater than seven days maintenance margin forecast. In 2021, SPP implemented the Generator Outage Task Force (GOTF) recommendation to further refine the short-term maintenance margin to hourly to make the maintenance margin more accurate. The adjustment to a more granular short-term maintenance margin forecast allows for additional maintenance margin during off-peak hours, to accommodate weather-related outages for renewables, and to increase short-term transparency for the most concerning intervals, such as high demand low wind forecast intervals.

Additionally, the Generator Outage Task Force recommended a predictive generation assessment process impact study to evaluate impacts on outage scheduling due to increased variable energy entry and thermal resource retirements. This study is intended to predict whether future maintenance margins will be sufficient for generator maintenance and to determine if there is a need for the resource adequacy process to align with the generation assessment process. The MMU encourages SPP to complete this study and continue improving outage scheduling.

3.4.2.5 Communication and transparency

SPP recognizes relationships as a key element of successful operation of the bulk electric grid. Email distribution lists are a way SPP disseminates information quickly to appropriate stakeholders. SPP has implemented the Generator Outage Task Force recommendation of distribution lists for generator operators and owners to improve communication and transparency for items such as generation assessment process and the outage coordination methodology.

3.4.2.6 Pipeline availability

Gas generator outages may be the result of natural gas pipeline maintenance. Generally, the natural gas industry takes pipeline outages during its low demand period, which is typically the summer. These pipeline outages often coincide with peak annual electric demand. Specifically, resources with interruptible service often experience interruptions. Additionally, the natural gas industry can experience low supply and high demand scenarios during winter weather events. Pipelines can charge shortage prices, or stop filling nominations made after the timely cycle. Even firm gas can be interrupted during shortages or limited deliverability. A secondary fuel source and/or a stored fuel source tends to be more dependable than firm gas. Incentives are insufficient to change behavior for these predictable generation shortages. Rules should measure dependability and availability of the generation fleet and incentivize sufficient procurement of firm natural gas service as well as investment in secondary and/or stored fuel sources for capacity resources.

Toward this end, SPP and its stakeholders are making progress. The Improved Resource Availability Task Force (IRATF) was created to address fuel assurance and resource availability policies recommended from the Comprehensive Review of SPP's Response to the February 2021 Winter Storm report.[103] Final revision requests addressing fuel supply and dual-fuel capability are currently scheduled to be completed in September 2023. The MMU supports revisions that properly incent investment in these reliability attributes.

[103] https://spp.org/documents/65037/comprehensive%20review%20of%20spp's%20response%20to%20the%20feb.%202021%20winter%20storm%202021%2007%2019.pdf

3.4.2.7 Fuel procurement

Although SPP and market participants made adjustments to the day-ahead market commitment schedule through the stakeholder process, natural gas timely nominations are still due prior to market participants receiving their commitment schedule.[104] Depending on the pipeline's capacity and the type of service the gas generator has, this could have multiple undesired consequences.

First, a market participant could opt not to procure fuel without a day-ahead commitment. If the generator receives a day-ahead commitment or a reliability unit commitment, the market participant will likely pay a premium to procure fuel in a non-timely cycle. Additionally, at times of low pipeline capacity, non-timely cycle purchases are more likely to be curtailed. In this case, without a secondary fuel source or backup fuel, the market participant may have to buy back its day-ahead position at real-time prices and/or pay make-whole distribution charges. The MMU does not accept mitigated offers that include the generator owner's risk of premiums for non-timely procurement of fuel.

Second, a market participant could opt to procure fuel without a day-ahead commitment. If the generator does not receive a day-ahead commitment or a reliability unit commitment, the market participant could be charged natural gas fees, typically referred to as parking fees in dollars per MMBtu. The parking fees are generally assessed per day until the fuel is moved from the pipeline.

Rules should incentivize procurement of the most reliable lowest cost natural gas service, firm timely natural gas service, when appropriate, as well as investment in secondary and/or stored fuel sources for capacity resources. The Improved Resource Availability Task Force addressed several initiatives put forth by SPP and the MMU in this area in 2022. This included looking into the value of requiring firm fuel contracts to ensure reliability and into possible gas-electric coordination. However, their efforts to date have not translated into any proposed policy or operational changes.

[104] Docket No. ER19-2681.

4 MARKET PRICES AND COSTS

This chapter covers market prices and costs in the SPP market, along with related metrics on negative prices, make-whole payments, and long-run price signals for investment. Highlights of this chapter include:

- Average gas price for 2022 at the Panhandle Eastern hub was $5.83/MMBtu, up 70 percent from 2021 at $3.44/MMBtu with February excluded. Comparing to the full 2021 year, the average gas price was up 18 percent from 2021.

- The day-ahead market price for 2022 averaged $48/MWh, an increase of 80 percent from $27/MWh in 2021 with February excluded. Had February been included, the full year price for 2021 was $63/MWh.

- The real-time market price was $43/MWh for 2022, up 75 percent from $25/MWh in 2021 with February excluded. Had February been included, the full year price for 2021 was $37/MWh.

- The frequency of negative priced intervals decreased by eight percent in the day-ahead market and increased by three percent in the real-time market over 2021. Over 15 percent of all asset owner intervals in the real-time market had negative prices, slightly up from just under 15 percent in 2021. Just above seven percent of the day-ahead asset owner intervals had negative prices, down from almost eight percent in 2021. The MMU remains concerned about the frequency of negative price intervals. Negative prices may not be a problem in and of themselves, however, they do indicate an increase in surplus energy on the system and/or an increase in available low-cost generation.

- Day-ahead make-whole payments for 2022 totaled $173 million compared to $75 million in 2021 with February excluded, a 130 percent increase. Much of the increase can be attributed to higher gas prices in 2022. The 2021 day-ahead make-whole payments for the full 2021 year totaled $980 million.

- Reliability unit commitment make-whole payments totaled $292 million for 2022, up 152 percent from $116 million 2021 with February excluded. Like day-ahead make-whole payments, much of the increase can be attributed to higher gas prices in 2022. The 2021 reliability unit commitment make-whole payments for the full 2021 year totaled $354 million.

- For 2022, one resource received $19 million dollars in make-whole payments, and in total only four resources received over $10 million in make-whole payments for the year. On a market participant level, 12 participants received over $10 million in make-whole payments, accounting for 89 percent of total make-whole payments.

- Total revenue neutrality uplift for 2022 was $548 million, up 92 percent from 2021, and up ten-fold from $54.7 million in 2020. The majority of the increase can be attributed to the real-time congestion component of revenue neutrality uplift, which was $653 million in 2022, an increase of 189 percent from $226 million in 2021. The SPP RTO is continuing to study this increase in revenue neutrality uplift.

- Historically, revenues have been insufficient to support the cost of new entry of scrubbed coal, advanced combined-cycle, advanced combustion turbine generation, wind, and solar photovoltaic since the inception of the Integrated Marketplace. (An exception was 2021 due to increased revenue because of the February winter storm.) This analysis shows that, in 2022, only wind resources would be able to recover their cost of entry.

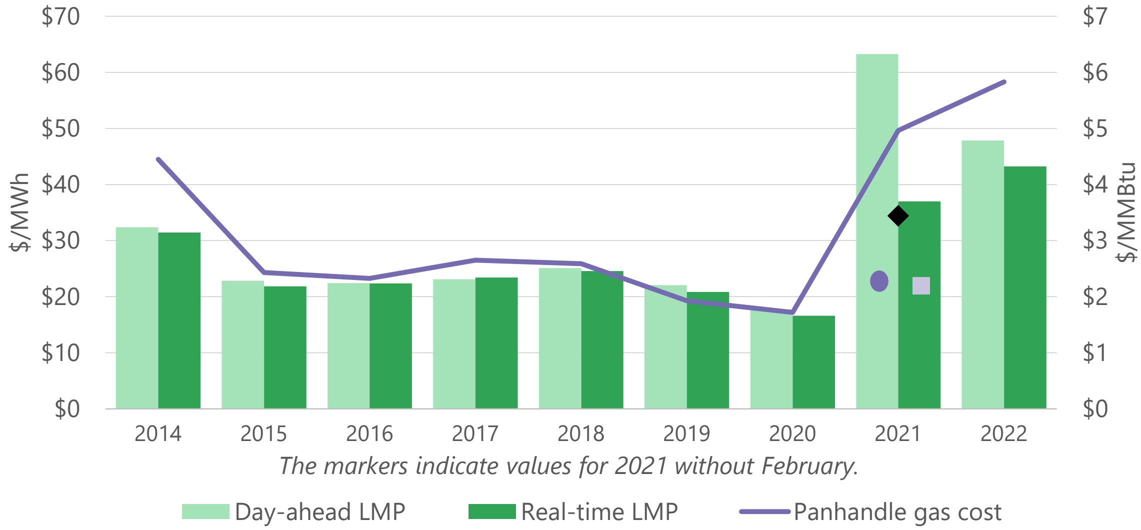
4.1 MARKET PRICES AND COSTS

This section reviews market prices and costs by focusing on the energy market and fuel prices, price volatility, negative prices, operating reserve prices, and market settlement results. Overall, annual energy prices were up from previous years in both the day-ahead and real-time markets. This increase can be mostly attributed to two main contributors, the February winter weather event and the increase in fuel prices—primarily gas but also coal—even with an increased share of wind in total generation in 2021. Furthermore, the 2021 percentage of negative price intervals saw a substantial increase in the both markets, when compared to previous years.

4.1.1 ENERGY MARKET PRICES AND FUEL PRICES

Figure 4–1 below compares day-ahead and real-time prices[105] in SPP between 2014 and 2022[106] with natural gas prices. The markers in the chart below indicate 2021 averages with February excluded, thus removing the impact from the February 2021 winter weather event.

Figure 4–1 Energy price versus natural gas price, annual



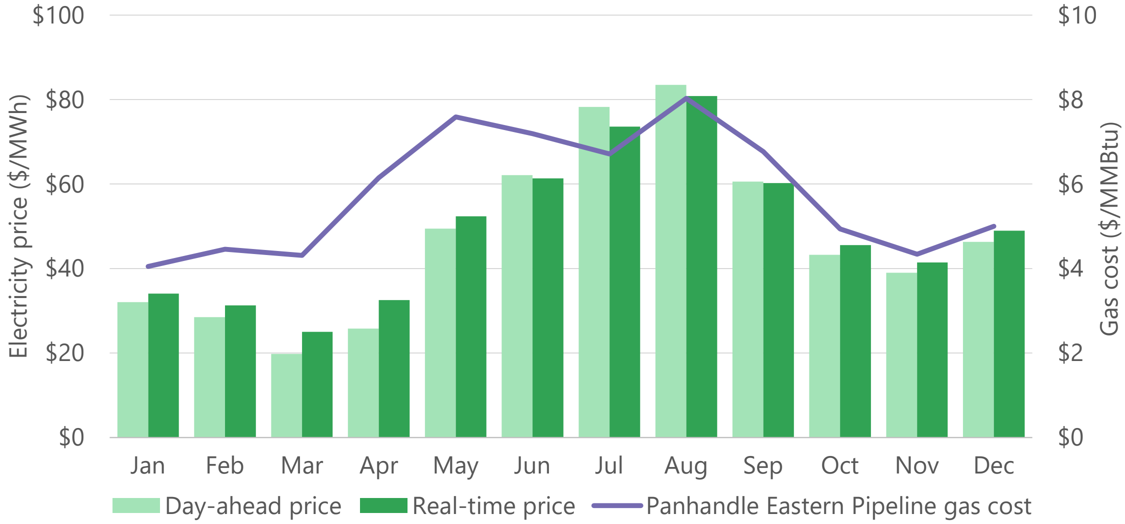
Historically, electric market prices have followed the cost of natural gas. The winter weather event in February 2021 had a big impact on the energy market prices for that year driven by extremely high natural gas prices. When excluding February (values shown for 2021 on the chart above indicated with markers), the average gas cost at the Panhandle hub increased by 69 percent from $3.44/MMBtu for 2021 to $5.83/MMBtu for 2022. The average hourly day-ahead price increased by 80 percent from $26.62/MWh in 2021 (excluding February) to $47.86/MWh in 2022 and the real-time price increased by 75 percent from $24.64/MWh in 2021(excluding February) to $43.24/MWh in 2022.

Interestingly, the 2022 real-time average price was still above the 2021 average price, even without excluding February 2021. In addition to increasing gas prices affecting the increase in prices from 2021 to 2022, both load and congestion increased in 2022, which also contributed to the price increase.

[105] Day-ahead and real-time prices shown are calculated using the average of the SPP North and SPP South hub prices for each period.
[106] The 2014 real-time average includes two months of prices from the Energy Imbalance Service market and 10 months of prices from the Integrated Marketplace.

Figure 4–2 illustrates day-ahead and real-time energy prices, as well as gas costs, on a monthly basis for 2022.

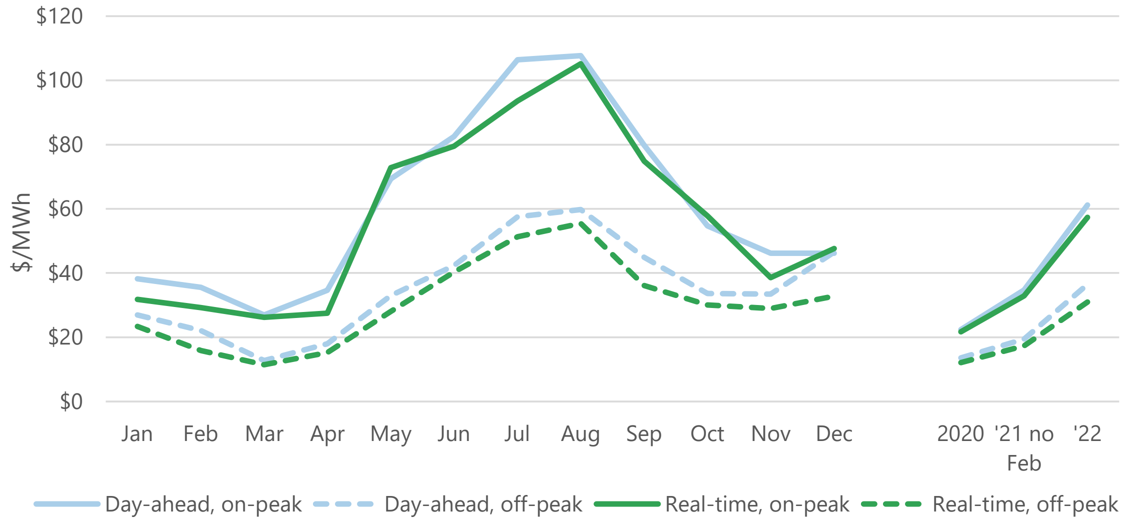
Figure 4–2 Energy price versus natural gas cost, monthly



On a monthly basis in 2022, natural gas prices were lowest in January at $4.05/MMBtu and highest in August at $8.03/MMBtu. Electricity prices were lowest in March due in part to low gas prices ($4.31/MMBtu, the second lowest monthly average for the year) and abundant wind generation, and highest in August due to high gas prices and high load.

Additionally, energy prices can be broken down into on-peak and off-peak prices as shown in Figure 4–3. As can be expected, on-peak prices are consistently higher than off-peak prices.

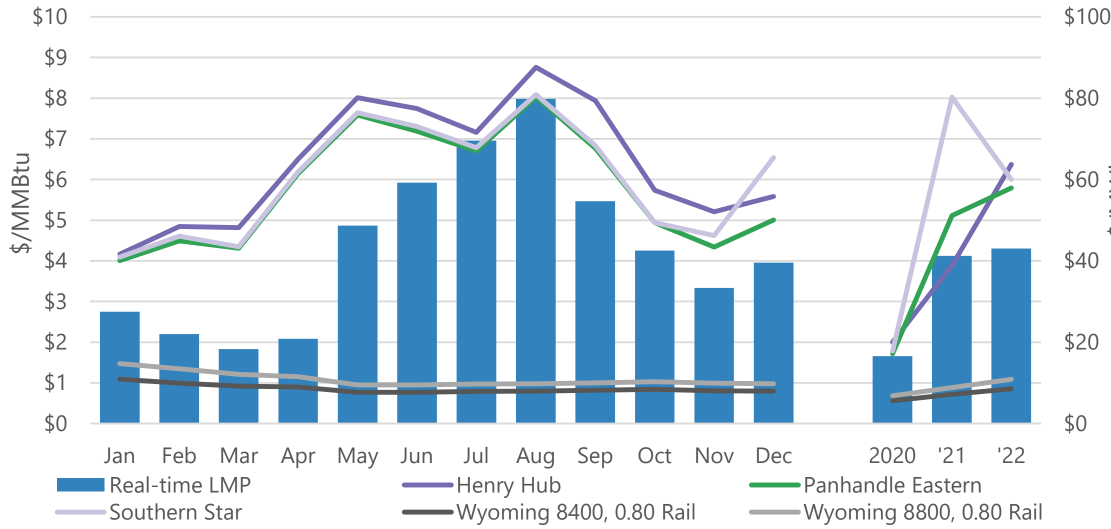
Figure 4–3 Energy price, on-peak and off-peak



Historically, on-peak prices tend to average about $15/MWh higher than off-peak prices, in both day-ahead and real-time. However, in 2022, the average spread between on-peak and off-peak prices grew to a difference of $25/MWh. Summer months saw the largest spread in both the day-ahead and real-time, approaching $50/MWh. The differences between on-peak and off-peak prices can be mostly attributed to lower loads and a higher percentage of lower cost wind generation in off-peak hours.

Changes in gas prices have historically had the highest impact on electricity prices compared to other fuels. This is because the short-run marginal costs of coal-fired generation historically have been cheaper than natural gas-fired generation. The energy pricing continued to trend with the gas prices throughout the year. Figure 4–4 compares various fuel price indices with real-time prices.

Figure 4–4 Fuel price indices and energy prices



This figure shows that regional natural gas prices increased significantly from 2020 to 2021 and stayed high in 2022, on an annual basis. The Southern Star gas price averaged $6.00/MMBtu for 2022, while the Panhandle Eastern Pipeline averaged $5.79/MMBtu, and the Henry Hub was $6.37/MMBtu for 2022.[107] Henry Hub and Southern Star average prices were slightly higher than Panhandle Eastern average prices in 2022. Price differences between Henry Hub and Panhandle Eastern continued to trend close, averaging $0.28/MMBtu in 2020, -$1.24/MMBtu in 2021[108] and $0.37/MMBtu in 2022. This difference is likely driven by pipeline constraints in the Texas and Oklahoma area. Often, natural gas is a byproduct of oil drilling. Natural gas production has continued to outpace takeaway capacity in this area, with incremental production volumes quickly inundating any available space in the pipelines and keeping supply-area prices at discounts compared to other hubs.

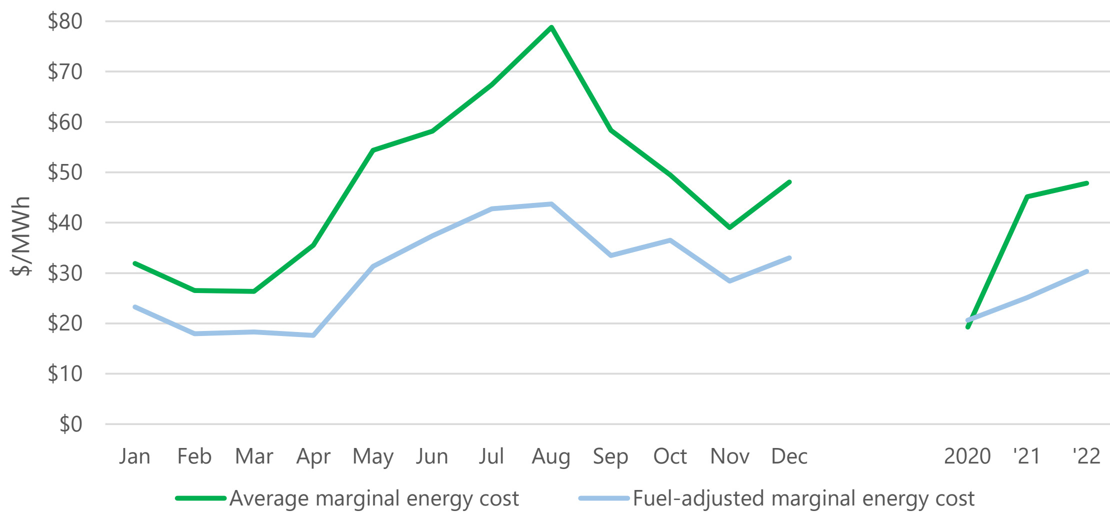
Coal prices have remained relatively stable since 2016, but saw an increase in 2021, and the trend continued during the first six months of 2022.[109] The price for 8,400 Btu/lb. at the Powder River Basin increased from $0.72/MMBtu in 2021 to $0.86/MMBtu (up 20 percent) in 2022, and the 2021 price for 8,800 Btu/lb. was $1.09/MMBtu up twenty cents from the 2021 average. The increase in coal prices in 2022 can likely be attributed to a shortage of supply. After several years of declining coal demand, the demand for coal, coinciding with the increase in natural gas

[107] The relevant natural gas prices for the SPP market are those of the Henry Hub, the Panhandle Eastern Pipeline (PEPL), and Southern Star. These prices do not include transport costs.
[108] This is due to the high gas price at Panhandle Eastern in February 2021.
[109] Platt's coal prices are exclusive of transport costs. Transportation costs can have a significant impact on a coal resource's short-run marginal costs, and may often exceed commodity costs.

prices, increased. Many coal suppliers were unable to quickly respond to the increase in demand, contributing to the increase in prices and reduced available supply. In addition, unit sets of coal trains had decreased availability, thus decreasing the ability to transport coal even when available from suppliers.

Adjusting for changes in fuel prices helps to identify the underlying changes in electricity prices from other factors.[110] Figure 4–5 below adjusts the marginal energy cost for changes in fuel costs.[111]

Figure 4–5 Fuel-adjusted marginal energy cost



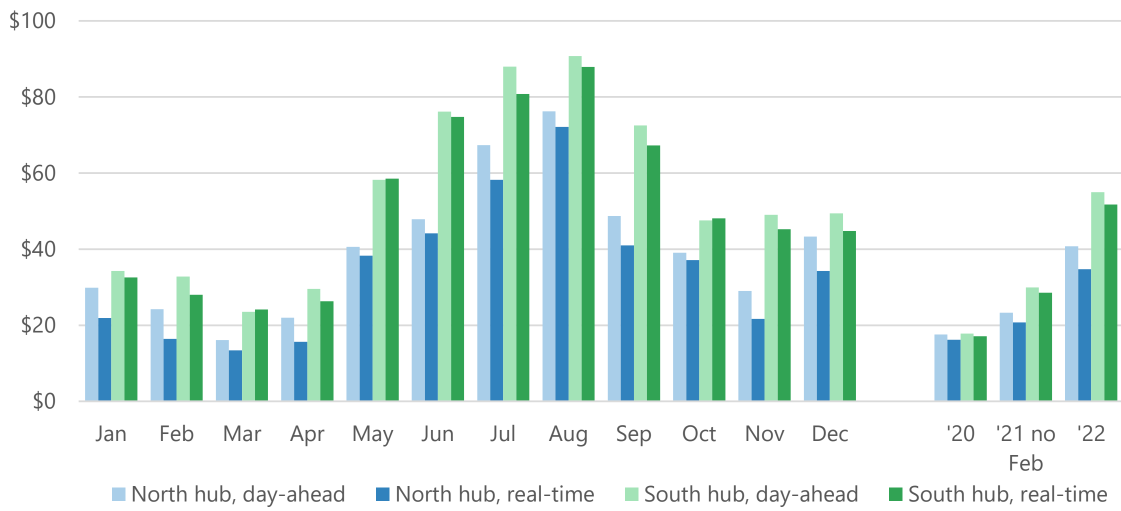
As the figure shows, fuel-adjusted marginal energy costs were significantly lower in 2022 compared to nominal marginal energy costs[112] every month of the year, especially during the summer months, which was due to the significantly high natural gas and coal prices in 2022. On average, the natural gas prices increased 29 percent and coal prices increased 16 percent in 2022 from 2021. There were some increases in both fuel-adjusted marginal energy cost and

[110] In addition to fuel, other variables also affect real-time prices. These variables include seasonal load levels, transmission congestion, outages, scarcity pricing, and wind-powered generation.
[111] The marginal energy component (MEC) indicates the system-wide marginal cost of energy (excluding congestion and losses). Fluctuations in marginal fuel prices can obscure the underlying trends and performance of the electricity markets. Fuel price-adjusted marginal energy costs is a metric to estimate the price effects of factors other than the change in fuel prices, such as changes in load or changes in supply, or heat rate (efficiency) improvements. It is based on the marginal fuel in each real-time five-minute interval, when indexed to the three-year average of the price of the marginal fuel during the interval. If multiple fuels were marginal in an interval, weighted average marginal energy costs are based on the dispatched energy of different fuel types.
[112] Nominal marginal energy costs represent the non-fuel adjusted marginal energy costs.

nominal marginal energy cost when compared to 2021 outcomes, with the respective annual increase being 21 percent and six percent. The largest differences between nominal and fuel-adjusted prices occurred in August, where the fuel-adjusted energy cost was roughly $35/MWh lower than the real-time energy cost, which was due to high natural gas prices and opportunity cost adders (beginning in August) added to coal resources due to coal transportation limitations. Fuel-adjusted marginal energy costs were higher in 2022 compared to 2021 when including the February winter weather event. The higher energy prices seen in 2022 were mainly contributed by the high fuel prices and transportation limitations, and also result from the high demand in 2022.

SPP has two pricing hubs: the SPP North hub and the SPP South hub. The SPP North hub represents a portion of pricing nodes in the northern part of the SPP footprint, generally in Nebraska. The SPP South hub represents a portion of pricing nodes in the south-central portion of the footprint, generally in central Oklahoma. Figure 4–6 shows the average day-ahead prices and real-time prices at the two SPP market hubs.

Figure 4–6 Hub prices, day-ahead and real-time



Typically, the SPP South hub prices exceed the SPP North hub prices. This pattern had narrowed in 2020, with just $0.23/MWh of average price separation between day-ahead average prices and $0.9.3/MWh separation between the real-time average prices. This spread has increased to $14.18/MWh in the day-ahead and $16.98/MWh in the real-time in 2022. The increased separation in 2022 coincides with the increase in natural gas costs and the increase in congestion. The general pattern of higher prices in the south and lower in the north is primarily due to fuel mix and congestion. Coal, nuclear, and wind are the dominant fuels in the north and west. Gas generation represents a much larger share of the fuel mix in the south and east, which was much more impacted by the much higher than normal gas prices.

On a monthly basis, South hub prices almost always exceed Norh hub prices. Starting in July 2017, months started to appear where the North hub real-time average price exceeded the South hub real-time average price. In 2021, the North hub only exceeded the South hub in the month of December in the day-ahead market, and only by a few cents.

It is important to understand how SPP's day-ahead prices compare to prices in other regions. Average on-peak, day-ahead prices for the SPP hubs, as well as other RTO hubs in the region are shown in Figure 4–7.

Figure 4–7 Comparison of RTO/ISO average on-peak, day-ahead prices

	2020	2021	2021 (no Feb)	2022
SPP North hub	$21	$79	$31	$53
SPP South hub	$22	$90	$38	$69
ERCOT West hub	$24	$150	$37	$37
ERCOT North hub	$26	$155	$42	$76
MISO Arkansas hub	$22	$42	$38	$69
MISO Louisiana hub	$24	$42	$40	$71
MISO Minnesota hub	$20	$44	$40	$55
MISO Texas hub	$27	$48	$40	$70
PJM Western hub	$23	$43	$43	$81

Average on-peak day-ahead prices climbed at both the North and South hubs of SPP, mostly due to higher natural gas prices throughout the year. If February 2021 prices are excluded, all of the other RTO/ISOs' day-ahead average hub prices at the SPP seams increased in 2022, with the exception of the ERCOT West hub. The MISO Minnesota hub price increased by 38 percent, while all of the other hubs increased anywhere from 71 percent to 88 percent. The price increases in each region can primarily be attributed to higher natural gas prices relative to prior years.

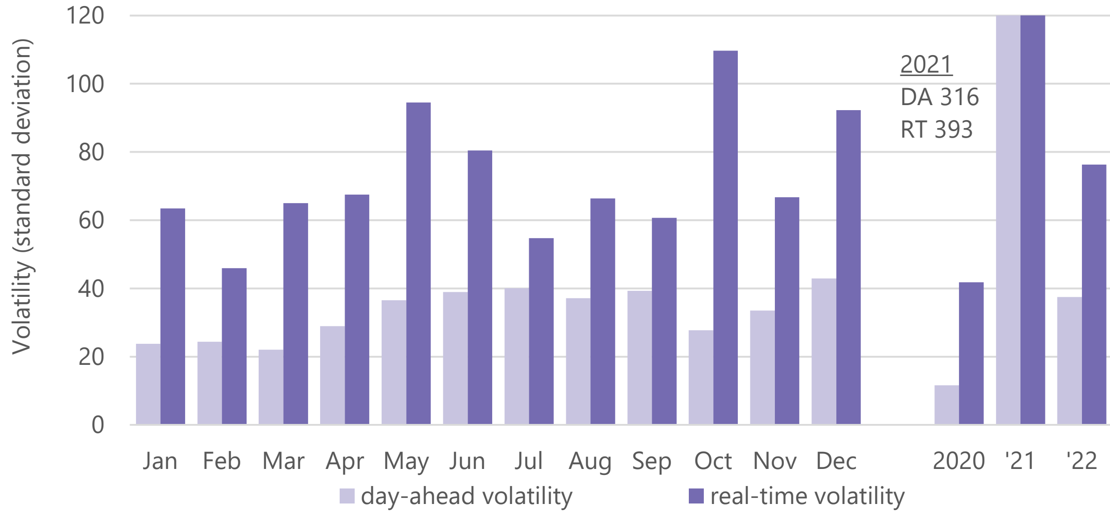
4.1.2 ENERGY PRICE VOLATILITY

Price volatility[113] in the SPP market is shown in Figure 4–8 below. As expected, day-ahead prices are much less volatile than those in real-time. The day-ahead market does not experience the

[113] Volatility is calculated as the standard deviation for prices received by load-serving entities in the SPP market. The standard deviation is calculated using hourly price in the day-ahead market and interval (five minute) price in the real-time market.

actual (unexpected) congestion and changes in load or generation found in the real-time market. Real-time volatility tends to peak in the spring and fall, roughly corresponding with times of higher wind and lower load, but can also peak during the summer months because of peak load conditions.

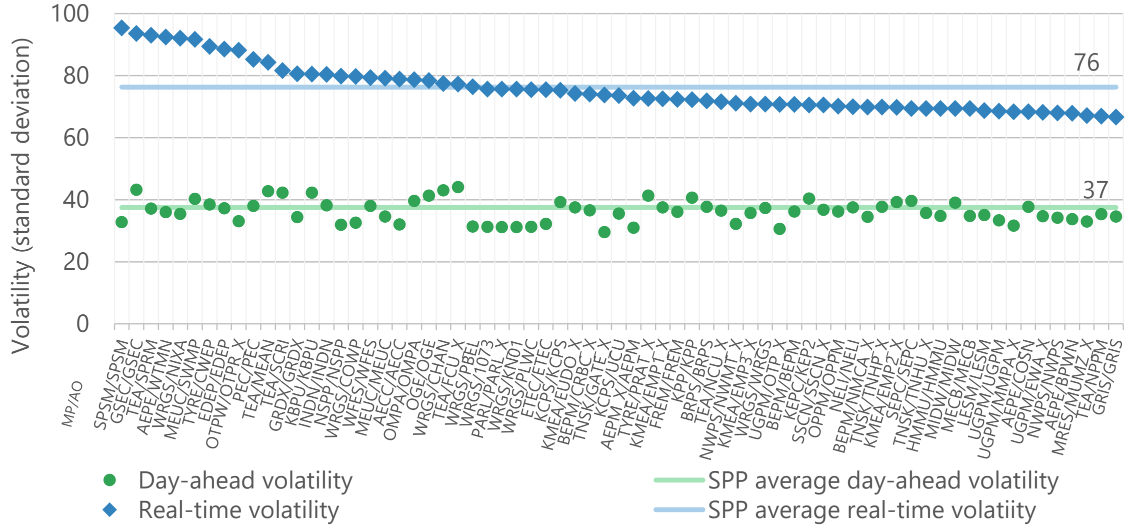
Figure 4–8 System price volatility



In 2022, volatility in both the day-ahead market and real-time market increased. Day-ahead volatility (standard deviation) for 2022 was 37; this is up from 12 in 2020. 2021 had extraordinarily high volatility due to the winter weather event. Real-time volatility was up as well, from 42 in 2020 to 76 in 2022. Much of the increased volatility can be attributed to increased congestion.

Price volatility varies across the SPP market footprint for asset owners primarily because of varying levels of congestion on the system, which is based on the layout of the transmission system and the distribution of the types of generation in the fleet. The volatility for the majority of asset owners is consistent with the SPP average in both the day-ahead and real-time markets as shown in Figure 4–10.

Figure 4–9 Price volatility by asset owner



Increased volatility was observed in certain geographic areas in 2022. Areas in Texas and southwest Missouri/SE Kansas had the highest price volatility in 2022, while the lowest volatility was found in Nebraska and the Integrated System.

4.1.3 DAY-AHEAD AND REAL-TIME PRICE CONVERGENCE

Price convergence between day-ahead and real-time prices is important, because the more day-ahead prices reflect real-time prices, the better unit commitment and positioning of resources occurs for real-time operations.

While average prices in the day-ahead and real-time markets have been close over the past several years, average prices can mask real-time volatility and underlying price differences. The averaging of price spikes, and in particular, high prices during periods of scarcity, drove real-time average prices up, closer to day-ahead prices. These short-term, transient price spikes can be attributed to limitations in ramping capability.[114]

In this section, underlying differences in prices after controlling for scarcity events are highlighted. This analysis shows that a significant volume of generation, particularly from wind resources, not cleared in the day-ahead market, drives down real-time prices.

[114] For further information on ramping issues, see Section 3.2.1.

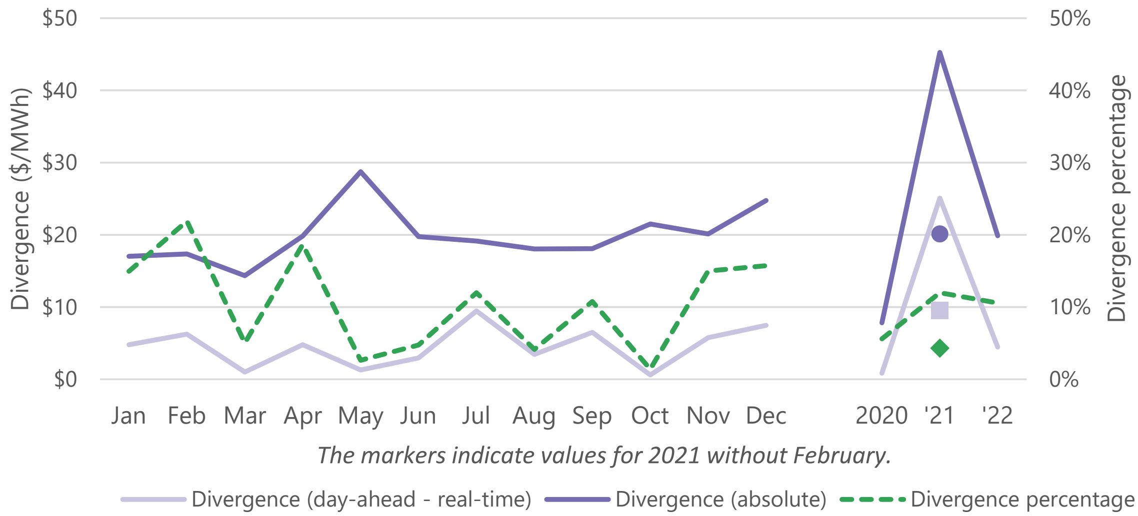
Many factors cause prices to diverge between the day-ahead and real-time markets. Some of these factors may include, but are not limited to:

- Day-ahead offers may include premiums to account for uncertainty in real-time fuel prices.[115]
- Load and wind forecast errors can cause differences in the real-time market results.
- Participants may not bid in all load or offer all generation in the day-ahead market.
- Modeling differences including transmission outages between the two markets.
- Generation outages or derates that were different in real-time than was anticipated in the day-ahead.
- Impacts from other RTOs, that were not anticipated, may affect the SPP real-time market.
- Changes in imports and exports from other systems in the real-time markets.
- Unanticipated weather changes affect the real-time markets.

Price divergence[116] between the day-ahead and real-time markets at the system level is shown in Figure 4–10 below. Market participants may be willing to pay a premium for more price certainty in in day-ahead market. This can result in higher prices in the day-ahead market. A large divergence between day-ahead and real-time prices may also indicate that actual conditions in the market do not match expected conditions. An extended period of a large variance between day-ahead and real-time prices may indicate a structural or design deficiency in the market.

[115] Additionally, Revision Request 239 allowed historic fuel cost uncertainty to be considered in the development of mitigated energy offers.
[116] Price divergence is calculated as the difference between day-ahead and real-time prices, using system prices for each five-minute (real-time) or hour (day-ahead) interval. The absolute divergence is calculated by taking the absolute value of the divergence for each interval.

Figure 4–10 Price divergence



Average absolute divergence for 2022 was $19.89/MWh, this is down from $45.26/MWh in 2021. However, 2021 figures are skewed heavily by the winter weather event. The average absolute divergence during 2021 when excluding February was $20.12/MWh, which then shows absolute divergence has dropped by a slight amount ($0.23/MWh) from 2021 (excluding February) to 2022. Historically, absolute divergence has averaged around $10 per month up through 2020. Much of increased deviation over the last two years can be attributed to unplanned and extended transmission outages, along with other factors. The under-clearing of renewable resources and short-term ramping limitations also contribute to increased price divergence. It was hoped that implementation of the ramping product on March 1, 2022 would also have a positive effect on this divergence; however, this has not been the case to date. Moreover, the MMU has recommended many improvements resulting from the February winter weather event, and recommends that additional work be done to improve price divergence related to under-clearing of renewable generation in the day-ahead market.

Figure 4–11, below, shows the marginal energy costs for both the day-ahead and real-time markets during on-peak hours after controlling for scarcity events.[117] Figure 4–12 shows the same information, but for off-peak hours.

[117] These numbers reflect only hours where scarcity demand curves where not applied for any interval during the hour. SPP uses scarcity demand curves for intervals when ramp or capacity requirements cannot be met through dispatch. Scarcity demand curves are discussed in detail in Section 3.2.1.

Figure 4–11 On-peak marginal energy prices, excluding scarcity hours

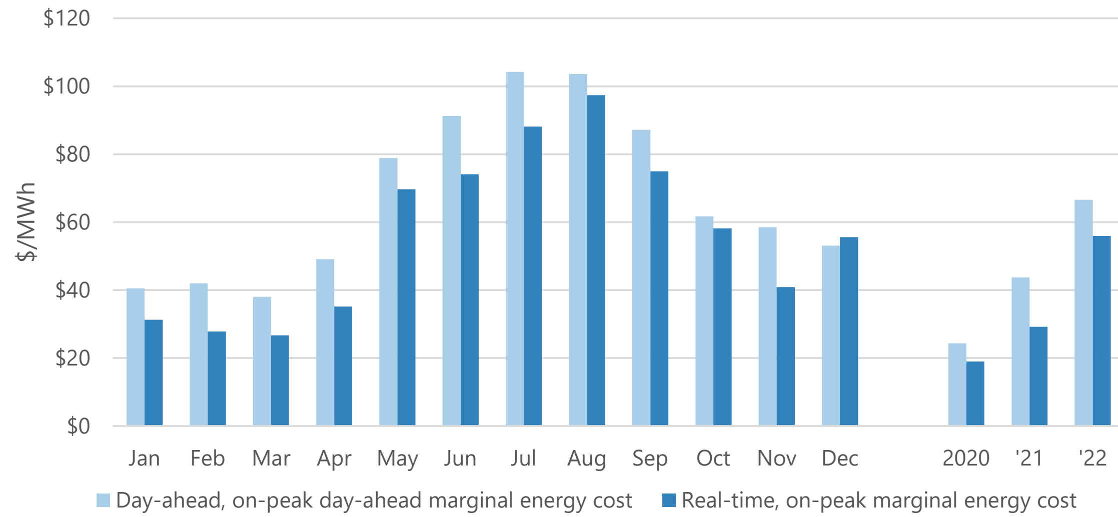
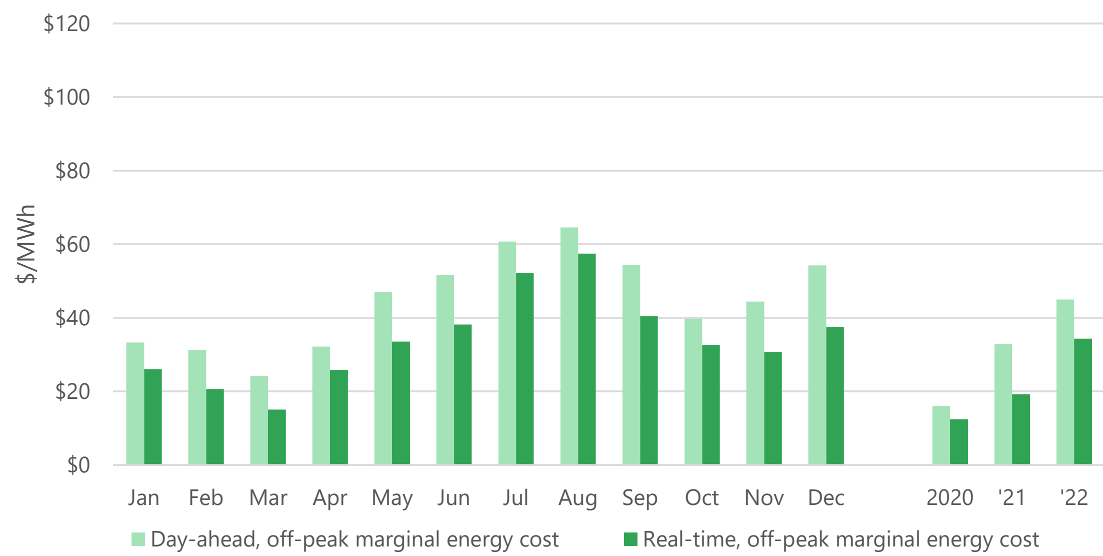


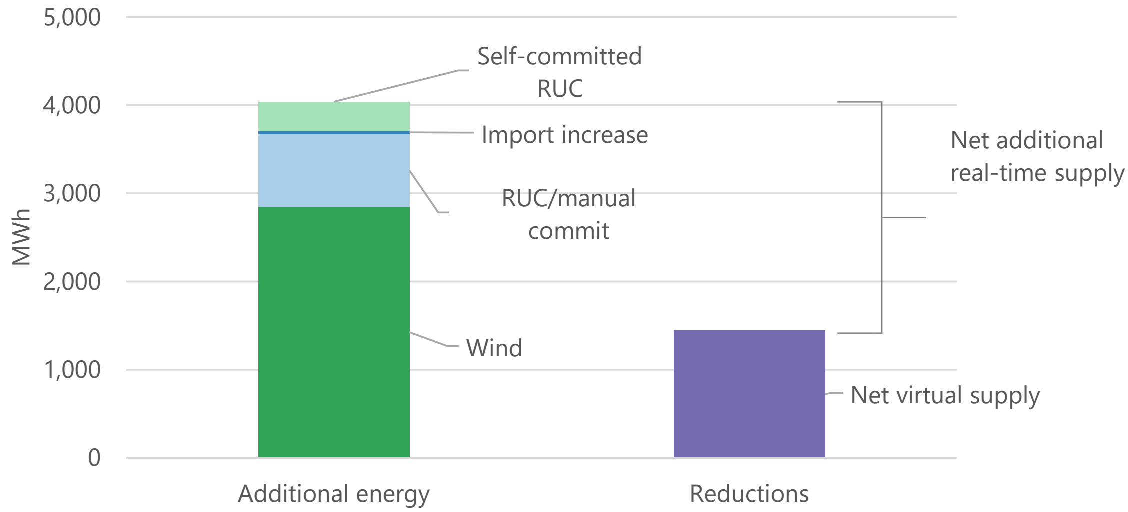
Figure 4–12 Off-peak marginal energy prices, excluding scarcity hours



The marginal energy cost is one of three components that factor into locational marginal prices and represents the marginal cost to provide the next increment of dispatch absent losses and congestion. Day-ahead prices are generally at a premium when compared to real-time prices (excluding scarcity pricing), particularly in the off-peak hours. Also of note is that the marginal energy prices follow the same monthly trend as gas prices.

Figure 4–13 shows average hourly incremental differences in megawatts produced between the real-time and day-ahead market in 2021.

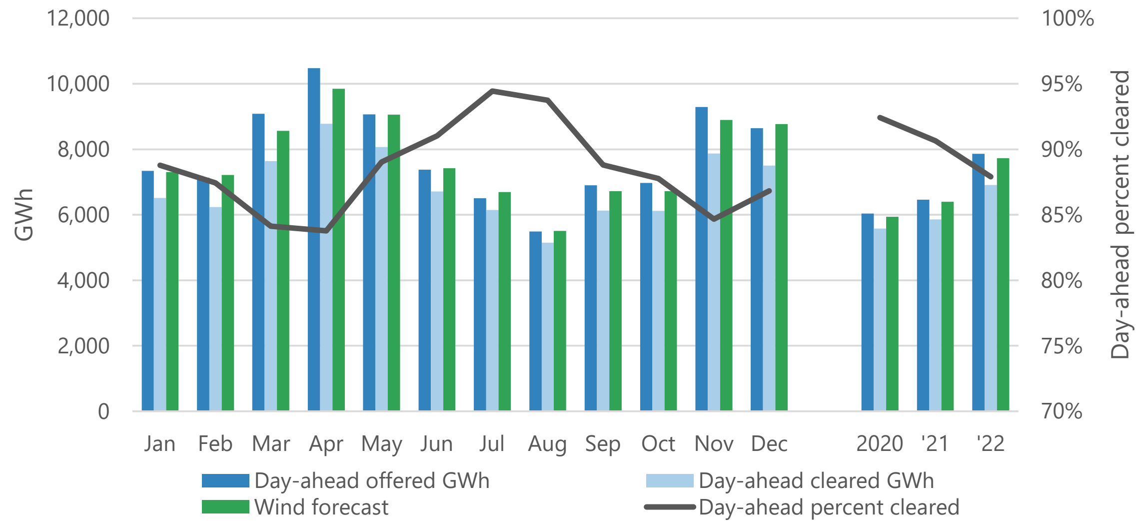
Figure 4–13 Average hourly real-time generation incremental to day-ahead market



Wind generation made up 71 percent of the 4,038 MW of incremental real-time generation in 2022 (up from 70 percent in 2021 and 63 percent in 2020), with an hourly average of 2,849 MW of additional generation in real-time. Self-committed generation accounted for an additional 326 MW and reliability unit committed or manually committed generation averaged 821 MW. While SPP is a net exporter in both the day-ahead and real-time markets on average, it sees an average hourly increase of 42 MW in real-time market net imports compared to the day-ahead. This results in additional capacity committed in day-ahead not necessarily needed in real-time. Averaging 1,445 MW an hour, net virtual positions helped to offset the additional generation, but only accounted for about 36 percent of the difference for the year. This is down significantly from the 1,936 MW (51 percent) in 2021 and 1,214 MW (44 percent) in 2020. Netting out the changes in virtual transactions, there was 2,593 MW of additional net supply in real-time in 2022.

Figure 4–14 shows the difference between the day-ahead offered wind generation and the day-ahead cleared wind generation. The wind forecast figure is derived from the mid-term wind forecast, which is created one day prior to the operating day.

Figure 4–14 Day-ahead wind offered versus cleared



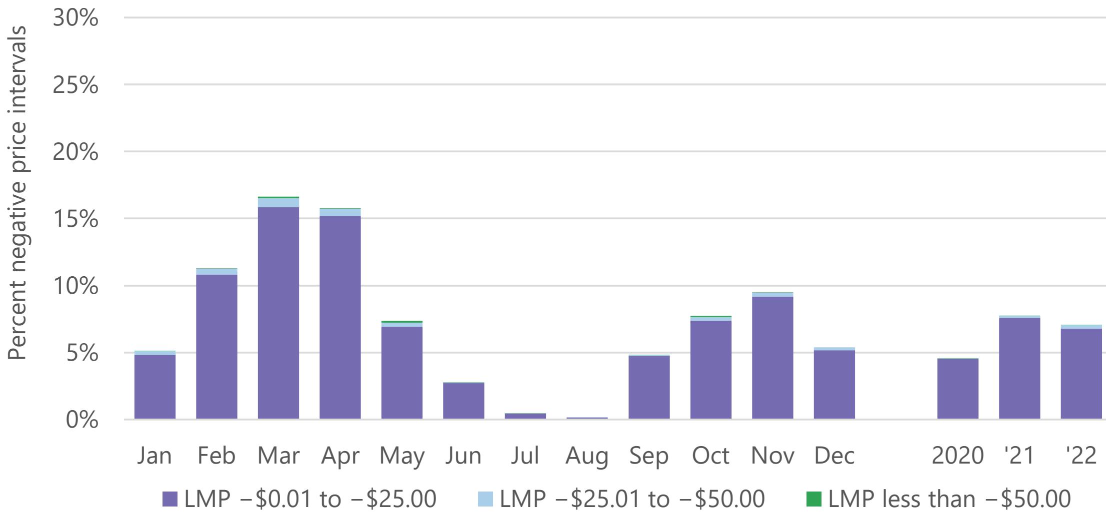
In 2022, 88 percent of the wind offered in the day-ahead cleared. This is down from the 91 percent in 2021 and the 92 percent in 2020. In 2022, 102 percent of forecasted wind was offered into the day-ahead, this is consistent with 101 percent in 2021 and 102 percent in 2020. However, even though wind resources are generally offering in close to full forecasted capacity to the day-ahead, a portion of this is at offer levels that exceed prevailing prices and thus does not clear the market. Typically, wind will clear all of the megawatts that are physically offered into the day-ahead market if the economic offers are consistent with real-time offers. The MMU observed that almost all wind megawatts offered into the day-ahead market and not cleared had higher economic offers in the day-ahead market than real-time.

Systematic under-clearing of wind resources in the day-ahead market can contribute to distorted price signals, suppressing real-time prices, and affecting revenue adequacy. Variable energy resources are generally able to produce close to a forecasted amount. Therefore, the MMU continues to recommend that SPP and its stakeholders address this issue through market incentives and rule changes that focus on market inefficiencies associated with under-clearing of variable energy resources in the day-ahead market based on forecasted supply. These rule changes could focus on changing incentives for wind resources, or alternatively encouraging virtual transactions.

4.1.4 NEGATIVE PRICES

With the prolific growth of wind generation in the SPP market, the incidence of intervals with negative prices continues to be a growing concern. The frequency of negative price intervals, however, decreased slightly in the day-ahead market from 2021 to 2022, as shown in Figure 4–15.

Figure 4–15 Negative price intervals, day-ahead, monthly

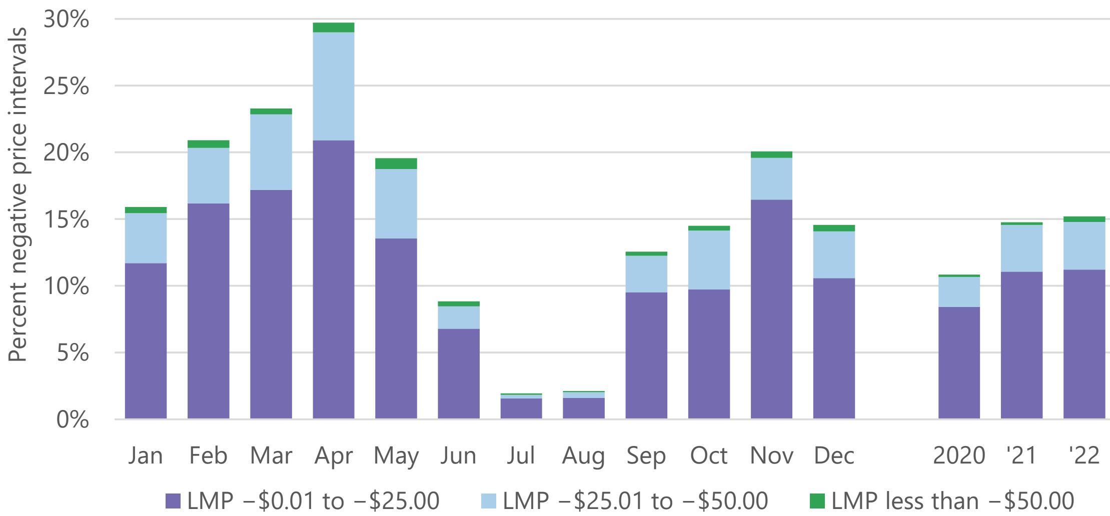


In 2022, 7.1 percent of all asset owner intervals[118] in the day-ahead market had prices below zero, as shown in Figure 4–15. This is down from 7.7 percent of all intervals in 2021 and up from 4.6 percent in 2020. March had the highest percentage of negative intervals in the day-ahead market, at nearly 17 percent

Historically, negative price intervals in the real-time market occur around two times more frequently than in the day-ahead market. While negative price intervals increased slightly in the day-ahead market, negative price intervals increased slightly in the real-time market, as shown in Figure 4–16.

[118] Asset owner intervals are calculated as the number of asset owners serving load that are active in an interval. For example, if there 60 asset owners active in one five-minute interval throughout an entire 30-day month, the total asset owner intervals would be 518,400 for the month (60 asset owners * 288 intervals per day * 30 days).

Figure 4–16 Negative price intervals, real-time, monthly

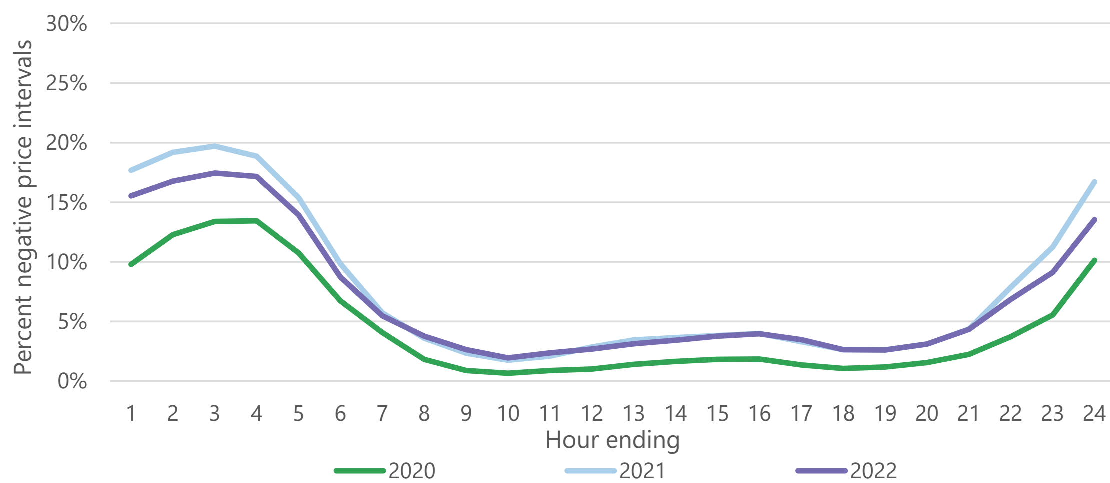


The frequency of negative price intervals in the real-time market was 15.2 percent of 2022 intervals, up slightly from 14.8 percent in 2021. The slowing increase in negative price intervals can partially be attributed to a slowing of the addition of new wind resources in the SPP market.

Negative prices in the day-ahead market were almost exclusively between −$0.01/MWh and −$25/MWh, with only four percent of intervals with negative prices having prices lower than −$25/MW. However, in the real-time market 25 percent of intervals with negative prices had prices lower than −$25/MWh.

Additionally, occurrences of negative prices in the day-ahead market are most prevalent in the overnight, low-load hours as shown in Figure 4–17.

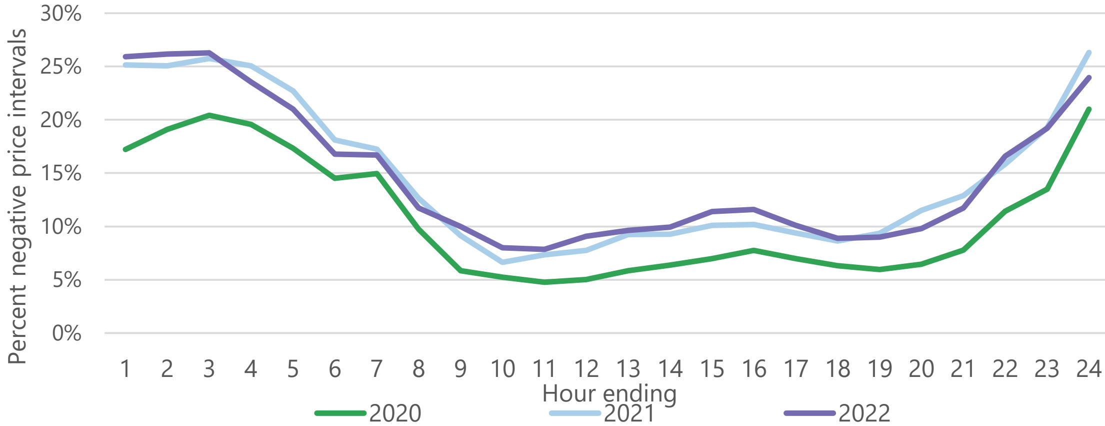
Figure 4–17 Negative price intervals, day-ahead, by hour



This figure shows that the day-ahead negative price intervals in 2022 during overnight hours are higher than the 2020, but lower than 2021. Higher loads in 2022 are one of the main drivers for the lower day-ahead price intervals during the year.

Negative price intervals in the real-time market (see Figure 4–18) follow the same pattern as the day-ahead market with most negative price intervals occurring in the overnight, low-load hours.

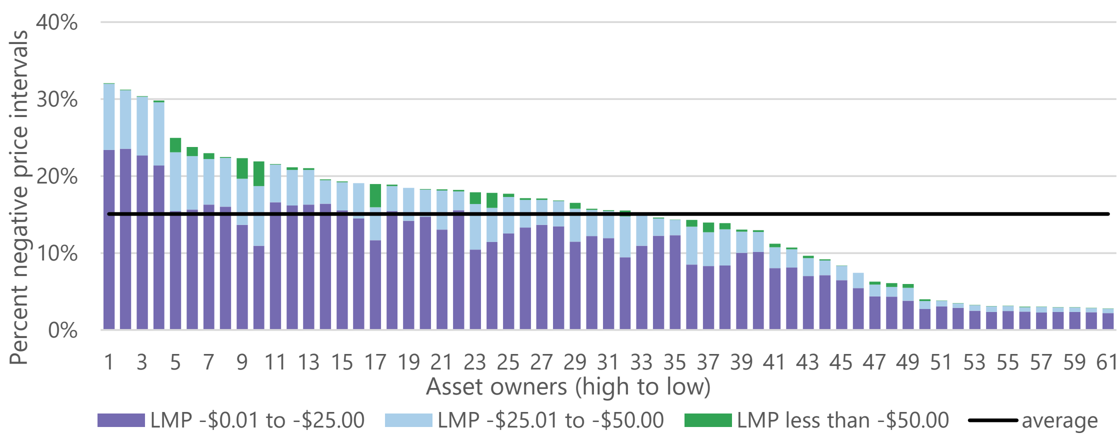
Figure 4–18 Negative price intervals, real time, by hour



As shown above negative price intervals in the real-time market occur much more frequently than in the day-ahead market, with a 2022 peak of over 26 percent of intervals in real-time in the third hour of the day, compared to a peak of just under 20 percent in day-ahead. During 2022, the first five hours and last hour of the day experienced negative prices over 20 percent of the time, which was the same as 2021.

At the asset owner level (for those serving load), the distribution of negative price intervals during 2021 clustered around the footprint average, as shown in Figure 4–19.

Figure 4–19 Negative price intervals, real-time, by asset owner



In 2022, 33 of 61 asset owners with load experienced negative prices in more than 15 percent of intervals. This is a substantial increase from 2020, where only nine asset owners experienced negative prices in excess of 15 percent of intervals. The asset owner with the highest percentage of intervals with negative prices had 32 percent of intervals with negative prices; this is up from 2021 when the highest percentage was 28 percent of all intervals.

The MMU remains concerned about the frequency of negative price intervals. Negative prices may not be a problem in and of themselves, however, they do indicate an increase in surplus energy on the system. This is exacerbated by the practice of self-committing of resources and manual commitments for capacity. In the SPP market where there is an abundance of capacity and significant levels of renewable resources, negative prices can occur when renewable resources need to be backed down in order for traditional resources to meet their committed generation. Moreover, unit commitment differences, due to under-clearing of wind resources in the day-ahead market and then producing more in the real-time market, can create differences in the frequency of negative price intervals between the day-ahead and real-time markets. This disparity between the markets negatively impacts the efficient commitment of resources.

As more wind generation is anticipated to be added over the coming years, the frequency of negative prices has the potential to increase. Negative price intervals in the day-ahead highlight the need for changes in market rules to address self-committing of resources in the day-ahead market and addressing differences in supply between day-ahead and real time. These issues are discussed further in Chapter 7.

4.1.5 OPERATING RESERVE MARKET PRICES

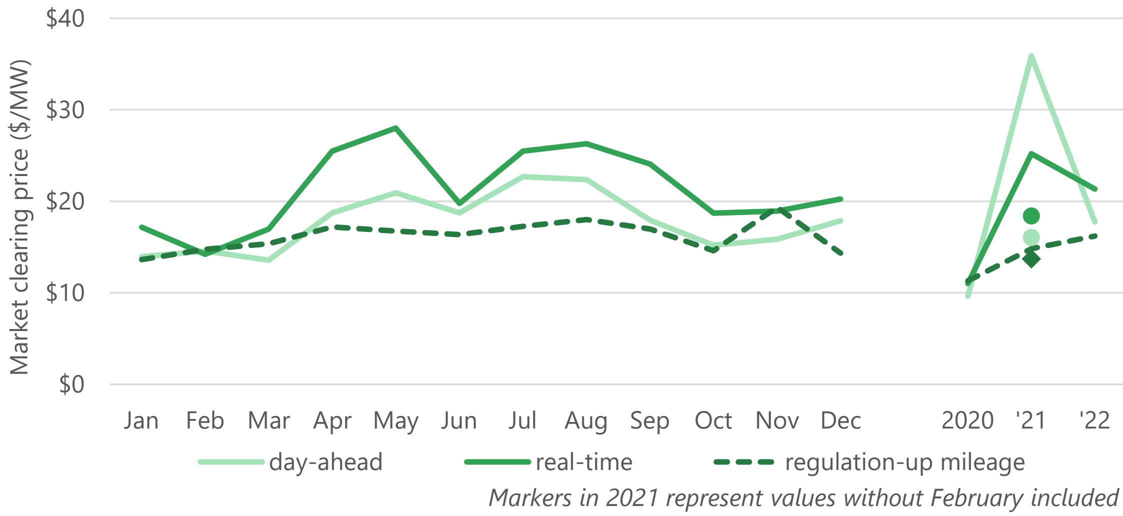
Operating reserve is made up of four products: (1) regulation-up, (2) regulation-down, (3) spinning reserve, and (4) supplemental reserve. The regulation products are used to ensure the amount of generation matches load on a subinterval basis. Generators respond to regulation instructions in seconds. Spinning and supplemental products are reserved for contingency situations and respond to instructions within ten minutes.

In addition, regulating units are compensated for mileage costs incurred when moving from one set point instruction to another. The market calculates a mileage factor for both products each month that represents the percentage a unit is expected to be deployed compared to what it cleared. If a unit is deployed more than the expected percentage, then the unit is entitled to reimbursement for the excess at the regulation mileage marginal price. If the unit is deployed less, it must buy back its position at the real-time mileage clearing price.

Generally speaking, regulation-up and regulation-down usually have the highest market clearing prices. Supplemental reserves always have the lowest average prices of the operating reserve products, with prices typically averaging less than two dollars on an annual basis. There has been a general upward trend in operating reserve product prices over the past three years.

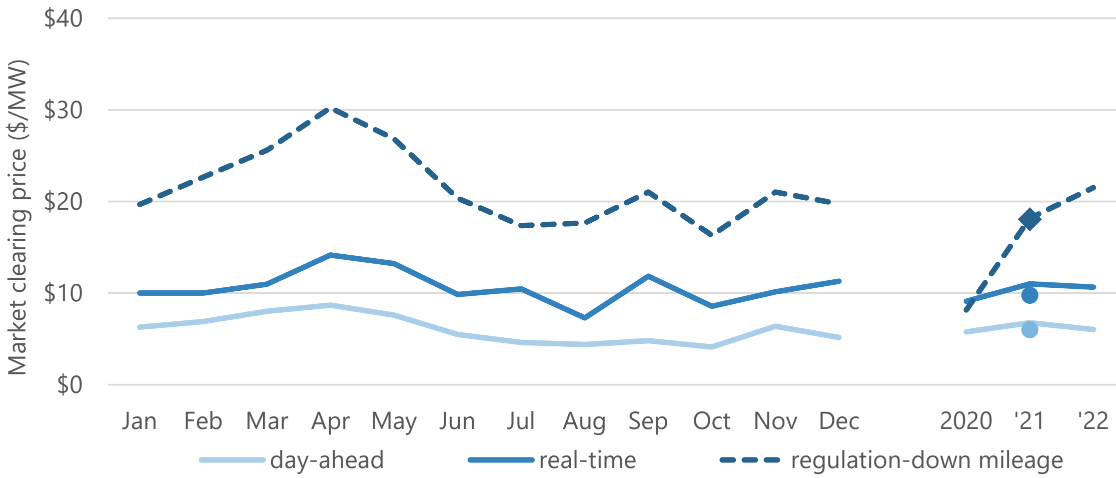
Day-ahead and real-time price patterns vary for regulation-up and regulation-down, see Figure 4–20 and Figure 4–21. The dots shown on the charts represent prices for 2021 without February, thus showing the trend compared to a more normal year.

Figure 4–20 Regulation-up service prices



The regulation-up day-ahead market clearing price averaged nearly $18/MW, while the real-time price for 2022 averaged just over $21/MW. Excluding February 2021, the average day-ahead regulation-up market clearing price was up nine percent from 2021 to 2022, while real-time market clearing price was up 14 percent. The higher periods of regulation-up pricing from April through September coincide with the period of highest gas prices during the year. The regulation-up mileage price for 2022 was $16/MW, this is up 15 percent from $13.71/MW in 2021, excluding February.

Figure 4–21 Regulation-down service prices



Markers in 2021 represent values without February included

Regulation-down market clearing price in the day-ahead market averaged $6/MW in 2022, which is flat compared to the 2021 price without February of $6/MW. Real-time regulation-down market clearing prices averaged nearly $11/MW for 2021, up a dollar (or eight percent) from 2021 without February. The regulation-down mileage price continues to grow sharply over the past three years – from $8.16/MW in 2020 to $21.50/MW in 2022.

The MMU analyzed regulation mileage prices in 2017 and found a design inefficiency. This design inefficiency was still present in 2022. The issues occur because mileage prices are not set by the marginal resource's cost like other products. Instead, resources are cleared for regulation based on their service offers. These service offers are derived by taking the competitive offer for regulation and adding the mileage offer to it after discounting the mileage offer by the applicable mileage factor. For instance, the service offer of a resource with a competitive regulation-down offer of $1 and a regulation-down mileage offer of $36 would be $10 if the mileage factor is 25 percent.[119] If the $10 service offer is economic, then the resource will clear for regulation-down and the regulation-down mileage price will be set at $36, assuming this is the highest mileage price for regulation-down mileage that cleared in the market.

The MMU has observed instances where resources cleared with regulation-down competitive offers of $0 and mileage offers just under $50. These units consistently cleared with this offer strategy because the service offer was near $10.50 (e.g. 21 percent * $50) which was lower than the services offers of other resources offering in higher competitive offers. For instance, another resource may offer in a $12 competitive offer and $0 mileage offer. This would make that

[119] $1 + $36 * 0.25 percent = $10

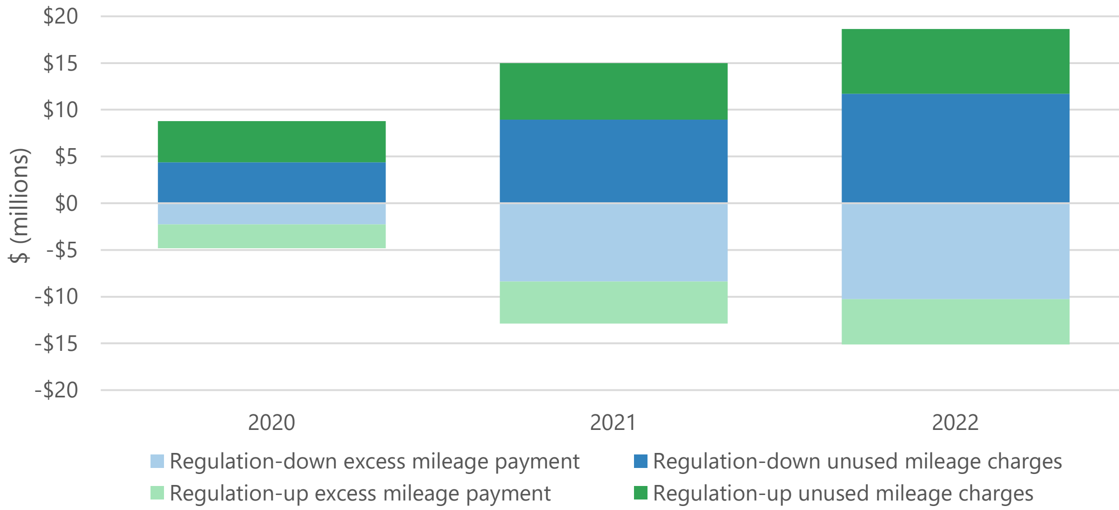
resource's service offer $12 (($12 + $0) * 21 percent). In this circumstance, the resource with the highest service offer will set the regulation-down price at $12, but the mileage offer will be $50, set by the highest cleared mileage offer.

In addition, the MMU observed systematic overpayment of regulation mileage in the day-ahead market, which appears to be the result of the mileage factor being set consistently too high relative to actual mileage deployed. This occurred because the mileage factor is being set on historical instructed regulation megawatts rather than deployed regulation. When resources have to buy back their position, they typically have to buy back at the inflated mileage offer. Using the example above, if a resource clears for 10 megawatts it will receive the $12 clearing price for a total payment of $120, which was set using a $0 mileage offer. However, if it does not get deployed for regulation it will have to buy back 2.1 megawatts at the $50 mileage offer, because they performed less than expected. The unit was paid 2.1 megawatts at a $0 price for expected mileage at the clearing, but the buyback is now $105. This makes the total payment to the resource for clearing regulation $15 or $1.50 per cleared megawatt.

The instructed values for regulation are on average two and a half times what resources perform. If the mileage factor was forecasted in the exact amount of what was performed, then the excess mileage payments should closely offset the unused mileage charges. However, this is not the case. The reason for the difference is that regulation is deployed on a four second basis, but it is settled on a five-minute basis. Resources could be directed to move up 10 megawatts at the beginning of the interval. However, 20 seconds later they may be directed to hold off on providing that regulation. If their ramp rate is only 10 megawatts per minute, they will only have provided 3.3 megawatts of regulation. This is generally what causes the instructed values to vary from the actual values.

Figure 4–22 below illustrates the differences between the unused mileage charges and the excess payments.

Figure 4–22 Regulation mileage payments and charges



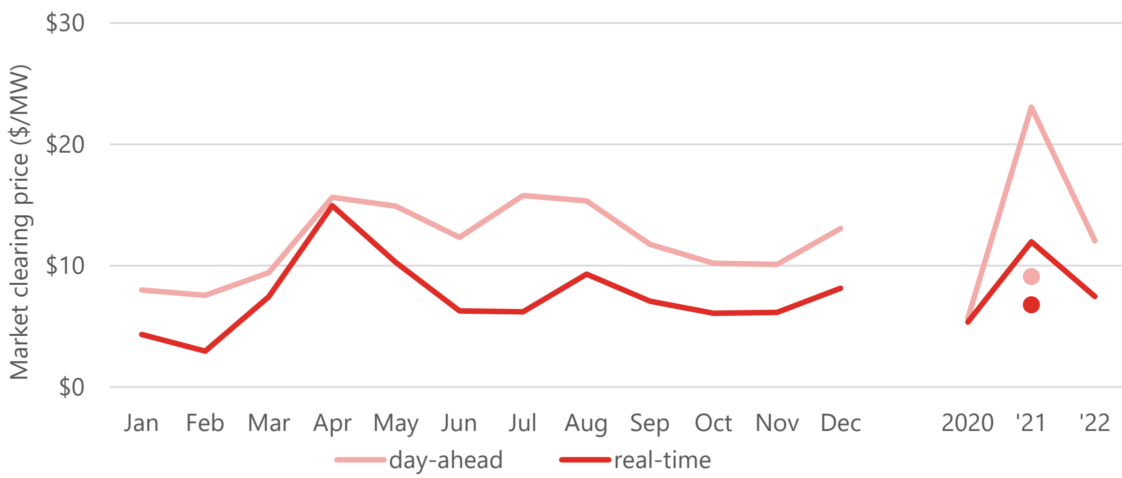
Negative values represent the payments made to resources that deployed for more regulation megawatts than were expected and positive values represent charges made to resources that deployed for less than what was expected. In 2022, just over $3.5 million more was charged for mileage buyback compared to payouts for excess mileage deployment, with $15.1 million being paid for excess mileage and $18.6 million being charged for unused mileage. This is up from $2.1 million in 2021, but down from $3.9 million in 2020. These net charges reduce the profitability of resources clearing regulation.

The MMU observed that participants with resources frequently deployed for regulation have an incentive to inflate the mileage prices by offering in $0 regulation capability offers and high mileage offers. The MMU also has concerns that the inflated mileage factors are causing units to buy back megawatts at the inflated amounts that may be eligible to be made whole and can ultimately lead to higher uplift costs in the market. As such, the MMU has recommended that SPP review and revise the regulation mileage pricing approach to send more appropriate price signals.

SPP responded to the recommendation with revision request 504, which will effectively reduce the buyback costs for mileage to participants, while lowering the unduly high mileage clearing prices. It will do this by applying two changes. The first change will set the expected mileage deployment used by settlements to be the historical ratio of actual mileage provided to mileage cleared. The current method uses the historical ratio of instructed mileage to cleared mileage. As described in detail above, the four-second mileage instructions are not feasible for participants to completely follow, so the instructed mileage ends up being about double the actual mileage delivered. Setting the expected mileage factor to the historically delivered ratio of mileage for all resources will reduce roughly half the buyback cost. Secondly, the current mileage method set the mileage offer to the highest mileage offer cleared. As described above, since the mileage offers get discounted by the mileage factor, and added to the competitive offer to make a clearing offer, it allowed high mileage offers to clear and set the mileage-clearing price. The revision request will help remediate this issue by ranking all mileage megawatts by cleared cost and setting the price at the cost of the highest expected deployed megawatt. This revision request has passed all phases of the SPP stakeholder process and is awaiting FERC approval.

Spinning and supplemental reserve prices are shown below in Figure 4–23 and Figure 4–24. The dots shown on the charts represent prices for 2021 without February, thus showing the trend compared to a more normal year.

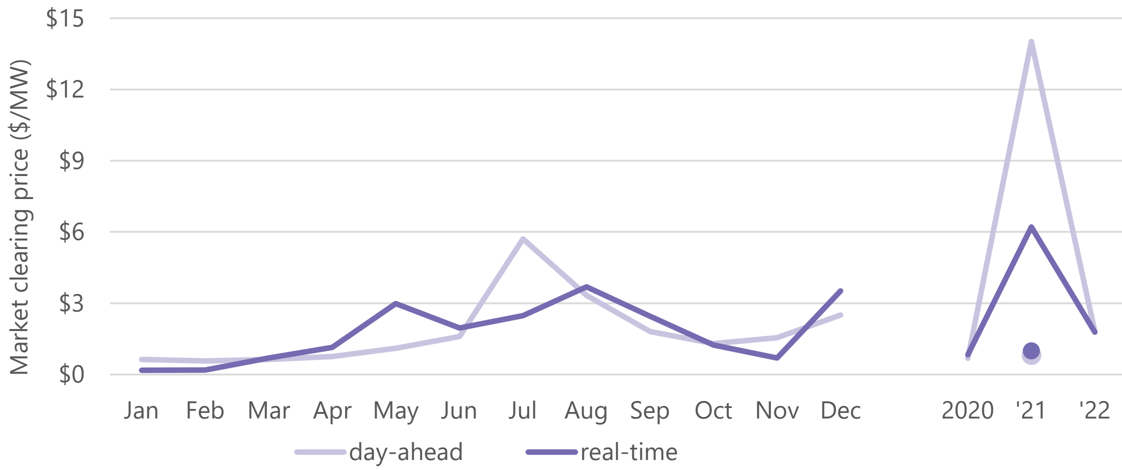
Figure 4–23 Spinning reserve prices



Markers in 2021 represent values without February included

The market clearing price for day-ahead spinning reserves averaged $12/MW in 2022, an increase of 24 percent from $9/MW in 2021, excluding February. Real-time spinning reserves price for 2022 averaged $7.50/MW, up from $6.75/MW in 2021, excluding February, an increase of nine percent.

Figure 4–24 Supplemental reserve prices



Markers in 2021 represent values without February included

When excluding February 2021, day-ahead supplemental reserve prices climbed from $0.82/MW in 2021 to $1.81/MW in 2022 and real-time prices increased from $1.00/MW in 2021 to $1.79/MW in 2022. At these levels, the supplemental reserve price does not indicate a large need for stand by generation.

Historically, reserve prices have generally been low. Correspondingly, SPP operators remain concerned about wind forecast errors and often manually commit resources for capacity. These concerns do not appear to be addressed with the supplemental reserve product, because of its short time frame. However, the uncertainty product under development by SPP should help compensate generators that are specifically needed to mitigate the risk associated with wind forecast error.[120] The uncertainty product received FERC approval in mid-August 2022 and is awaiting implementation by SPP on July 6, 2023.

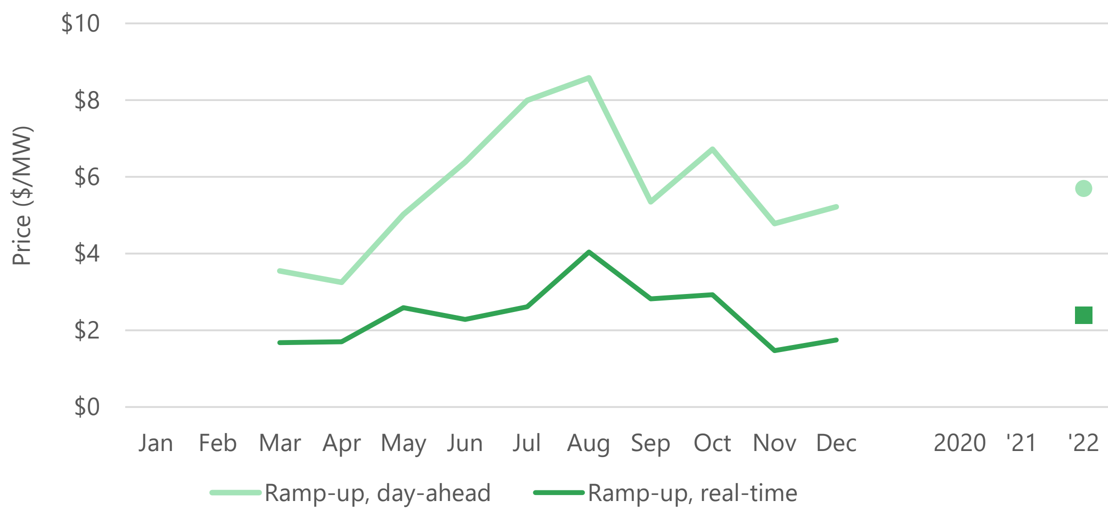
The SPP ramping capability product was implemented on March 1, 2022. This product is used to provision rampable up and down capacity for uncertainty events in net load forecasts across a 10-minute future time horizon. Historically, SPP operators procured ramp through out-of-market mechanisms, often resulting in uplift payments.

The ramp capability product was designed to allow for more economical and transparent management of the intermittent aspects of the system. Its function was to procure ramp-up and ramp-down to meet historical net load forecast needs up to the historical 95th percentile of error. This new product allows a systematic way to hold back resources that have ramp

[120] SPP Holistic Integrated Tariff Team report, page 18.

capability for future intervals in which ramp may be needed. Ramp product prices are shown in Figure 4–25.

Figure 4–25 Ramp product prices



There have been no ramp down product prices since implementation on March 1. The maximum ramp-up price per interval was $44/MW, which occurred in October. Average ramp-up capability product prices for 2022 since implementation were $5.69/MW in day-ahead and $2.39/MW in real-time.

The MMU's preliminary findings raise the following concerns with performance of the ramp capability product:

1. Variable energy resources cannot produce regulation-up in the SPP market. However, 58 percent of the day-ahead ramp-up and just over half of the 2022 real-time ramp-up product was cleared on variable energy resources.
2. Thirty-one percent of the real-time ramp-up was procured from resources having shift factors lower than five percent on binding or breached constraints. These resources increment congestion on these constraints, thus are typically unable to dispatch upward to meet ramping needs.
3. The scarcity demand curve prices for the ramp capability up product may be set too low. There is a high frequency of ramp-up scarcity events, especially when taking in the fact that non-deployable ramp-up is being cleared to meet the requirement.

SPP is currently testing a design fix that will allow a market pre-run to identify resources with non-deliverable ramp-up and exclude those from the clearing of the ramp capability-up product.

4.2 UPLIFT

The Integrated Marketplace provides make-whole payments to generators to ensure that the market provides sufficient revenue to cover the cleared offers providing energy and operating reserves for a period in which the resource was committed. To preserve the incentive for a resource to meet its market commitment and dispatch instruction, market payments should cover the sum of the incremental energy cost, start-up cost, no-load cost, transition cost, and cost of operating reserve products. The make-whole payment provides additional market payments in cases where revenue is below a resource's offer to make the resource whole to its offers of operating reserve products, incremental energy, start-up, transition, and no-load.

For the resources that are not combined-cycle, settlements separately evaluate: (1) day-ahead market commitments based on day-ahead market prices and cleared offers; and (2) reliability unit commitments based on real-time market prices and cleared operating reserve offers. Combined-cycle resources that registered as multi-configuration resources are unique in that they can be cleared in both the day-ahead and real-time markets at the same time. As a result, settlements must evaluate the revenues and cost of both real-time and day-ahead commitments when calculating real-time make-whole payments for combined-cycles.

4.2.1 MAKE-WHOLE PAYMENTS

Figure 4–26 shows monthly and annual day-ahead make-whole payment totals by technology type. Figure 4–27 shows the same make-whole payment information for reliability unit commitment.

Figure 4–26 Make-whole payments by fuel type, day-ahead

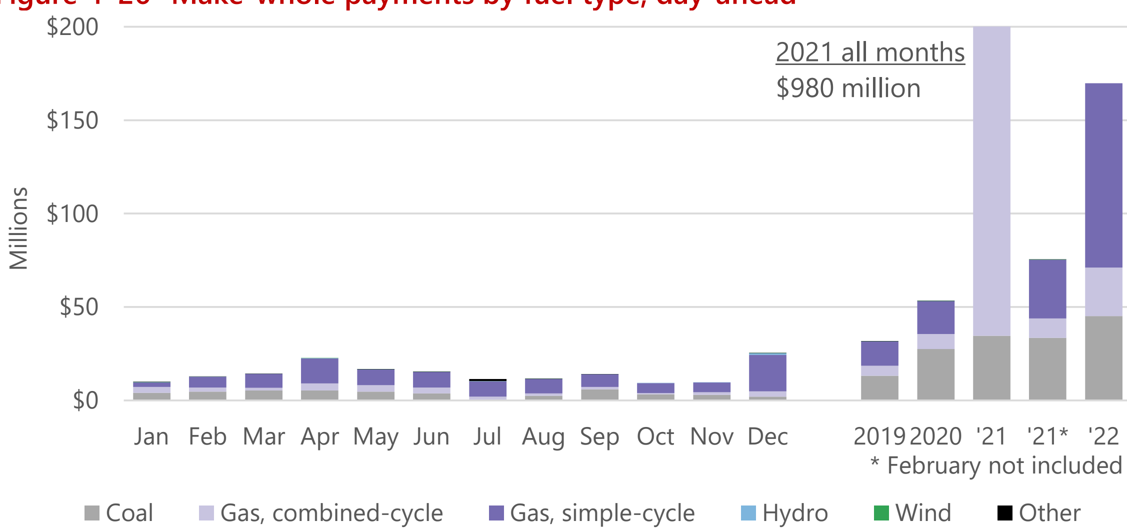
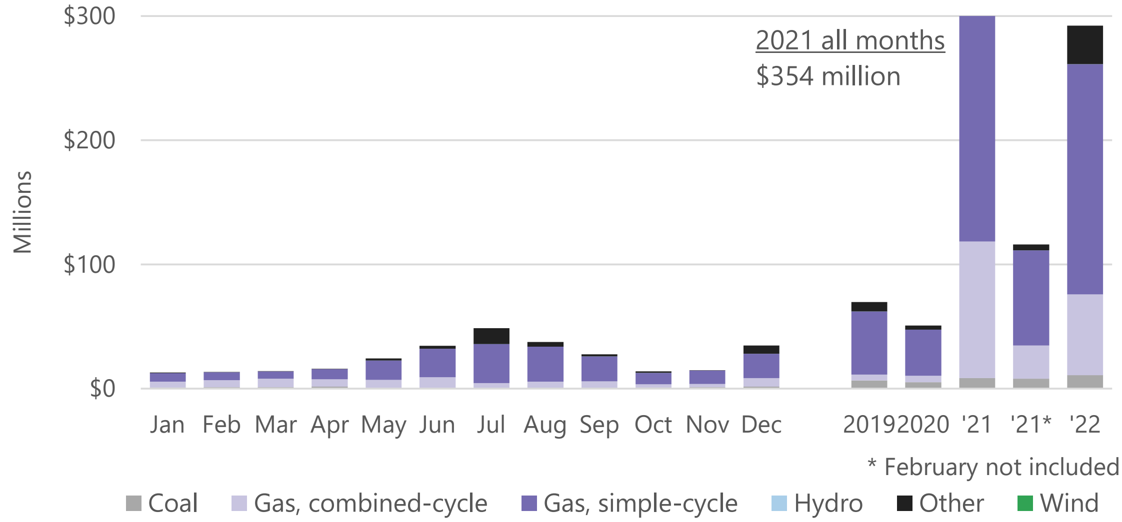


Figure 4–27 Make-whole payments by fuel type, reliability unit commitment



Because of the 2021 February winter weather event, make-whole payments climbed to levels well beyond those ever experienced in the Integrated Marketplace. For 2022, day-ahead market and reliability unit commitment make-whole payments combined totaled just over $465 million. Reliability unit commitment make-whole payments constituted 63 percent of the total make-whole payments in 2022.

Day-ahead make-whole payments were nearly $292 million in 2022, down from $979 million in 2021, as decrease of 82 percent from 2021. Reliability unit commitment make-whole payments in 2022 totaled $292 million, down from $354 million in 202, representing a 21 percent decrease from 2021. Also of note is the fact that real-time make-whole payments were highest in July, which coincided with the summer peak and day-ahead make-whole payments were highest in December, which coincided with the winter peak.

Make-whole payments occur for several reasons, which include some of the following: local reliability commitments, uncaptured congestion in the day-ahead market, under-cleared generation (primarily wind) in the day-ahead market, inflexibility of resources to move in economic ranges or go offline between on-peak and off-peak hours, and excessive transmission congestion not being solved by the market.

Total make-whole payments per megawatt generated averaged $0.08/MWh for 2022, down from $5.83/MWh in 2021. However, roughly 31 percent of SPP's generation in 2021 was provided by self-committed resources.[121] In addition 2021 make-whole payments were much

[121] See Section 3.3, Figure 3–24.

higher due to the effects of the winter weather event. These resources are not eligible for make-whole payment reimbursements. Primarily, resources committed under reliability or market status are eligible for cost reimbursement.

Figure 4–28 illustrates the 2020 to 2022 average make-whole payments per each megawatt eligible for cost reimbursement, or in other words those megawatts generated under market or reliability status. These include manual commitments made by operators.

Figure 4–28 Make-whole payments for eligible megawatts[122]

	2020	2021	2022
Day-ahead market make-whole payments / eligible MWh	$0.32	$6.42	$0.94
Real-time market make-whole payments/ eligible MWh	$15.77	$94.58	$43.13

Because of the February winter weather event, both day-ahead and real-time make-whole payments per eligible megawatt rose steeply. In addition, rising prices of natural gas late in the year played a role in the increasing make-whole payments.

Operators often commit resources when the available ramp capacity needs in future intervals is perceived to be short. These actions often reduce the occurrence of scarcity events. However, this has the effect of potentially suppressing the price signal that would indicate a problem as capacity is brought on to meet the perceived ramp shortage. Additionally, the resources that were manually committed are typically expensive in comparison to the energy prices for which they run, requiring them to receive cost reimbursement through make-whole payments. Another way to view the real-time make-whole payments is that on the average $43.13/MWh was paid to avoid reliability problems that were not able to be addressed directly by the real-time market.

In addition, most scarcity events last less than two intervals and most resources have start times that are longer than this period and minimum-run times that are much longer than this period. This means that even if these resources are able to capture one to two intervals of the high

[122] These numbers were not presented under this method in prior years. Prior years reported total make-whole payments divided by total generation. This method shows total make-whole payments divided only by megawatts eligible for cost reimbursement.

prices, they may have to run an hour or two longer with less economic price levels, leading to the need for cost reimbursement.

The MMU believes that a revamped ramp capability product (see section 3.2.3), which went into production on March 1, 2022, and the upcoming uncertainty product, slated to be implemented in the second quarter of 2023, and fast-start resource pricing logic, will help provide the appropriate pricing and compensation mechanisms for meeting ramp capacity needs in the market. However, the ramp capability product needs to be enhanced and improved to provide maximum benefit to the market. This includes reducing make-whole-payments and bringing transparency to the market. They will also improve price formation and better compensate resources that provide the much-needed ramping flexibility, as well as reduce the need for manual commitments for capacity.

Figure 4–29 shows the share of each cause of make-whole payments in the real-time and day-ahead markets.

Figure 4–29 Make-whole payments, commitment reasons

Real-time commitment reason	2020	2021	2022
Manual, SPP transmission	34.6%	9.5%	29.0%
Manual, SPP capacity	22.8%	38.5%	14.4%
Intra-day RUC	16.0%	25.0%	30.1%
Manual, voltage	11.7%	3.5%	3.4%
Short-term RUC	8.0%	4.7%	15.8%
Day-ahead RUC	3.9%	17.9%	5.1%
Manual, stagger	2.7%	0.8%	2.2%
Other	0.2%	0.2%	0.1%

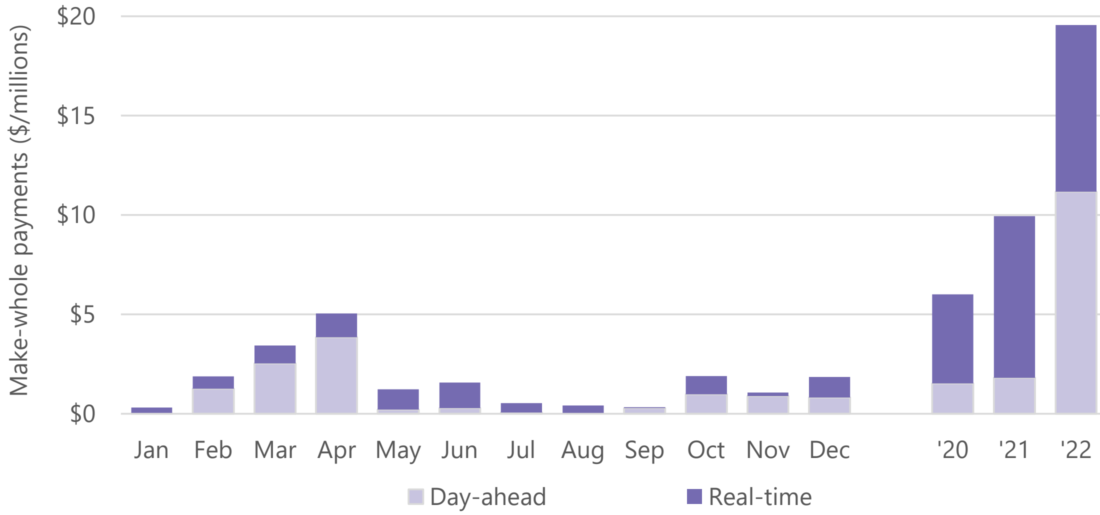
Day-ahead commitment reason	2020	2021	2022
Day-ahead market	97.1%	99.8%	99.0%
Voltage support, manual	2.9%	0.2%	1.0%

In recent years, there has been a large increase in make-whole payments occurring during periods that resources are manually committed for capacity. In fact, just under 15 percent of the real-time make-whole payments were paid to resources committed manually for capacity needs. This is lower than the 39 percent in 2021, however, capacity commitments were much higher in 2021 during the winter weather event, leading to this increase. There was a large increase in resources committed for transmission, which was lower in 2021 due to the winter weather.

These commitments had 29 percent of the real-time make whole payments in 2022, up from 10 percent in 2021, but down from 35 percent in 2020.

Make-whole payments associated with voltage support commitments do not follow the same uplift process outlined in Section 4.3.1. Instead, the cost of these make-whole payments is distributed to the settlement areas that benefited from the commitment by way of a load ratio share. Figure 4–30 illustrates the level of make-whole payments associated with voltage support commitments.

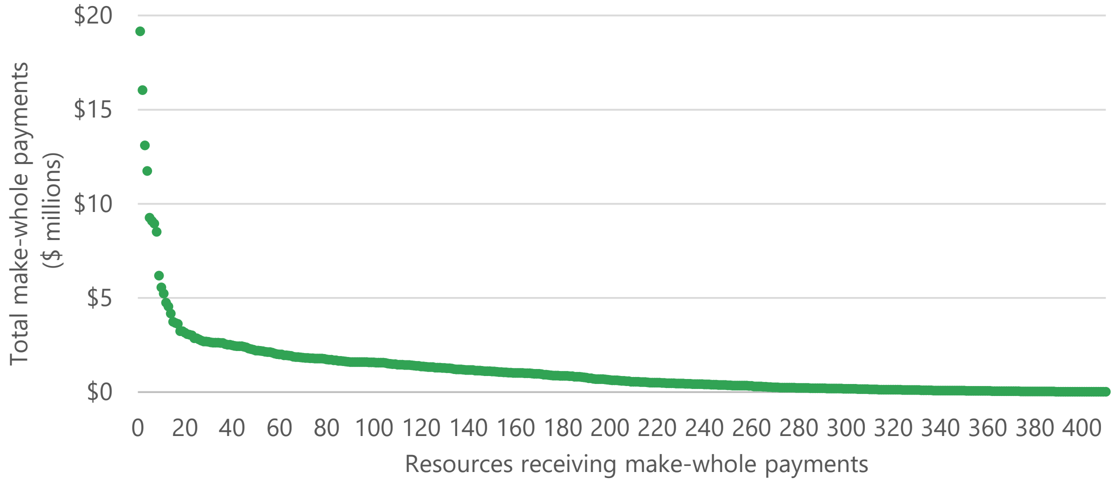
Figure 4–30 Make-whole payments for voltage support



The make-whole payments stemming from voltage support commitments almost doubled in 2022, with day-ahead voltage supports commitments showing the largest increase. The increase in gas prices in 2022 is the main driver for the increase in make-whole payments for voltage support.

Many SPP resources received high levels of make-whole payments in 2022, as highlighted in Figure 4–31.

Figure 4–31 Concentration of make-whole payments by resource



Because of the higher total levels of make-whole payments, 160 resources received over $1 million in total make-whole payments in 2022, compared to 130 in 2021, with the highest payment to a single resource of $19 million. The resource receiving the highest amount of make-whole payments in 2022 is in an area with frequent congestion and most of these make-whole payments stem from manual commitments needed to control regional transmission and voltage concerns.

Figure 4–32 reveals there is concentration in the market participants that receive make-whole payments.

Figure 4–32 Number of market participants receiving make-whole payments

	2020			2021			2022		
Dollar ranges in millions	$1-5	$5-10	>$10	$1-5	$5-10	>$10	$1-5	$5-10	>$10
Market participants receiving make-whole payments	5	3	5	7	3	15	8	4	12
Percent of make-whole payments by category	7%	8%	81%	1%	2%	96%	5%	6%	89%

In 2022, there were 12 market participants that each received annual make-whole payments in in excess of $10 million. These 12 market participants accounted for 89 percent of the total make-whole payments paid out in 2022, which is eight percentage points lower than what the 15 market participants received in 2020.

4.2.2 MAKE-WHOLE PAYMENT ALLOCATION

The allocation of both day-ahead and real-time make-whole payments has important consequences to the market. In principle, for market efficiency purposes uplift cost allocation should be directed to those members that contributed to the need for the make-whole payments (i.e., cost causation).

For the day-ahead market, make-whole payment costs are distributed to both physical and virtual withdrawals on a per-MWh rate. The per-MWh rate is derived by dividing the sum of all day-ahead make-whole payments for an operating day by the sum of all cleared day-ahead market load megawatts, export megawatts, and virtual bids for the operating day. The average per-MWh rate for withdrawing locations in the day-ahead market was $0.55/MWh for 2022; the per-MWh rate for 2021 was $0.29/MWh, compared to $0.19/MWh in 2020.

For the real-time market, make-whole payment costs are distributed through a per-MWh rate that is assigned to all megawatt-hours of deviation in the real-time market. The rate was the per-MWh rate for 2022 was $3.67/MWh, nearly double the 2021 rate of $1.81/MWh. There are eight categories of deviation and each category receives an equal amount per megawatt, which can vary by operating day, when the cost of make-whole payments is applied.

Figure 4–33 shows the total megawatts of deviation by each category, as well as the total real-time make-whole payment uplift charges for each deviation category.

Figure 4–33 Make-whole payments by market uplift allocation, real-time

Uplift Type	Deviation MWs (Thousands)	Uplift charge (thousands)	Share of MWP charges	Cost per MW of deviation
Settlement location deviation	74,081	$ 250,995	85.9%	$ 3.39
Outage deviation	3,438	$ 14,233	4.9%	$ 4.14
Maximum limit deviation	1,410	$7,810	2.7%	$ 5.54
Status deviation	1,940	$ 7,853	2.7%	$ 4.05
Uninstructed resource deviation	1,285	$ 4,426	1.5%	$ 3.45
Reliability unit commitment, self-commit deviation	1,168	$ 4,217	1.4%	$ 3.61
Reliability unit commitment deviation	275	$ 1,950	0.7%	$ 7.08
Minimum limit deviation	221	$ 840	0.3%	$ 3.79

Even though each category of deviation is applied the same rate for deviation, approximately 86 percent (settlement location deviation in the table above) of the real-time make-whole payment costs were paid by entities withdrawing (physical or virtual) more megawatts in the real-time market than the day-ahead market.

Transactions susceptible to this charge are virtual offer megawatts; real-time load megawatts different from the day-ahead megawatts cleared; import, export, and through megawatts in real-time different from the megawatts cleared in the day-ahead market; and units pulling substation power different from any megawatts produced by the unit. However, virtual offers are the most susceptible as 100 percent of their megawatts are considered incremental. Because of this, virtual offers alone paid 53 percent of all real-time make-whole payments in 2022, up from 30 percent in 2021. Historically, virtuals have paid around 50 percent of real-time make-whole payments annually. However, with the higher amount of make-whole payments due to the winter weather event, the annual percentage was much lower in 2021.

Cost causation has been an area of concern in the SPP working groups in the past few years. In particular, participants raised concerns that the market is not properly allocating the market cost back to those responsible for causing those costs. With virtual offers bearing such a heavy burden of these costs, it reduces the incentives for behavior changes among those that are causing the cost and it adds a premium to virtual transactions. This should be considered as part of the evaluation of under-clearing of wind in the day-ahead as these incentives likely contribute to the lack of price convergence between day-ahead and real-time.

4.2.3 REGULATION MILEAGE MAKE-WHOLE PAYMENTS

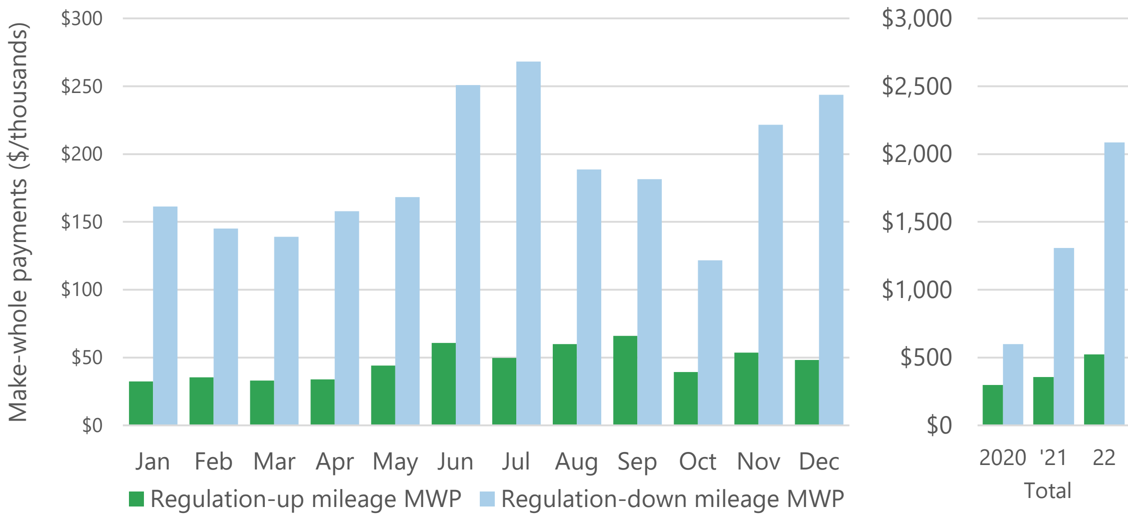
In March 2015, SPP introduced regulation compensation changes for units deployed for regulation-up and regulation-down. One component of the regulation compensation charges is regulation-up and regulation-down mileage make-whole payments for units that are charged for unused regulation-up or regulation-down mileage at a rate that is in excess of the regulation-up or regulation-down mileage offer.

SPP calculates mileage factors monthly for both regulation-up and regulation-down. These mileage factors are ratios of historical averages of the percentage of each regulation product deployed to the regulation product cleared in the prior month. The regulation-up mileage factor averaged 32 percent in 2022, up significantly from 16 percent in 2021, while the regulation-down mileage factor averaged 37 percent in 2022, up from 21 percent in 2021.

The mileage factor is a key component in the computation of mileage make-whole payments. When the mileage factor is greater than the percentage of deployed regulating megawatts to cleared regulating megawatts for each product, the resource must buy back the non-deployed megawatts at the mileage marginal clearing price for the respective product. If the mileage marginal clearing price used for the buyback is greater than the unit's cost for the product a make-whole payment may be granted.

Figure 4–34, below, illustrates the mileage make-whole payments for 2022 and the prior two years.

Figure 4–34 Regulation mileage make-whole payments



Regulation-up mileage make-whole payments were around $560,000 in 2022, up 32 percent from 2021. Regulation-down mileage make-whole payments were over $2 million in 2022, up 37 percent from 2021, and up 71 percent from 2020. The design deficiency described in section 4.1.6 can be directly attributed to the disparity between the regulation-down and regulation-up mileage make-whole payments seen in Figure 4–38. This design inefficiency is one of the main contributors to the disparity between the mileage make-whole payments paid out to regulation-up and regulation-down.

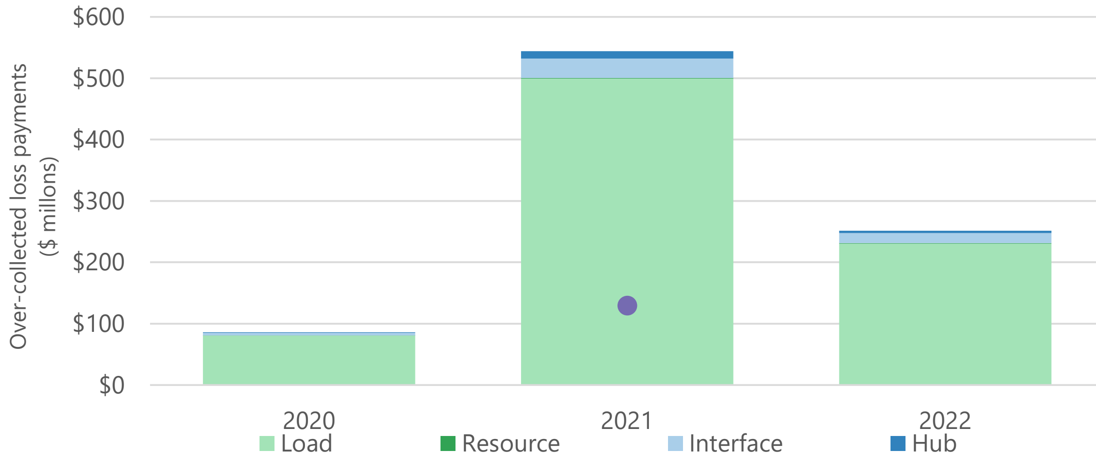
4.2.4 DISTRIBUTION OF MARGINAL LOSSES (OVER-COLLECTED LOSS REVENUE)

Both the congestion and loss components of prices create excess revenues for SPP that must be distributed to market participants in an economically efficient manner. In the case of marginal loss revenues, this requires that the distribution does not alter market incentives.

The current design consolidates the distributions of day-ahead and real-time over-collected loss rebates into one distribution.[123] Both day-ahead and real-time over-collected loss rebates are distributed on just real-time withdrawing megawatts. This includes loads, substation power, exports, wheel-throughs, pseudo-ties, and bilateral settlement schedules (BSS). The only exception is that both day-ahead and real-time bilateral settlement schedules are entitled to the rebate, as long as the underlying megawatts associated to the bilateral settlement schedules are not less than the megawatts of the bilateral settlement schedule.

Over-collected losses for the past three years are shown in Figure 4–35.

Figure 4–35 Over-collected losses, real-time



The marker in 2021 represents the value without February included.

A total of $252 million was paid out in over-collected losses rebates during 2022, with $231 million (92 percent) going to load. This is up from the $130 million in over-collected losses rebates paid out in 2021 (excluding February), and the $86 million paid in 2020. The increase in over-collected losses can primarily be attributed to higher energy prices and higher levels of demand.

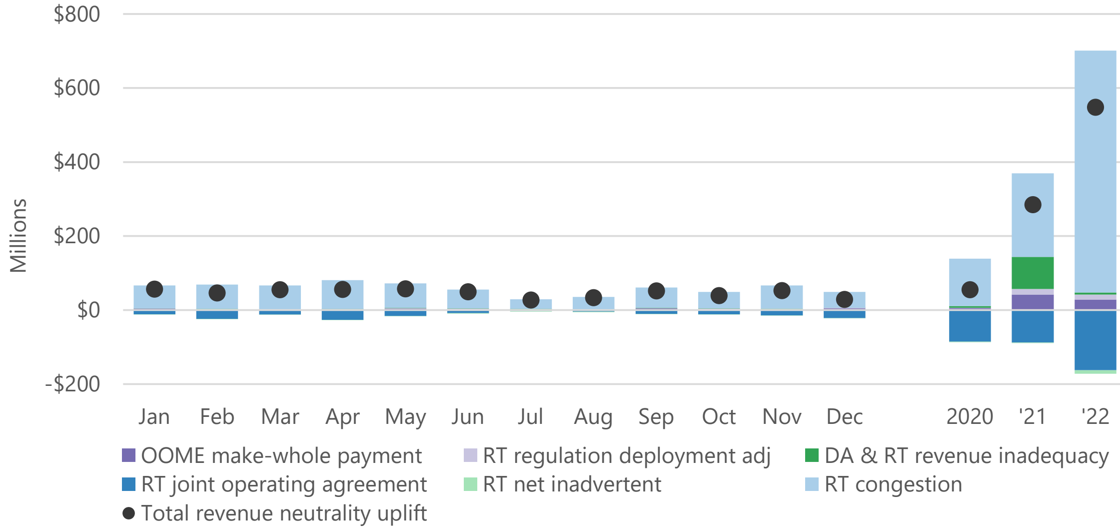
4.2.5 REVENUE NEUTRALITY UPLIFT

Revenue neutrality uplift (RNU), shown in Figure 4–36, ensures settlement payments/receipts for each hourly settlement interval equal zero. Positive revenue neutrality uplift indicates that SPP receives insufficient revenue and collects from market participants. Negative revenue-neutrality

[123] Prior years over-collected loss designs are described in the *2018 Annual State of the Market* report under Section 4.2.3.

uplift indicates where SPP receives excess revenue, which must be credited back to market participants.

Figure 4–36 Revenue neutrality uplift



Total revenue neutrality uplift for 2022 was $548 million, up 92 percent from 2021, and up ten-fold from $54.7 million in 2020. The two main components of revenue neutrality uplift are real-time congestion and real-time joint operating agreement (also known as market-to-market). The joint operating agreement component generally acts to lessen revenue neutrality uplift, while the congestion component generally acts to increase revenue neutrality uplift. Real-time joint operating agreement portion of revenue neutrality uplift was $162 million in 2022, an increase of 86 percent from $87 million in 2021. The real-time congestion component of revenue neutrality uplift was $653 million in 2022, an increase of 189 percent from $226 million in 2021. The high level of day-ahead and real-time revenue inadequacy portion in 2021 was a result of the February winter weather event.

The increase in the real-time congestion component of revenue neutrality uplift has been the topic of much discussion over the past year. At the February 2023 Market Working Group meeting, SPP staff reported[124] on the increased congestion component. SPP staff stated that they attributed the increase in real-time congestion to:

- Increased virtual net injection
- Wind
  - Underperforming in the day-ahead market
  - Increase in wind capacity
- Increased real-time marginal congestion component of locational marginal price
  - Increased number of constraints
  - Higher gas prices
- Differences between day-ahead and real-time.

SPP staff stated that overall, as real-time congestion increases, the congestion imbalance between day-ahead and real-time drive up revenue neutrality uplift. In October 2022, the RTO began a day-ahead market process to activate market-to-market flowgates, although this did provide some relief in the congestion imbalance, it was not a significant impact. SPP staff will continue to study the increase in revenue neutrality uplift, specifically, the increase in real-time congestion, and will provide updates as more information is learned. The MMU will continue to monitor this trend, and report any additional findings in future reports.

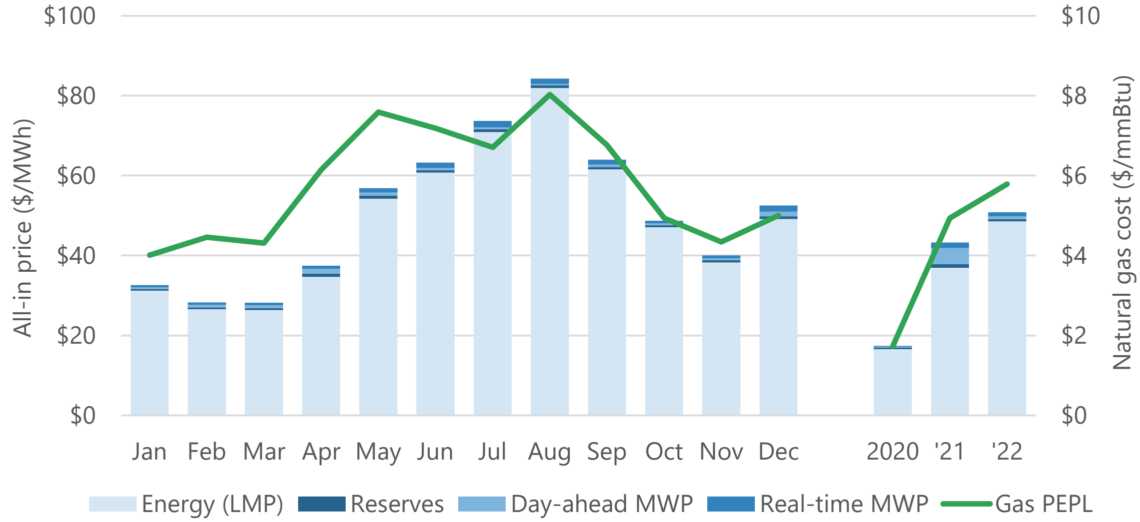
4.3 TOTAL WHOLESALE MARKET COSTS AND PRODUCTION COSTS

Figure 4–37 plots the average all-in price of energy and the cost of natural gas, measured at the Panhandle Eastern (PEPL) hub. The average all-in price includes the costs of energy, day-ahead and real-time reliability unit commitment make-whole payments, operating reserves,[125] reserve sharing group costs, and payments to demand response resources

[124] https://spp.org/Documents/68790/MWG%20Agenda%20&%20Background%20Materials%2020230214-15.zip, item 18-RNU_February 2023 MWG.pptx.

[125] Operating reserves are resource capacity held in reserve for resource contingencies and NERC control performance compliance, which includes the following products: regulation-up service, regulation-down service, spinning reserve and supplemental reserve.

Figure 4–37 All-in price of electricity and natural gas cost



The figure shows that the vast majority of costs are from the day-ahead and real-time energy.[126] It also shows that the market cost of operating reserves and make-whole payments constituted approximately four percent of the $50.83/MWh all-in price for full year 2022, while energy accounted for 96 percent. Since the start of the Integrated Marketplace, historically energy makes up around 97 percent of the all-in price. The 2022 all-in price was 17 percent higher than the 2021 average, which can be attributed to increase in natural gas prices in 2022.

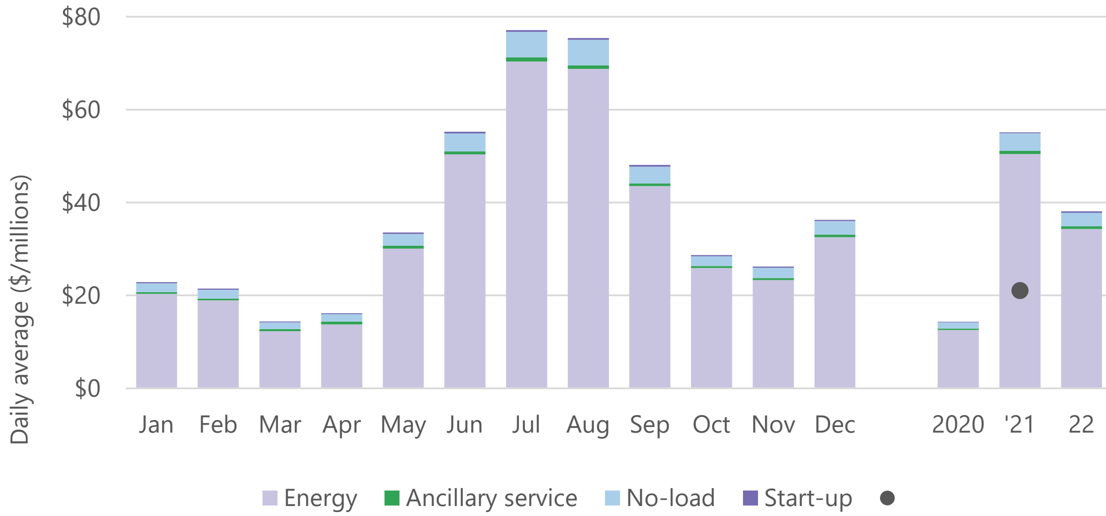
Production cost "is defined as the settlement cost for the market … for all resources."[127] Production cost, in this case, is the sum of four components:

- energy: cleared megawatts multiplied by locational marginal prices;
- ancillary service: cleared operating reserves multiplied by market clearing prices;
- start-up: "… the out of pocket cost that a Market Participant incurs in starting up a generating unit from an off-line state …;"[128] and
- no-load: "… the hourly fee for operating a synchronized Resource at zero … output."[129]

Figure 4–38 shows the average daily production cost for the day-ahead market, while Figure 4–39 shows the average for the real-time market.

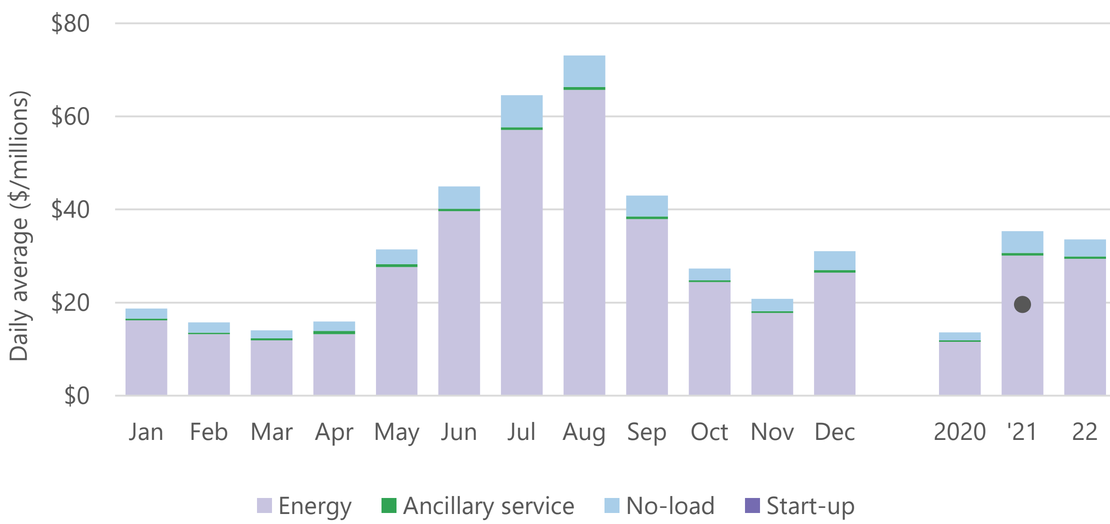
[126] Scarcity pricing is included in the energy component and not easily separated out in the SPP settlement data. See Section 3.2.1 for a discussion of scarcity pricing impacts.
[127] Integrated Marketplace Protocols, Section 7.2.1
[128] Integrated Marketplace Protocols, Start-Up Offer
[129] Integrated Marketplace Protocols, No-Load Offer

Figure 4–38 Production cost, daily average, day-ahead



The day-ahead daily average production cost decreased 31 percent from 2021 to 2022. However, due to the effects of the February 2021 winter weather event, 2021 production costs were inflated due to the higher gas prices experienced during the event. Removing February from the daily production cost for 2021, the increase from 2021 to 2022 is 81 percent. The increase in production cost was almost fully attributed to the energy component, which increased with gas prices. The energy component is sensitive to numerous inputs, which include fuel cost, amount of subsidized renewable energy, operating reserve scarcity, and load levels. In 2022 daily day-ahead production costs ranged between −$5 million and $159 million. Additionally, 66 percent of the daily production costs ranged between $0 and $45 million.

Figure 4–39 Production cost, daily average, real-time



Real-time production cost decreased by nine percent from 2021 to 2022 to a daily average of nearly $34 million. However, due to the effects of the February 2021 winter weather event, 2021 production costs were inflated due to the higher gas prices experienced during the event. Removing February from the daily production cost for 2021, the increase from 2021 to 2022 is 41 percent. The increase in production cost, similar to day-ahead, was also almost fully attributed to the energy component. The range of the daily real-time production costs in 2022 ranged from −$7 million to $207 million. Much like day-ahead market production costs, 67 percent of the daily production costs in real-time ranged between $0 million and $45 million.

4.4 LONG-RUN PRICE SIGNALS FOR INVESTMENT

In the long term, market prices provide signals for investment in new transmission and generation, as well as ongoing maintenance of existing generation and transmission assets to meet load. Given the relatively low average SPP market prices since the beginning of the market, the MMU does not expect SPP market prices by themselves to support new entry of generation investments. While the SPP market on its own has historically offered low incentives for new generation, some reasons for new generation investments include expansion of corporate renewable goals, bilateral contracts, purchase power agreements, SPP market protocol requirements, federal and/or state incentives, state-regulated investments, emerging technologies, and emission reduction plans. However, stakeholder reactions and feedback to SPP's Board of Directors approval of a 3 percentage point increase in the Planning Reserve Margin (PRM) suggests that these out-of-market factors are not significant enough to drive enough investment in new generation to keep up with SPP's reliability needs.

To determine the extent market prices could support new investments, the MMU analyzed the fixed costs, and annual fixed operating and maintenance costs of five generation technologies relative to their potential net revenues[130] at SPP market prices. The generator types include scrubbed coal, natural gas combined-cycle (combined-cycle), industrial frame natural gas combustion turbine (combustion turbine), wind, and solar photovoltaic with storage. This analysis uses daily averages and assumptions to estimate profitability of constructing new generation and supporting the on-going cost of a new generator. It does not reflect profitability of any specific existing generator. Many costs, such as supply adequacy penalties and individual contracts, are not included in this analysis.

[130] Net revenue is equal to revenues minus estimated marginal cost.

This is a very high-level analysis that uses several assumptions and averages. Daily averages at a hub were used for gas prices. A single gas hub was assumed for each region. These gas prices did not account for bilateral trades or any additional charges not represented by the hub price. Energy prices used were daily unweighted averages across the footprint.

Figure 4–40 provides the cost assumptions for a new generator. A capital recovery factor of 12.6 percent was used in the annual fixed operating and maintenance cost component.

Figure 4–40 Net revenue analysis assumptions

	Scrubbed coal	Combined-cycle	Combustion turbine	Wind	Solar
Size (MW)	650	418	237	200	150
Total overnight cost ($/kW-yr)	$5,096	$1,201	$785	$1,718	$1,748
Variable overhead and maintenance ($/MWh)	$7.41	$2.67	$5.96	$0	$0
Fixed overhead and maintenance ($/kW-yr)	$56.84	$14.76	$7.33	$27.57	$33.67
Heat rate (Btu/kWh)	9,751	6,431	9,905	n/a	n/a

Source: EIA Cost and Performance Characteristics of New Generating Technologies, Annual Energy Outlook 2022

Figure 4–41 shows the results of the market-wide net revenue analysis. The analysis assumes the market dispatches the hypothetical resource when the day-ahead[131] price exceeds the short-run marginal cost of production.[132] Natural gas prices were based on the Panhandle Eastern Pipeline Company (PEPL) pipeline. To determine the variable cost of a new gas resource, these gas prices were multiplied by a heat rate and added to a variable operation and maintenance cost. The energy prices and variable costs determined a resource's margin, which determined the annual net revenue from SPP. Wind was attributed a capacity factor of 37 percent across all hours while solar was attributed a capacity factor of just under 40 percent during peak hours. Additionally, the average marginal cost of wind has been credited to account for production tax

[131] Real-time prices produce similar results.
[132] Parameters such as start-up time, minimum down time, max daily energy, and ramp rate are not modeled. This analysis assumes the resources is always available at maximum capacity.

incentives. The annual revenue requirement represents the cost to construct the generator and its fixed operating and maintenance cost.

Figure 4–41 Net revenue analysis results

Technology	Average marginal cost ($/MWh)	Net revenue from SPP market ($/MW yr.)	Annual revenue requirement ($/MW yr.)	Able to recover new entry cost	Annual fixed O&M cost ($/MW yr.)	Able to recover fixed O & M cost
Scrubbed coal	$26.62	$197,629	$696,773	No	$54,570	Yes
Combined-cycle (single-shaft)	$49.44	$117,767	$165,576	No[133]	$14,760	Yes[133]
Combustion turbine (industrial frame)	$78.00	$41,598	$105,907	No[133]	$7,330	Yes[133]
Wind	-$30.00	$245,237	$243,309	Yes[134]	$27,570	Yes
Solar PV (storage)	$0.00	$126,083	$253,176	No	$33,670	Yes

With the exception of potentially 2021, SPP market revenues have been insufficient to support the cost of new entry of thermal generation since the inception of the Integrated Marketplace in 2014. Since 2015, regional average prices have supported the ongoing maintenance cost of combined-cycle and combustion turbine units but have not supported the ongoing maintenance cost of coal units. Thus, for a hypothetical gas-powered generator, the net revenues are not sufficient to cover new investment. However, whether revenues would support new investment more broadly may not be as clear given specific differences in revenues and costs. The analysis supporting Figure 4-41 is a market-wide analysis and does not account for regional and resource-specific factors influencing margin such as fuel storage, fuel contracts, etc. Currently, at the market level, revenues are only sufficient to ensure the cost of new entry is recovered for wind turbines.

[133] For gas resources, a simple yes or no is not sufficient to explain whether or not resource can recover costs. This analysis uses market-wide energy prices and average prices at gas hubs to determine profit margins. If a gas resource used an alternate fuel or had fuel storage, then that resource's margin would be large, and it could have recovered all of its costs. However, if a resource bought gas at the extreme prices, then it would not have sufficient margin to recover costs. Because this analysis is performed on a market-wide basis, and not per resource, the wide range of profit margins cannot be generalized to a yes-or-no determination.
[134] Wind generation was likely to be able to recover its cost of new entry if it was able to generate at the annual average capacity factor.

Net revenues were calculated using average daily gas prices and average daily energy prices. The volatility of both gas and energy prices cause the average to be less representative of more granular market conditions and, therefore, less reliable for long-term investment decisions. As stated above, if gas resources were available with a secondary fuel source, their profit margins could have been very high, similar to coal and wind.

To determine how long run price signals for investment may vary across the footprint, a regional analysis is needed. Figure 4–42 provides results by SPP resource zone, as indicated by the dominant utility in the area.

Figure 4–42 Net revenue analysis by zone

	Coal			Combined-cycle			Combustion turbine		
Resource zone	Net revenue from SPP market ($/MW yr)	Able to recover net entry cost	Able to recover fixed O&M cost	Net revenue from SPP market ($/MW yr)	Able to recover net entry cost	Able to recover fixed O&M cost	Net revenue from SPP market ($/MW yr)	Able to recover net entry cost	Able to recover fixed O&M cost
AEP	$261,207	No	Yes	$159,083	No	Yes	$55,343	No	Yes
KCPL	$173,765	No	Yes	$96,451	No	Yes	$32,174	No	Yes
NPPD	$151,449	No	Yes	$80,648	No	Yes	$27,216	No	Yes
OGE	$250,940	No	Yes	$163,302	No	Yes	$73,104	No	Yes
SPS	$200,198	No	Yes	$137,999	No	Yes	$54,039	No	Yes
WAUE	$177,698	No	Yes	$93,162	No	Yes	$28,777	No	Yes

	Wind			Solar		
Resource zone	Net revenue from SPP market ($/MW yr)	Able to recover net entry cost	Able to recover fixed O&M cost	Net revenue from SPP market ($/MW yr)	Able to recover net entry cost	Able to recover fixed O&M cost
AEP	$278,256	Yes	Yes	$148,166	No	Yes
KCPL	$226,745	No	Yes	$114,789	No	Yes
NPPD	$214,404	No	Yes	$103,658	No	Yes
OGE	$264,535	Yes	Yes	$145,260	No	Yes
SPS	$244,440	Yes	Yes	$123,003	No	Yes
WAUE	$235,829	No	Yes	$114,881	No	Yes

Overwhelmingly, the conclusions do not vary geographically, despite differing energy prices and fuel costs. Historically, the SPS region has had higher net revenues than other regions for gas resources. This is likely because combined-cycle plants and combustion turbines in the Permian

Basin (West Texas) region consistently experience below average natural gas prices. However, this year the analysis showed that a gas resource in the AEP and OGE regions could have had higher revenues, though this was primarily driven by higher energy prices in these regions as both regions still experienced higher gas prices on average than SPS.

Based on these results, the MMU expects the market to continue to signal the retirement of some coal generation while also not signaling the long-term investment of other types of new generation. A decrease in overall available capacity—along with observed higher outages—and changes in the generation fleet profile could present challenges for reliability (see section 2.9 and section 3.4 for a more detailed analysis).

External economic decisions can provide additional impetus needed for new generation investments, such as the expansion of corporate renewable goals, SPP out-of-market payments, bilateral contracts, purchase power agreements, SPP market protocol requirements, federal and/or state incentives, state-regulated investments, emerging technologies, and/or emission reduction plans. However, market prices, by themselves, have not historically signaled new generation entry since the inception of the Integrated Marketplace. Other revenue streams for value added could change this conclusion. For instance, resources could be paid to ensure their generation is highly dependable, or resources could be paid to remain available for specific performance requirements in the short to medium timeframe. As the market is currently designed, it does not incentivize new entry for energy capacity.

Out-of-market actions by SPP operators, and the resultant uplift payments, for reliability (manual) commitments reflect some of the symptomatic issues. However, these do not necessarily signal the overall need for more steel-in-the-ground generation. Make-whole payments fund cost recovery and do not necessarily increase net revenue. If these make-whole payments were represented in a market price for a product, then this would likely reduce make-whole payments for manual commitments, but it would not necessarily increase net revenue. Because make-whole payments do not increase net revenue, they do not necessarily indicate the need for additional energy capacity. However, as previously mentioned, products could be implemented to pay for specific performance requirements, such as highly dependable available generation, schedulable generation, or rampable capacity. If such products were implemented, these product prices may indicate the need for these specific, non-energy capacity products.

Continuing to value flexibility will be important going forward. Compensation for reliable accreditation and performance could be an additional revenue stream to high-performing generation. This is discussed in more detail in chapter 7 of this report. The effectiveness of the pricing of such products and capacity ratings to align reliability and economics will shape future price signals for investment in the SPP market.

5 CONGESTION AND TRANSMISSION CONGESTION RIGHTS MARKET

This chapter reviews transmission congestion in the SPP market footprint, as well as the transmission congestion rights market in the Integrated Marketplace. Key points from this chapter include:

- The areas that experienced the highest congestion costs in 2022 were the southeastern corner of the SPP footprint, as well as a concentrated area in southeast North Dakota near the MISO seam. Much of Kansas, Nebraska, South Dakota, and a concentrated area in northwest Oklahoma experienced the lowest congestion costs for the year.
- Overall, congestion patterns were similar as the previous year in the SPP footprint but price splits were greater with lower congestion costs in high wind areas and higher congestion costs in the southeastern corner of SPP that is predominately natural gas resources. Intervals having no congestion are again rare in day-ahead in 2022 but decreased by more than half in real-time. Intervals having a breached constraint increased again in 2022 with over three-quarters of the intervals breached in the real-time market.
- The 2021 frequently constrained area study identified the southwest Missouri and southeast Oklahoma areas and these areas continued to see elevated congestion prices in 2022.
- In aggregate, load-serving entities covered 137 percent of their congestion cost and non-load-serving entities covered 108 percent of their total congestion cost.
- Individual market participants hedged congestion with varying degrees of effectiveness. Overall 72 percent of load-serving entities recovered at least all of their congestion cost.
- Total congestion payments for 2022 were nearly $2.0 billion; up from $1.2 billion in 2021. This marked increase can primarily be attributed to the proximity of existing generation to load, the proximity of newly constructed generation to load, the outage of key transmission facilities, and the volatility in fuel prices.

- Transmission congestion rights funding fell outside the target range. While the annual funding percentage increased to 88 percent from 84 percent, the annual shortfall worsened by more than $85 million year over year.
- Auction revenue right funding decreased from 128 percent to 122 percent. Relatedly, the ARR surplus increased by more than $140 million year over year.
- Participants can transfer congestion rights through use of a bulletin board or sell back positions in the auction. However, most congestion rights are not transferred or sold. Intra-auction sales[135] increased slightly in volume, and averaged about six percent of the total auction volume. Bulletin board trades amounted to less than one percent of the total auction volume cleared during 2022.

5.1 TRANSMISSION CONGESTION

The locational marginal price (LMP) for over 1,300 settlement locations in the SPP market reflects the sum of three components:

1) marginal energy component (MEC) - system-wide marginal cost of the energy required to serve the market,
2) marginal congestion component (MCC) - the marginal cost of any increase or decrease in energy at a location with respect to transmission constraints, and
3) marginal loss component (MLC) - the marginal cost of any increase or decrease in energy to minimize system transmission losses.

$$LMP = MEC + MCC + MLC$$

LMPs are a key feature of electricity markets that ensure the efficient scheduling, commitment, and dispatch of generation given the system load and reliability constraints. LMPs also provide price signals for efficient incentives for future generation and transmission investment and help guide retirement decisions.

This section focuses on the congestion and loss components of price and related items including:

- geographic pattern of congestion and losses,

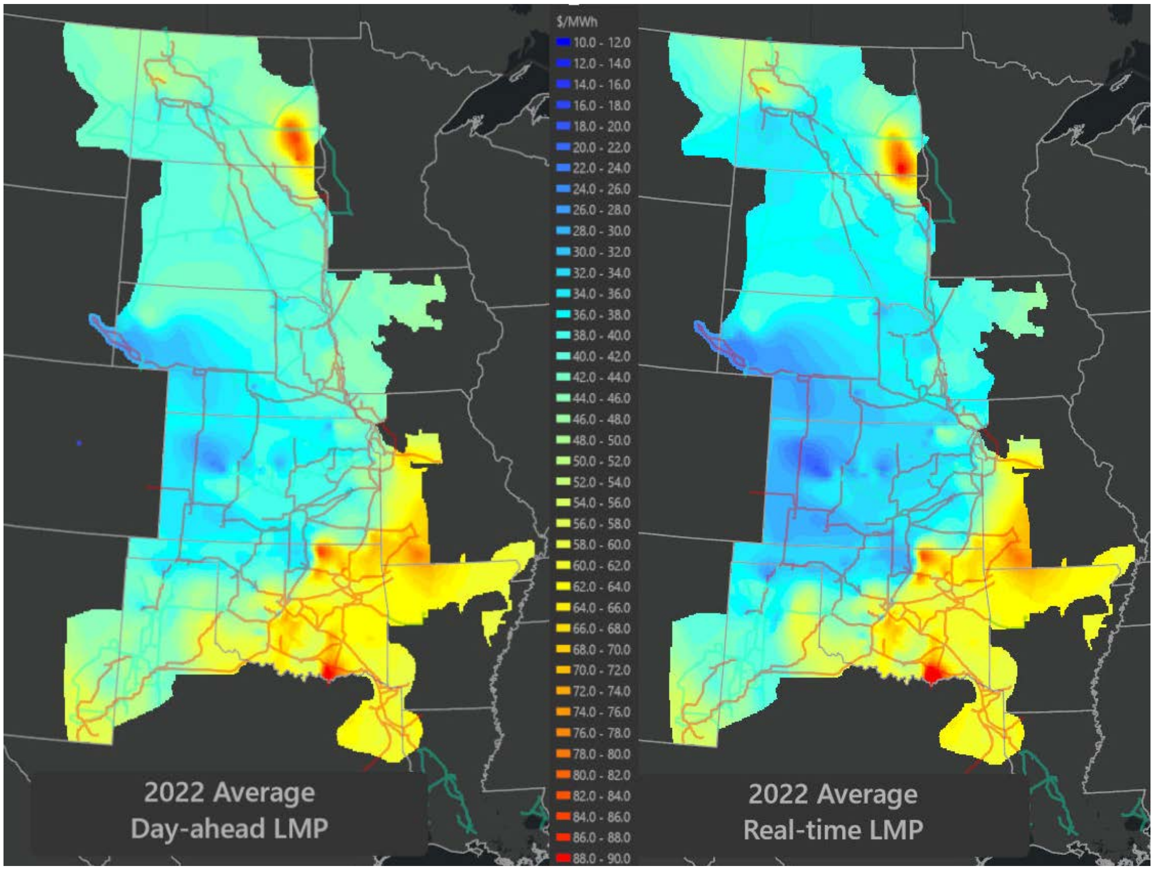
[135] The sale of a previously acquired position in a subsequent auction.

- changes in the transmission system that alter congestion patterns,
- congestion impacts on local market power,
- load-serving entities hedging congestion costs in the transmission congestion rights market, and
- distribution of marginal congestion and loss amounts.

5.1.1 PRICING PATTERNS AND CONGESTION

Figure 5–1 shows price contour maps representing the day-ahead and real-time average prices in 2022.

Figure 5–1 Price map, day-ahead and real-time market



Annual average day-ahead market prices ranged from around $16/MWh on the western edge of SPP to around $92/MWh in the south section of Oklahoma. Congestion accounted for about 85 percent of the price variation and marginal losses accounted for 15 percent in 2022. This is the highest percentage in price variation due to congestion since the beginning of the Integrated

Marketplace in 2014. Because congestion is more volatile in the real-time market, the average geographic price range is slightly larger, from $10/MWh to $100/MWh.

Transmission buildout has allowed higher levels of low-cost wind generation in the western parts of the SPP footprint to serve load centers located in the eastern portions of SPP. In addition, congestion remains mainly on the southeastern edge of SPP extending from northern Missouri to south Oklahoma.

The southwest Missouri[136] area along the SPP eastern border continued to see congestion with average real-time prices increasing from around $39/MWh in 2021 to around $66/MWh in 2022. Another area along the SPP border that continues to see consistent congestion is southeast Oklahoma.[137] Prices in this area were some of the highest in SPP with an average real-time price of $98/MWh in 2022. Congestion has also been prevalent around Oklahoma City[138] for the past four years with average prices of $37/MWh in 2021 and $70/MWh in 2022. Lastly, real-time prices in a concentrated area in southeast North Dakota around a MISO market-to-market constraint[139] averaged over $95/MWh in 2022.

5.1.2 CONGESTION BY GEOGRAPHIC LOCATION

The major drivers of the congestion pattern in SPP are the physical characteristics of the transmission grid and associated transfer capability, the geographic distribution of load, the geographic differences in fuel costs, and external flows from neighboring areas. The eastern side of the SPP footprint, with a higher concentration of load, also has a higher concentration of high-voltage (345 kV) transmission lines. Historically, high-voltage connections between the west and east have been limited but transmission buildout has resulted in most congestion occurring on the southeastern edge of the SPP footprint.

The costs of coal-fired generation increases as transportation costs rise. For example, transportation cost increases with distance from the Wyoming Powder River Basin near the northwest corner of SPP's footprint. This is important because even though it is declining, coal still accounts for 23 percent of SPP's installed capacity and 33 percent energy generation in 2022.

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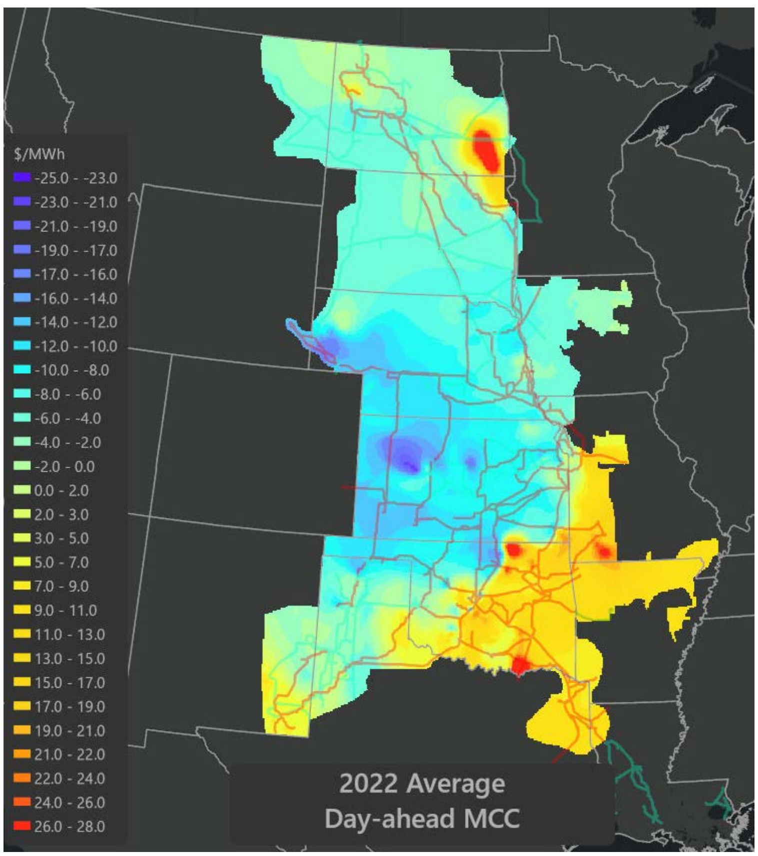
[136] NEORIVNEOBLC (Neosho – Riverton 161kV for the loss of Neosho – Blackberry 345kV)
[137] TMP109_22593 (Stonewall Switch – Tupelo Tap 138kV for the loss of Seminole – Pittsburg 345kV), TEMP29_23044 (Stonewall Switch - Tupelo Tap 138kV for the loss of Pittsburg-Valliant 345kV), TMP322_23590 (Stonewall Switch - Tupelo Tap 138kV for the loss of Sunnyside-Terry Road 345kV) and TMP493_24541 (Stonewall Switch - Tupelo Tap 138kV for the loss of Sunnyside-Hugo 345kV)
[138] FRAMIDCANCED (Franklin – Midwest 138kV for the loss of Cedar Lane – Canadian 138kV)
[139] TMP499_26328 (Forman Xfmr 230/1 kV ftlo Hankinson-Wahpeton 230kV)

Natural gas-fired generation, SPP's largest fuel type by installed capacity (37 percent in 2022), resides predominantly in the southern portions of SPP. Wind-powered generation generally lies in the western half of the footprint, and nuclear generation resides near the center, while the majority of hydro is located in the north.

These factors combine to create a general northwest to southeast split in prices. One exception is slightly higher prices in the northern area of North Dakota along the border of Montana resulting from the growth of, and associated demand from, oil and gas exploration and production facilities. Other exceptions are along the MISO seam in North Dakota near a MISO constraint[140] and the lower southwest section of the SPP region around Lubbock, Texas and New Mexico.

Figure 5–2 depicts the average marginal congestion component for the day-ahead market across the SPP footprint in 2022.

Figure 5–2 Marginal congestion cost map, day-ahead market



140 TMP499_26328 (Forman Xfmr 230/1 kV ftlo Hankinson-Wahpeton 230kV)

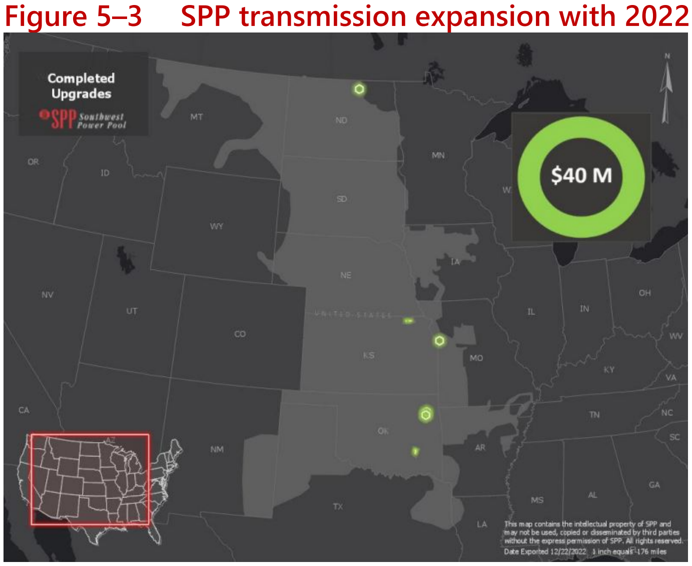
The lowest average day-ahead marginal congestion costs occurred in the concentrated areas around west Kansas and west Nebraska, at -$20/MWh to -$16/MWh. The highest marginal congestion costs lie around the congestion in southeast Oklahoma and along the MISO seam in North Dakota, at almost $39/MWh.

The congestion in the southwest Missouri area increased from 2020 to 2021 and again in 2022. Congestion remained consistent in this area and in neighboring areas to the south, such as northwest Arkansas, Tulsa, and eastern Oklahoma. Transmission buildout over the years has widened congestion along the southeastern edge of the SPP footprint.

5.1.3 TRANSMISSION EXPANSION

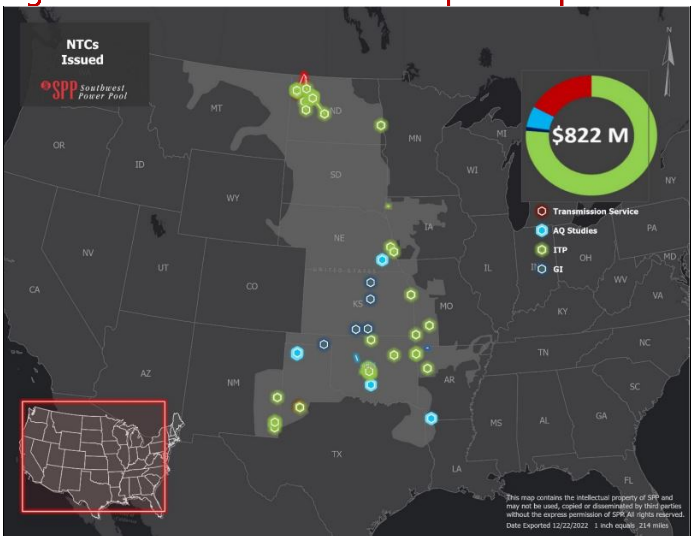
Transmission projects totaling almost $40 million were completed or expected completion during 2022 (shown on Figure 5–3 below) will support the efficient transmission of energy across the SPP footprint and promote reliability. A list of these projects are included in the SPP Transmission Expansion Plan report.[141] SPP's Transmission Planning processes such as the Integrated Transmission Planning assessment, Generation Interconnection studies, and Transmission Service studies identify needs for transmission projects. The Integrated Transmission Planning assessment identified the projects in Figure 5–3 and the projects depicted on the map in Figure 5–4 are projects that will further enhance the SPP transmission grid in future years.

Figure 5–3 SPP transmission expansion with 2022 in-service date



[141] 2023 SPP Transmission Expansion Plan Report in Board of Directors/Members Committee January 31, 2023 meeting materials.

Figure 5–4 SPP transmission expansion plan



The SPP board of directors approved these projects and received a written notice from SPP to construct, or notification to construct (NTC) in 2022. The Integrated Transmission Plan (ITP) projects shown were identified in the ITP process looking ahead 10 years and seek to target a reasonable balance between long-term transmission investments and congestion costs to customers. The Generation Interconnection and Transmission Services projects were identified through aggregate studies of customers requesting generator interconnection projects or long-term requests for network and point-to-point transmission service. Projects identified to accommodate changes in delivery point facilities were through the AQ Studies process identified in Attachment AQ in the SPP tariff.

Figure 5–9 lists planned projects that may provide relief for the most congested areas in SPP. The planned projects in Figure 5–4 and Figure 5–9 will support the efficient transmission of energy across the SPP footprint and promote reliability. However, recent analysis by SPP staff has shown significant delays of several transmission projects, which will slow the benefits of these upgrades and can result in increased congestion costs. The transparency on these delays is currently limited. Therefore, the MMU recommends improving situational awareness of transmission upgrades and improving the process to reassign projects should transmission owners be unable to perform the upgrades in a reasonable timeframe.[142]

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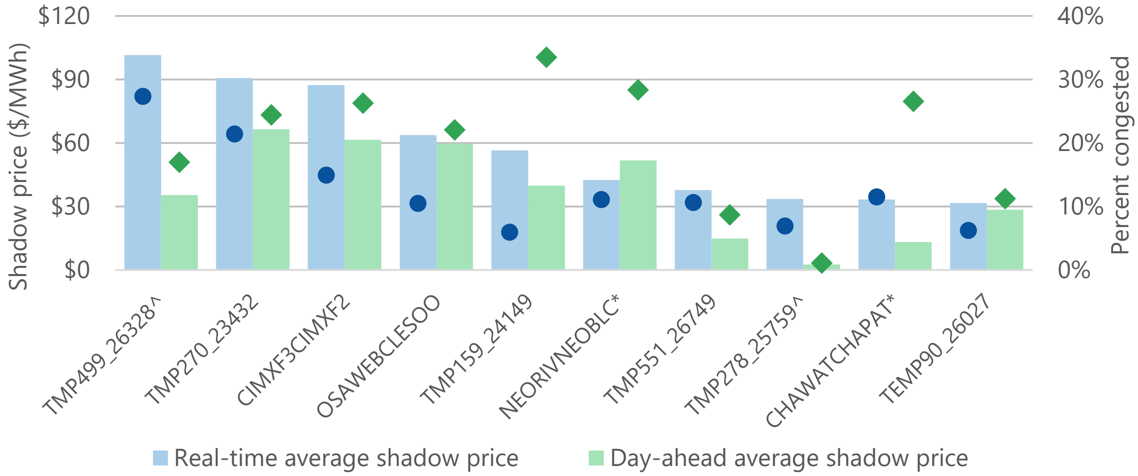
[142] See new recommendation 2022.3, Improve situational awareness of transmission upgrades and improve process to reassign projects in section 7.1.

5.1.4 TRANSMISSION CONSTRAINTS

Market congestion reflects the economic dispatch cost of honoring transmission constraints. SPP uses these constraints to manage the flow of energy across the physical bottlenecks of the grid in the least costly manner while ensuring reliability. In doing so, SPP calculates a shadow price for each constraint, which indicates the potential reduction in the total market production costs if the constraint limit were increased by one megawatt for one hour. Figure 5–5 provides the top 10 flowgate constraints by shadow price for 2022.

Figure 5–5 Congestion by shadow price, top 10 flowgates



Flowgate name	Region	Flowgate location
TMP499_26328^	North Dakota	Forman Xfmr 230/1 kV ftlo Hankinson-Wahpeton 230kV (OTP)
TMP270_23432	Oklahoma	Cleveland-Cleveland AECI 138 kV (AECI-GRDA) ftlo Cleveland-Tulsa North 345 kV (CSWS-GRDA)
CIMXF3CIMXF2	Oklahoma City	Cimarron Xfmr 345/1 kV ftlo 3 contingent elements of Cimarron Xfmr (OKGE)
OSAWEBCLESOO	Oklahoma	Osage-Webb Tap 138 kV (CSWS-OKGE) ftlo Sooner-Cleveland 345 kV (GRDA-OKGE)
TMP159_24149	South Oklahoma	Russett-South Brown 138kV (WFEC) ftlo Little City-Brown Tap 138kV (OKGE)
NEORIVNEOBLC*	SW Missouri/ SE Kansas	Neosho-Riverton 161kV (EDE-WR) ftlo Neosho-Blackberry 345kV (AECI-WR)
TMP551_26749	Texas Panhandle	Conway-Kirby Sw. Station 115kV (SPS) ftlo Nichols-Grapevine 230kV (SPS)
TMP278_25759^	Missouri	Overton Xfmr 345/161 kV (AMRN) ftlo Overton-McCredie 345 kV (AECI-AMRN)
CHAWATCHAPAT*	North Dakota	Charlie Creek-Waterford City 230kV (WAUE) ftlo Charlie Creek-Patentgate 345kV (WAUE)
TEMP90_26027	SW Missouri	Monett-Aurora 161kV (EDE) ftlo Blackberry-Jasper 345kV (AECI)

* SPP market-to-market flowgate during all or part of 2022

^ MISO market-to-market flowgate during all or part of 2022

The southeastern edge of the SPP footprint from northern Missouri to southern Oklahoma continues to see higher prices. This results from congestion impacted by inexpensive wind generation in the west and external flows from the east. Areas around Tulsa, Oklahoma City, and southeast Oklahoma continue to see consistent congestion in 2022. The Cleveland-Cleveland AECI[143] flowgate west of Tulsa was the second most congested flowgate in 2022 with an average shadow price over $90/MWh in the real-time. The Cimarron transformer[144] flowgate near Oklahoma City averaged a real-time shadow price of $87/MWh. The Russett-South Brown[145] flowgate in southeast Oklahoma averaged a real-time shadow price over $56/MWh. The Neosho-Riverton[146] flowgate was the only SPP market-to-market constraint to appear as one of the top 10 most congested flowgates in 2022 averaging a real-time shadow price of $42/MWh.

Two MISO market-to-market flowgates appeared as two of the top 10 most congested constraints in real-time in 2022. One of these is the Forman transformer[147] that had the highest average real-time shadow price of $101/MWh in 2022 but only averaged $35/MWh in the day-ahead in 2022. This constraint was not congested in the SPP day-ahead market until October 1, 2022. The joint Market-to-Market Coordination study[148] for the SPP Regional State Committee and Organization of MISO States highlights this inefficiency. The MMU recommended in 2020 that SPP collaborate with MISO to study and address this and other inefficiencies in its 2020 annual state of the market report.[149] This flowgate was congested in 27 percent of intervals in real-time compared to 17 percent of the intervals in the day-ahead. All day-ahead congested intervals occurred after October 1, 2022 when SPP began including MISO constraints consistently in the day-ahead market.

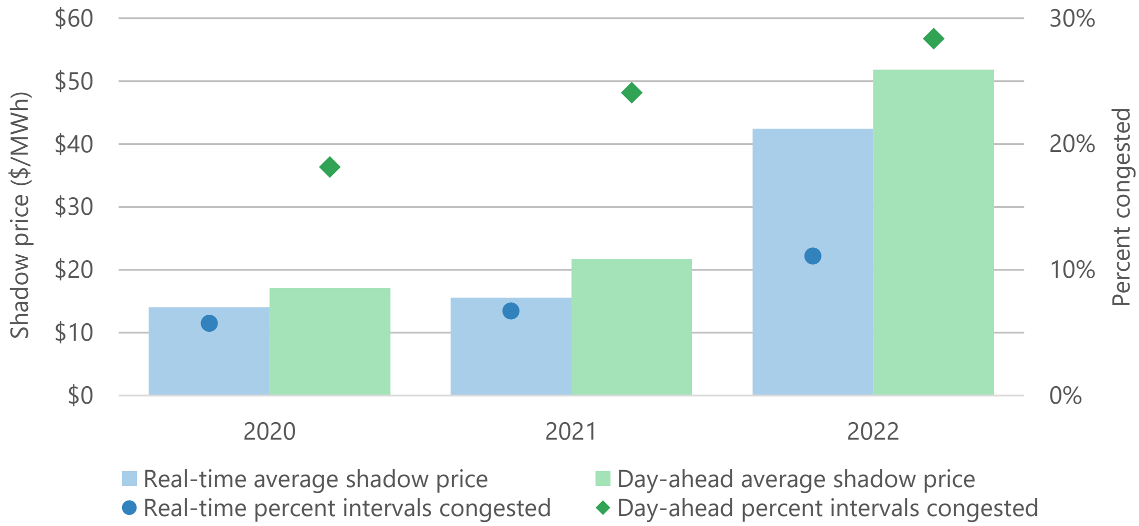
5.1.4.1 Southwest Missouri

SPP and MISO wind, as well as flows from neighboring non-market areas[150] impact the southwest Missouri area. The primary constraint in this area is the Neosho – Riverton[151] market-to-market flowgate and dates back prior to the start of the Integrated Marketplace. This

[143] TMP270_23432: Cleveland-Cleveland AECI 138 kV ftlo Cleveland-Tulsa North 345 kV
[144] CIMXF3CIMXF2: Cimarron Xfmr 345/1 kV ftlo 3 contingent elements of Cimarron Xfmr
[145] TMP159_24149: Russett-South Brown 138kV ftlo Little City-Brown Tap 138kV
[146] NEORIVNEOBLC: Neosho-Riverton 161kV ftlo Neosho-Blackberry 345kV
[147] TMP499_26328: Forman transformer 230//1kV ftlo Hankinson-Wahpeton 345kV
[148] OMS-RSC Seams Study: Market-to-Market Coordination prepared by Potomac Economics
[149] SPP MMU 2020 Annual State of the Market report
[150] Neighboring non-markets include Tennessee Valley Authority, Associated Electric Cooperative Inc., and Southwestern Power Administration.
[151] NEORIVNEOBLC: Neosho-Riverton 161kV ftlo Neosho-Blackberry 345kV

constraint was one of the top 10 congested flowgates in 2022. Section 5.1.5 notes the Neosho-Riverton 161kV project that may provide relief to this area. This upgrade was energized in January 2023. Figure 5–6 compares congestion on the Neosho – Riverton 161kV constraint since 2020.

Figure 5–6 Southwest Missouri congestion



Congestion increased significantly from 2021 to 2022 for the Neosho-Riverton 161kV flowgate. The average real-time shadow price increased from $15/MWh in 2021 to $42/MWh in 2022. The day-ahead average shadow price increased from $21/MWh to almost $52/MWh over the same period. The percent of intervals binding in the real-time increased from almost seven percent in 2021 to 11 percent in 2022. Over $73 million in payments from MISO to SPP has settled since the start of the market-to-market process[152] for the Neosho-Riverton constraint. This is the highest amount settled between SPP and MISO for any constraint since the start of the process.

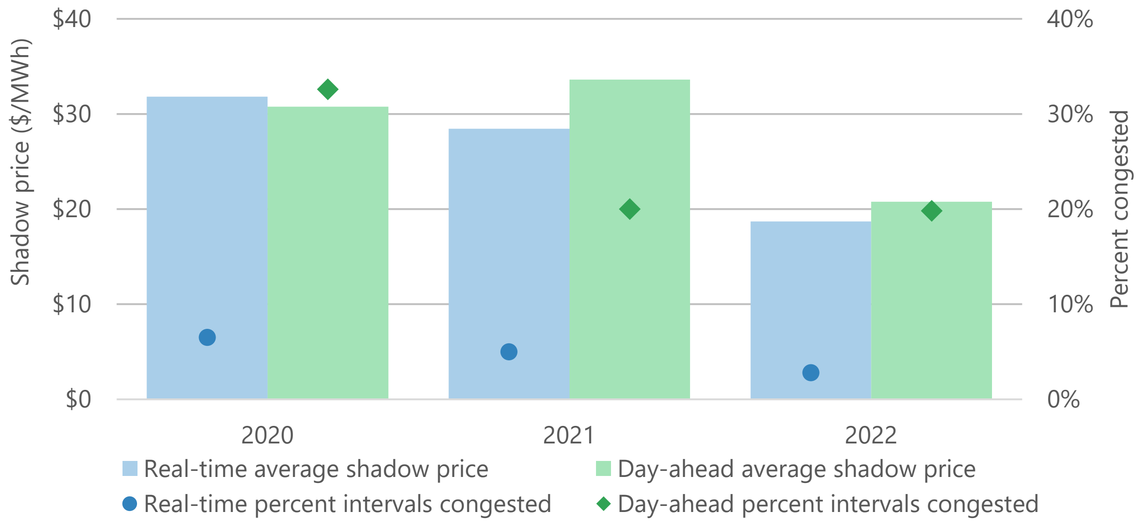
5.1.4.2 Southeast Oklahoma

Another area of consistent congestion over the last few years is the southeast Oklahoma area. There are four constraints with Stonewall Switch – Tupelo Tap 138kV[153] and although none were the top 10 congested flowgates in 2022, at least one of these four constraints appeared in 2019 through 2021. TMP322_23590 was the seventh most constrained flowgate by average real-time shadow price in 2021. TEMP29_23044 was the second most constrained flowgate in 2020 and

[152] The market-to-market process between SPP and MISO began March 2015.
[153] TMP322_23590 (Stonewall Switch-Tupelo Tap 138kV for the loss of Sunnyside-Terry Road345kV), TEMP29_23044 (Stonewall Switch -Tupelo Tap 138kV for the loss of Pittsburg-Valliant 345kV), TMP109_22593 (Stonewall Switch – Tupelo Tap 138kV for the loss of Seminole – Pittsburg 345kV) and TMP493_24541 (Stonewall Switch -Tupelo Tap 138kV for the loss of Sunnyside-Hugo 345kV)

TMP109_22593 was the second most constrained in 2019. These constraints have the same limiting facility with differing contingent facilities. Figure 5–7 compares congestion for all four of the flowgates with the limiting facility of Stonewall Switch-Tupelo Tap since 2020.

Figure 5–7 Southeast Oklahoma congestion

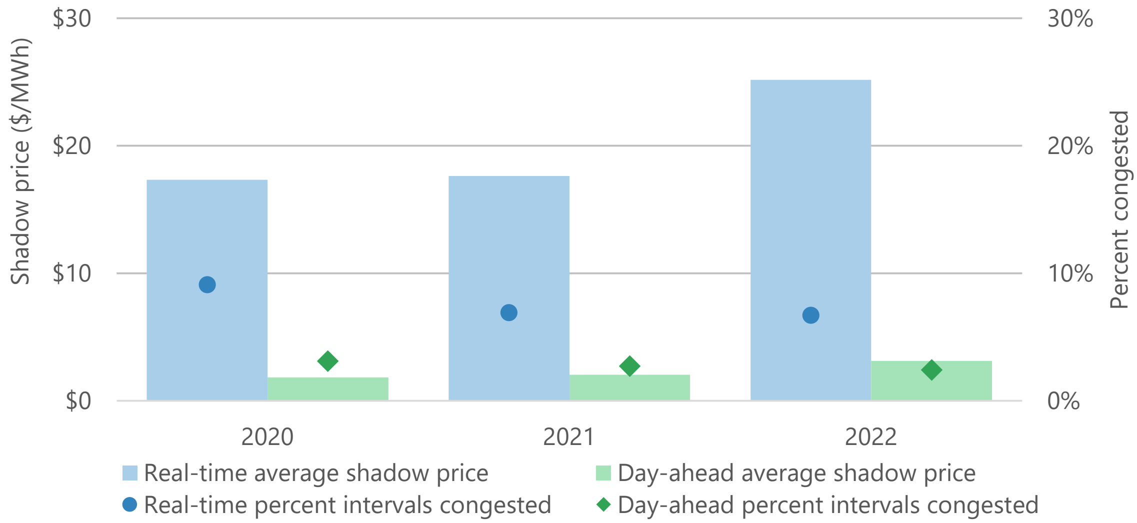


The Stonewall Switch – Tupelo Tap market-to-market flowgates have seen consistent congestion since 2018 (not shown) but decreased in 2022. These constraints experienced congestion in almost 20 percent of all intervals in the day-ahead market in 2022 that is unchanged from 2021. These constraints experienced almost three percent of congestion during all intervals in the real-time market in 2022 compared to five percent in 2021. The average shadow prices in 2022 were almost $19/MWh in real-time and almost $21/MWh in day-ahead.

Another area that has seen consistent congestion in real-time is in the Oklahoma City area. The Midwest - Franklin[154] constraint was the fifth most congested constraint in both 2019 and 2020 but has not appeared as one of the top 10 constraints in 2021 or 2022. However, congestion still increased in 2022 with respect to shadow price. Figure 5–8 compares congestion for this constraint since 2020.

[154] FRAMIDCANCED: Midwest-Franklin 138kV for the loss of Cedar Lane-Canadian 138kV.

Figure 5–8 Oklahoma City congestion



The Midwest – Franklin constraint is located east of Oklahoma City and increased in real-time shadow price from 2021 to 2022. This constraint experiences less congestion in day-ahead when compared to real-time. Almost seven percent of all real-time intervals experienced congestion in 2022 compared to less than three percent of all day-ahead intervals in the same year. This difference between real-time and day-ahead is also apparent in the average shadow prices for both markets where the real-time averages more than $25/MWh and day-ahead only averages $3/MWh.

5.1.5 PLANNED TRANSMISSION PROJECTS

Figure 5–9 provides a list of projects that may alleviate congestion on the 10 most congested flowgates in the SPP system.

Figure 5–9 Top 10 congested flowgates with projects

Flowgate name	Region	Flowgate location	Projects that may provide relief
TMP499_26328^	North Dakota	Forman Xfmr 230/1 kV ftlo Hankinson-Wahpeton 230kV (OTP)	2023 ITP need
TMP270_23432	Oklahoma	Cleveland-Cleveland AECI 138 kV (AECI-GRDA) ftlo Cleveland-Tulsa North 345 kV (CSWS-GRDA)	New Sooner-Wekiwa 345kV line [2019 ITP Assessment [155]]
CIMXF3CIMXF2	Oklahoma City	Cimarron Xfmr 345/1 kV ftlo 3 contingent elements of Cimarron Xfmr (OKGE)	Minco – Pleasant Valley – Draper 345kV [2020 ITP [156]]
OSAWEBCLESOO	Oklahoma	Osage-Webb Tap 138 kV (CSWS-OKGE) ftlo Sooner-Cleveland 345 kV (GRDA-OKGE)	New Sooner-Wekiwa 345kV line [2019 ITP Assessment]
TMP159_24149	South Oklahoma	Russett-South Brown 138kV (WFEC) ftlo Little City-Brown Tap 138kV (OKGE)	NTC 210586 Russett – S Brown Rebuild [2020 ITP]
NEORIVNEOBLC*	SW Missouri/SE Kansas	Neosho-Riverton 161kV (EDE-WR) ftlo Neosho-Blackberry 345kV (AECI-WR)	Neosho -Riverton 161kV Rebuild (ATSS SPP-2019-AG1-AFS-2, Energized January 2023) [157]
TMP551_26749	Texas Panhandle	Conway-Kirby Sw. Station 115kV (SPS) ftlo Nichols-Grapevine 230kV (SPS)	Border – Woodward 345kV [158] and Minco – Pleasant Valley – Draper 345kV [2020 ITP]
TMP278_25759^	Missouri	Overton Xfmr 345/161 kV (AMRN) ftlo Overton-McCredie 345 kV (AECI-AMRN)	MISO LRTP Tranche 1 (Northern Missouri Corridor)
CHAWATCHAPAT*	North Dakota	Charlie Creek-Waterford City 230kV (WAUE) ftlo Charlie Creek-Patentgate 345kV (WAUE)	NTC 210675 Kummer Ridge – Roundup 345 kV
TEMP90_26027	SW Missouri	Monett-Aurora 161kV (EDE) ftlo Blackberry-Jasper 345kV (AECI)	None at this time. Will evaluate in 2023 ITP

* SPP Market-to-Market flowgate during all or part of 2022
^ MISO Market-to-Market flowgate during all or part of 2022

5.1.6 GEOGRAPHY AND MARGINAL LOSSES

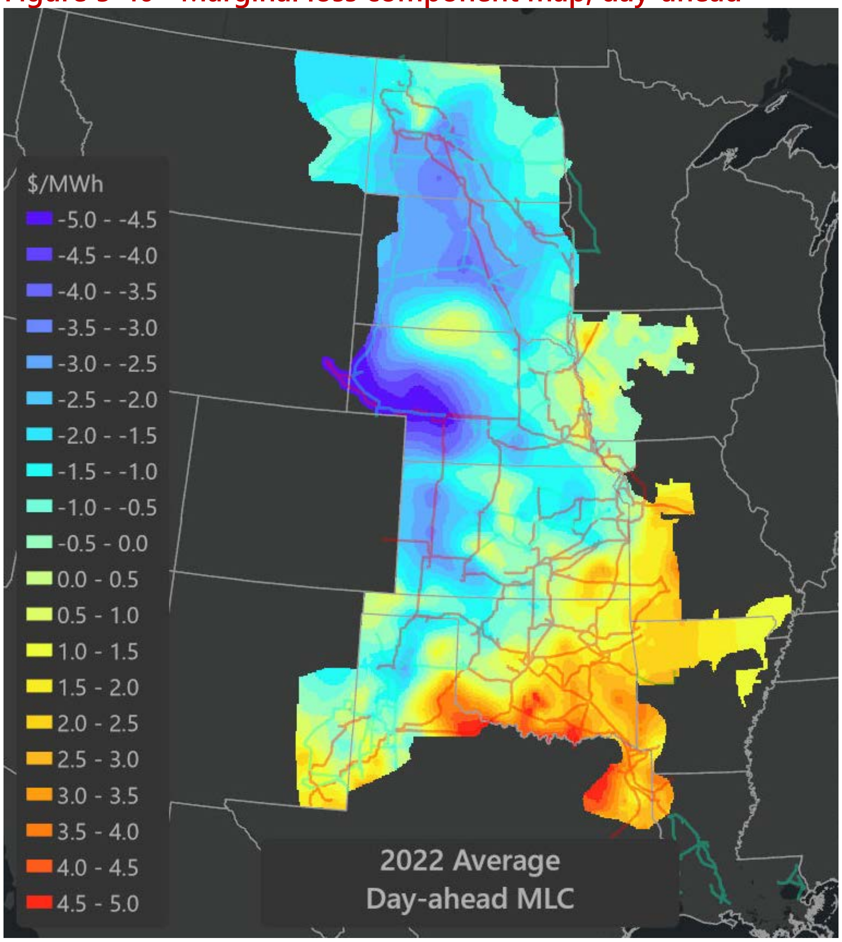
Variable transmission line losses decrease with increased line voltage or decreased line length for the same amount of power moved. In the SPP footprint, much of the low-cost generation resides at a distance from the load and with limited high-voltage interconnection. The average variable losses on the SPP system for 2022 were 3.2 percent in the day-ahead market. This is up slightly from 3 percent in 2021 and 2.7 percent in 2020. The marginal loss component of the

[155] NTC 210540, 210544, and 210593: Multi – Sooner – Wekiwa 345 kV and Sand Springs – Sheffield 138 kV
[156] NTC 210616, 210656, and 210670: Multi – Minco – Pleasant Valley – Draper 345 kV
[157] NTC 210569 and 210570: Line – Neosho – Riverton 161 kV
[158] NTC 210627 and 210628: Multi – Border – Woodward 345 kV Tap

price captures the change in the total system cost of losses with an additional increment of load at a particular location relative to the reference bus.

Figure 5–10 maps the annual average day-ahead market marginal loss components for 2022.

Figure 5–10 Marginal loss component map, day-ahead



The average day-ahead marginal loss component ranges from less than −$7/MWh in western Nebraska to over $6/MWh in southern Oklahoma to eastern Texas. Negative values reduce prices through the marginal loss component relative to the marginal energy cost. Positive values increase prices as generation from these locations are more beneficial from a marginal loss perspective. The $13/MWh spread between geographic prices in 2022 is higher than the $8/MWh spread between geographic prices in 2021 is higher than the $5/MWh spread in 2020.

5.1.7 FREQUENTLY CONSTRAINED AREAS AND LOCAL MARKET POWER

Congestion in the market creates local areas where only a limited number of suppliers can provide the energy to serve local load without overloading a constrained transmission element. Under these circumstances, the pivotal suppliers have local market power and the ability to raise prices above competitive levels thereby extracting higher than normal profits from the market. SPP's tariff provides provisions for mitigating the impact of local market power on prices, and the effectiveness of market power mitigation is described in section 6.2.2. Local market power can be either transitory, as is frequently the case with an outage, or persistent, when a particular load pocket is frequently import-constrained.

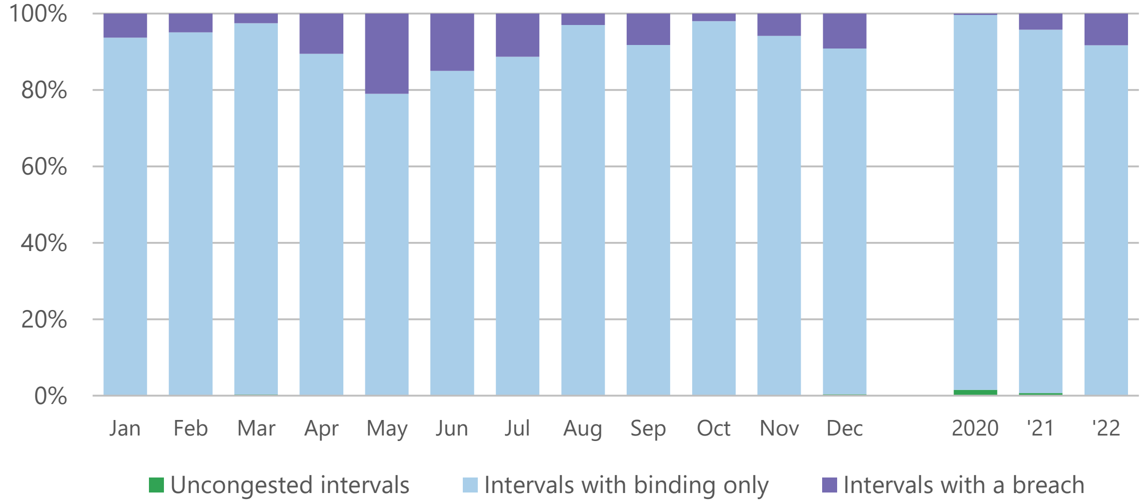
Since the SPP tariff calls for more stringent market power mitigation for frequently constrained areas, the MMU analyzes market data at least annually to assess the appropriateness of the frequently constrained area designations. The 2021 study[159] identified two areas to be added with one being the previous frequently constrained area of southwest Missouri and the other in southeast Oklahoma. These areas experienced increases in pivotal supplier hours in the 2021 study after slightly falling under thresholds in the 2020 analysis. These frequently constrained areas became effective on December 27, 2021. The southwest Missouri frequently constrained area consists of nine constraints and eleven resources while the southeast Oklahoma area consists of seven constraints and five resources. These areas continued to see high levels of congestion in both frequency and price through 2022.

5.1.8 MARKET CONGESTION MANAGEMENT

In optimizing the flow of energy to serve the load at the least cost, the SPP market makes extensive use of the available transmission up to constraint limits. When constraints reach their limits, they are considered binding. The market occasionally allows transmission lines to exceed their rating if the price to correct the overload becomes too high.[160] This is considered a breached constraint. Figure 5–11 highlights day-ahead market binding, breached, and uncongested intervals.

[159] Frequently Constrained Area Report 2021
[160] SPP uses hourly intervals in the day-ahead market and five-minute intervals in the real-time market for scheduling, dispatch, and settlement purposes.

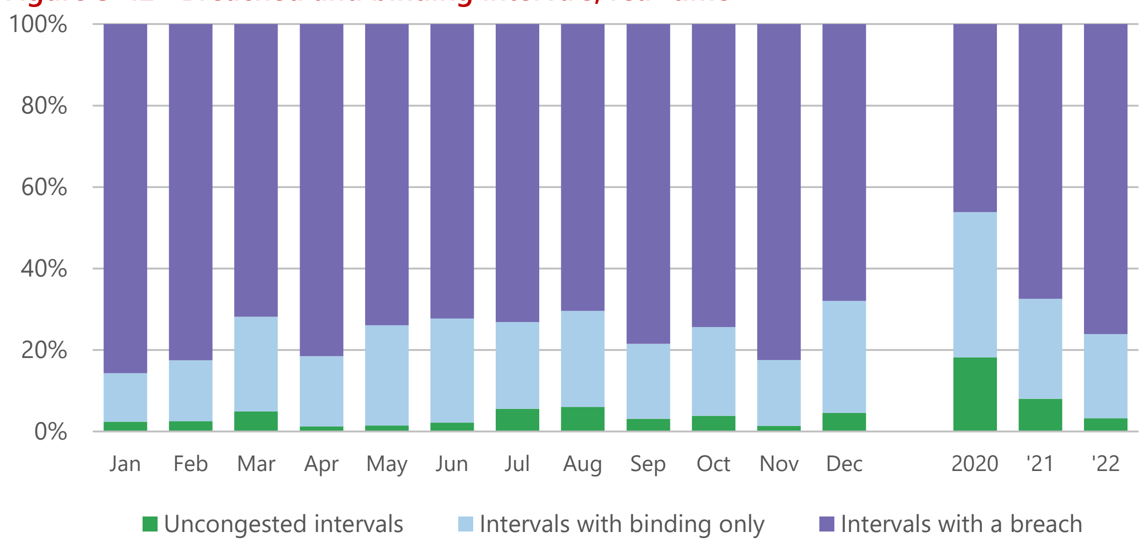
Figure 5–11 Breached and binding intervals, day-ahead market



The figure shows that breached intervals increased in day-ahead market year over year. Historically in the Integrated Marketplace, less than one percent of day-ahead market intervals incur a breached condition but over four percent of intervals incurred a breach in 2021 and increased to over eight percent in 2022. Uncongested intervals in the day-ahead are rare. Less than one percent of intervals were uncongested in the day-ahead in 2021 and 2022 compared to 1.5 percent in 2020.

In the more dynamic environment of the real-time market, uncongested intervals and breached intervals occur more frequently than in the day-ahead market. Real-time congestion is shown in Figure 5–12.

Figure 5–12 Breached and binding intervals, real-time



As shown above, uncongested intervals reduced since 2020. Only three percent of intervals in real-time in 2022 were uncongested compared to eight percent in 2021 and 18 percent in 2020. Real-time intervals with a breached constraint continued to increase since 2018. Intervals with a breach in 2022 were 76 percent compared to 68 percent in 2021 and 46 percent in 2020.

Market-to-market coordination with MISO, as discussed in 2.7.2, was implemented in March 2015. A market-to-market breach of a MISO constraint could be an indicator that MISO has more efficient generation than SPP to alleviate congestion on that constraint. Of the 76 percent of the real-time intervals with a breached constraint in 2022, almost 80 percent of these had a breached market-to-market constraint compared to 85 percent in 2021, 86 percent in 2020, and 74 percent in 2019. This is noticeable in Figure 5–1 and Figure 5–2 showing the congestion on the eastern edge of SPP where neighboring flows are more prevalent.

Real-time congestion by flowgate type is shown in Figure 5–13.

Figure 5–13 Breached and binding intervals real-time, by flowgate type

	Binding			Breached			Uncongested		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Excluding market-to-market flowgates	56%	55%	49%	15%	29%	45%	29%	16%	6%
Market-to-market flowgates only	10%	7%	8%	40%	58%	60%	50%	36%	32%
All flowgates	36%	25%	21%	46%	67%	76%	18%	8%	3%

Internal constraints[161] increased in the percentage of breached intervals in real-time from 2020 to 2021 and again in 2022. The percentage of intervals with a breached market-to-market constraint was 60 percent in 2022, up slightly from 58 percent in 2021. The percentage of intervals with only binding internal constraints fell slightly from 55 percent in 2021 to 49 percent in 2022. The market's ability to maintain flow on constraints at or below their limits are binding, or manageable. Breached constraints indicate the instances where the market allows flow to exceed a constraint's limit at a certain cost. These are also known as unmanageable intervals. As the percentage of uncongested intervals and manageable intervals continue to decrease, unmanageable intervals increase.

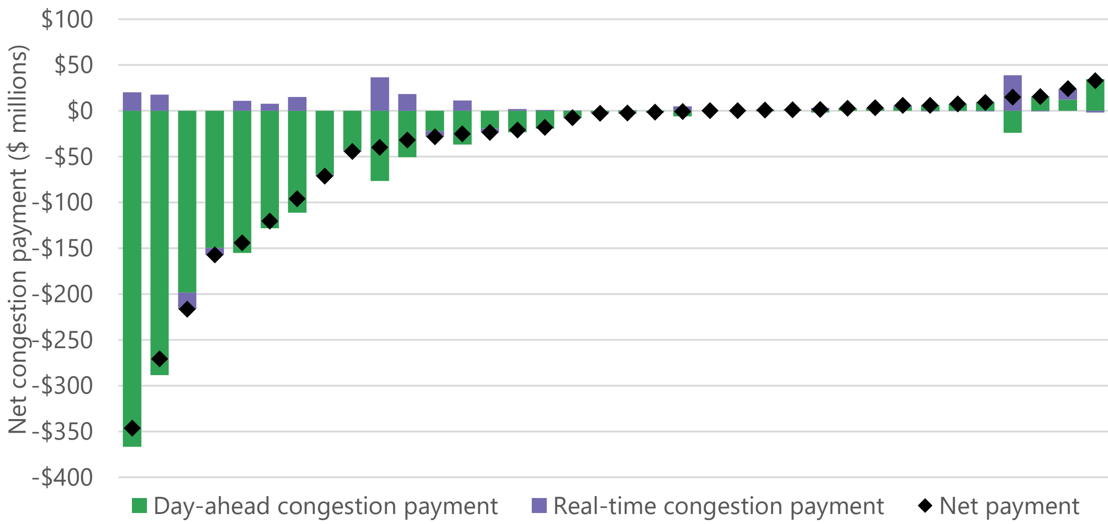
[161] Excluding market-to-market constraints

5.1.9 CONGESTION PAYMENTS AND UPLIFTS

Market participants in the energy market incur congestion costs and receive congestion payments based on their marginal impact on total market congestion cost through the marginal congestion component of price. Most SPP market participants owning physical assets are vertically integrated, so their net congestion cost depends on two things. The first is whether they are a net buyer or seller of energy. The second is the relative marginal cost component at their generation and load. For financial market participants, congestion costs reflect the impact of virtual positions on a binding or breached constraint in the day-ahead and real-time markets.

Figure 5–14 shows the annual day-ahead and real-time market congestion payments for load-serving market participants during 2021.

Figure 5–14 Annual congestion payment by load-serving entity



Most load-serving entities face congestion costs, depicted as negative payments (charges) in the graph. Congestion stems from various injection and withdrawal market activities and can manifest as either a charge or credit. Day-ahead congestion payments ranked by load-serving entities ranged from more than $360 million in charges to almost $35 million in payments.[162]

Market participants also receive payments and incur costs for real-time market congestion, which are charged and paid based on deviations between day-ahead and real-time market positions. At an aggregate level, absent the additional revenue neutrality uplift costs, 92 percent of the SPP load-serving entities' net congestion costs stemmed from the day-ahead market.

[162] Day-ahead congestion collections funds transmission congestion rights. These rights are described in greater detail in Section 5.2.

Figure 5–15 provides the aggregate congestion costs and hedging totals for load-serving entities, non-load-serving entities and financial only entities, and the total for all entities.

Figure 5–15 Total congestion payments

(in $ millions)	Load-serving entities			Non-load-serving and financial-only entities			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Day-ahead congestion	$ 352	$ 849	$ 1,706	$ 225	$ 552	$ 1,020	$ 577	$ 1,401	$ 2,726
Real-time congestion	-9	-10	-158	-127	-240	-527	-135	-250	-685
Net congestion	344	838	1,548	98	312	493	442	1,151	2,042
Real-time congestion uplift	-115	-168	-591	-12	-59	-63	-127	-227	-654

Net congestion payments for 2022 exceeded $2.0 billion, up from nearly $1.2 billion in 2021. This marked increase can primarily be attributed to the proximity of existing generation to load, the proximity of newly constructed generation to load, the outage of key transmission facilities, and the volatility in fuel price.

The real-time market congestion payments result in a net benefit of $158 million for load-serving entities. Total real-time market congestion payments for non-load-serving and financial only entities also resulted in a net benefit and amounted to $527 million. On an individual basis, real-time market congestion ranged from $18 million in payments to nearly $39 million in costs for load-serving entities. Real-time market congestion ranged from $116 million in payments to $67 million in costs for non-load-serving entities. Many of the non-load-serving entities incurring costs represent wind farms, which may sell at negative prices or buy back day-ahead market positions.

Unlike day-ahead congestion, which funds transmission congestion rights, real-time market congestion costs are allocated to market participants through revenue neutrality uplift (RNU) charges. In 2022, SPP allocated about 90 percent of revenue neutrality uplift charges to load-serving entities, resulting in an additional $591 million in congestion-related charges for load-serving entities.[163]

[163] Real-time congestion uplift is not allocated in the same proportion in which it is collected.

5.2 CONGESTION HEDGING MARKET

In the Integrated Marketplace, the locational marginal prices assessed to load are generally higher than the locational marginal prices assessed to generators. The largest portion of this price difference is almost always attributed to congestion. This is an expected outcome and central to the design of nodal electricity markets. The difference between what generators are paid and what loads pay is often referred to as congestion rent. SPP remains revenue neutral in all Integrated Marketplace transactions and therefore must allocate the congestion rent back to the market participants. The congestion hedging market is the mechanism used to allocate congestion over-collections.[164]

5.2.1 MARKET DESIGN

Market participants participate in the congestion hedging market by obtaining auction revenue rights and/or transmission congestion rights. Auction revenue rights begin as entitlements associated with long-term, firm transmission service reservations. These transmission service reservations are a revenue source for transmission owners and an expense for transmission customers. More specifically, transmission owners receive revenues from transmission customers for building and maintaining the transmission lines, and transmission customers pay the transmission owners for the use of the lines by way of the charges associated with transmission service reservations.[165]

Auction revenue rights link the transmission service, which provides physical rights, to the Integrated Marketplace by converting these to financial rights. SPP verifies transmission service entitlements, which become candidate auction revenue rights. To obtain auction revenue rights, market participants nominate candidate auction revenue rights in the annual auction which awards revenue rights from June to May. If the nominations pass the allocation's simultaneous feasibility test, the candidate auction revenue rights become auction revenue rights. The simultaneous feasibility test ensures that the market's aggregate nomination of auction revenue rights does not violate thermal constraint limits under a single contingency.[166] The test incorporates information from the network model, which aids SPP in aligning the supply of auction revenue rights with the capacity of the underlying transmission system. The simultaneous feasibility test aims to ensure the revenues generated from the congestion right auction will sufficiently fund the quantity of auction revenue rights nominated. If a candidate

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[164] With respect to day-ahead congestion rent only.
[165] These charges are assessed through transmission settlements and include various tariff schedules.
[166] *SPP Open Access Transmission Tariff*, Section 5.3.3, Simultaneous Feasibility

auction revenue right nomination fails the simultaneous feasibility test, this reduces the quantity of auction revenue rights successfully converted from candidate rights.[167]

Once market participants have successfully nominated their candidates into auction revenue rights, they must choose to either hold their auction revenue right or convert it into a transmission congestion right through a process known as self-conversion.[168] If a market participant holds their auction revenue right, they will receive, or pay, a stream of unchanged cash flows over the life of the product. The size and direction of the cash flow depends on the market's collective assessment of the congestion rent along the auction revenue right path as assessed by prices during the transmission congestion right auction. If a market participant believes that the auction prices will undervalue the congestion rent associated with their auction revenue right, the market participant will likely self-convert. When a market participant self-converts, their auction revenue right becomes a transmission congestion right, which means their cash flow is subject to the fluctuations in day-ahead market congestion rent.

Financial-only[169] market participants participate alongside traditional utilities in the transmission congestion right auctions to provide additional liquidity and price discovery. All participants compete for the residual network capacity, on price. The auction software attempts to maximize auction revenue without violating the simultaneous feasibility test. This test helps align the supply of transmission congestion rights with the residual capacity of the underlying transmission system. If a transmission congestion right bid fails the simultaneous feasibility test, the quantity of transmission congestion rights successfully obtained will be reduced to the point where the bid no longer violates the test. Once a market participant obtains a transmission congestion right, they can hold it through to settlement, offer it for sale in a subsequent auction, or transact on the bulletin board outside of the auction cycle. The overwhelming majority of positions are held through to settlement.

5.2.2 MARKET TRANSPARENCY

5.2.2.1 Hedging effectiveness by classification

The transmission congestion right and auction revenue right net payments paid to entities in the SPP market are shown in Figure 5–16.

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[167] *SPP MMU State of the Market Report, Spring 2018*, page 50.
[168] SPP Open Access Transmission Tariff, Section 5.4.1 (2)
[169] Financial-only market participants do not generate or serve load in the SPP footprint.

Figure 5–16 Total congestion and hedges

(in $ millions)	Load-serving entities			Non-load-serving and financial only entities			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
DA congestion	352	849	1,706	225	552	1,020	577	1,401	2,726
RT congestion	(9)	(10)	(158)	(127)	(240)	(527)	(135)	(250)	(685)
Net congestion	344	838	1,548	98	312	493	442	1,151	2,042
TCR charges	243	295	815	179	302	700	422	597	1,515
TCR payments	(409)	(859)	(1,737)	(296)	(811)	(1,345)	(705)	(1,671)	(3,082)
TCR uplift	55	124	164	77	189	217	132	312	381
TCR surplus *	(2)	(8)	(11)	(2)	(13)	(15)	(4)	(21)	(25)
ARR payments	(325)	(442)	(1,170)	(19)	(24)	(74)	(344)	(466)	(1,244)
ARR surplus	(72)	(80)	(182)	(6)	(7)	(17)	(78)	(86)	(199)
Net TCR/ARR	(509)	(970)	(2,122)	(68)	(364)	(533)	(577)	(1,334)	(2,655)

* *remaining at year-end*

Payments to load-serving entities of $2.1 billion exceeded their day-ahead congestion costs of $1.7 billion in 2022. Additionally, real-time congestion costs aided load-serving entities by $158 million, thereby reducing total congestion cost to $1.5 billion. This shows that overall, load-serving entities hedged their day-ahead congestion effectively, in aggregate. In 2022, non-load-serving and financial only entities collected transmission congestion right and auction revenue right net revenues of $533 million, which exceeded their day-ahead and real-time market congestions costs of $493 million. Overall, day-ahead congestion cost increased ninety-five percent from $1.4 billion in 2021 to $2.7 billion in 2022.

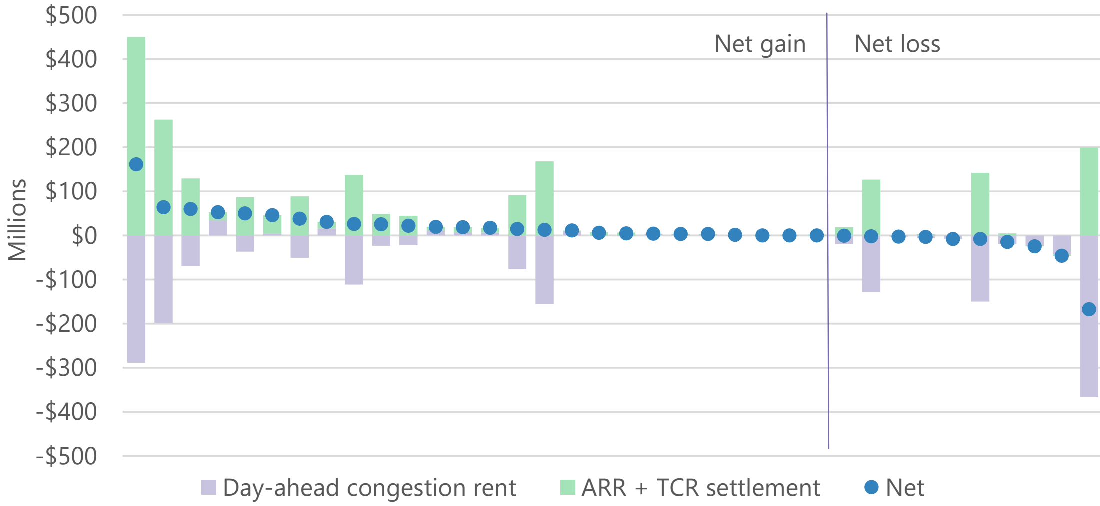
5.2.2.2 Bidding behaviors

The SPP working groups continued dialogue over the past year with respect to obtaining auction revenue rights, and by extension self-converted transmission congestion rights. These discussions and the related policy development are expected to continue. The MMU will continue to take part in its advisory capacity.

As noted above, in aggregate, load-serving entities received more revenue from their congestion hedges than they paid in day-ahead and real-time congestion cost. However, on the individual participant level, some load-serving entities under-hedged while others over-hedged.

Figure 5–17 shows, by load-serving market participant, the day-ahead congestion exposure along with the value of auction revenue rights and transmission congestion rights as well as the net overall position.

Figure 5–17 Net congestion revenue by market participant



The figure highlights that the majority of load-serving participants received positive net revenues, while a handful of participants held portfolios that did not cover their day-ahead congestion costs. For instance, the bottom five participants paid $261 million more in congestion costs than was offset by their auction revenue right and transmission congestion right positions. This is more than double the $125 million paid by the bottom five participants in the 2021 calendar year.

The range of participant outcomes is influenced by three main factors: hedging need, individual participant bidding behavior, and the market's collective bidding behavior.

With respect to hedging need, each participant experiences varying levels of congestion exposure mostly related to geographic location and type of physical interconnection. The various levels of congestion exposure lead to different hedging needs among market participants.

The bidding behavior of the individual participant affects the auction revenue rights they receive through the allocation. Participants can, and do, employ numerous strategies with varying degrees of success.

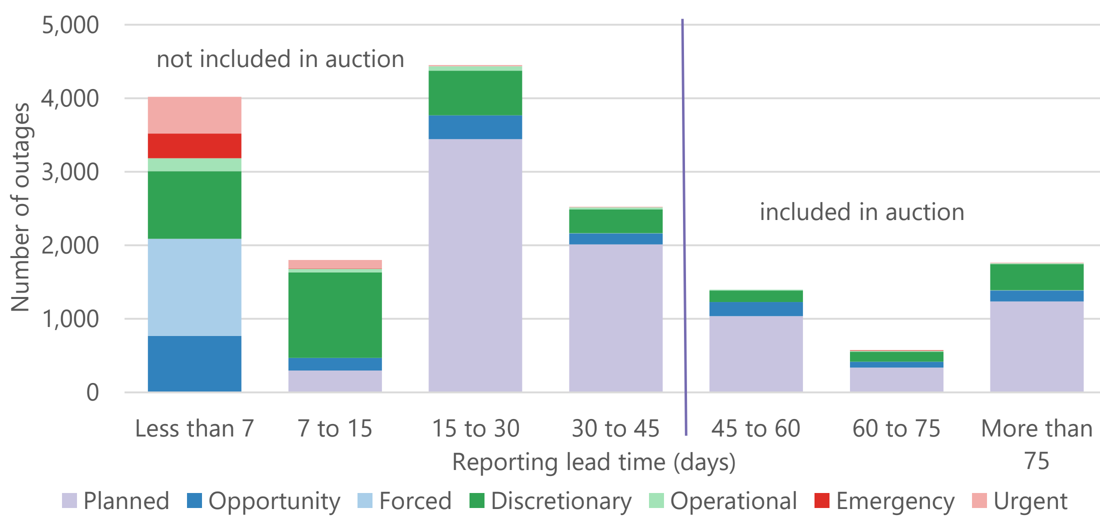
The bidding behavior of the other market participants, as a whole, affects the ability of each and every other market participant to obtain hedges through the auction revenue right allocation. More specifically, if a transaction is physically feasible with respect to transmission service, and by extension the day-ahead market, it does not necessarily mean the transaction will also be feasible in the auction revenue right allocation. The issue arises because the transmission system's capacity, represented by transmission service requests,[170] includes both prevailing flow and counter-flow transactions. However, participants often choose not to nominate their counter-flow candidate auction revenue rights in the allocation process, in part, because these positions tend to carry negative cash flows. These incentives motivate individual participants to abstain from counter-flow positions.[171] By not nominating all candidate auction revenue rights, the capacity in the allocation will not match the capacity of the physical system. Because the basis of the auction revenue right is transmission service, if the two capacities do not align, a participant's auction revenue right may not perfectly hedge their transmission service and their related day-ahead market activity.

Differences between outages modeled in the auction processes and day-ahead market can also affect market participants' ability to obtain hedges. Details on outage modeling are discussed below.

5.2.2.3 Transmission outage modeling

When there are outages in the day-ahead market that were not in the transmission congestion rights auction, there is a reduction in system capacity, which can cause underfunding. Figure 5–18 shows transmission outages by reported lead time.

Figure 5–18 Transmission outages by reporting lead time

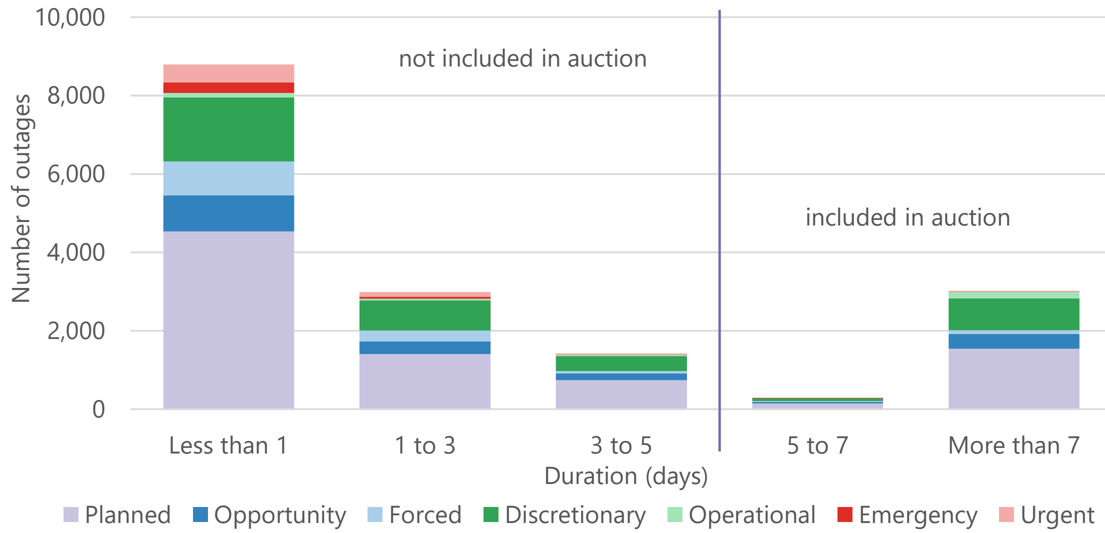


[170] Long-term, firm, transmission service requests
[171] SPP MWG Meeting Materials, 1/22/2019, Item 11a, SPP MMU_ARR Observation.pdf

SPP models only transmission outages that were reported at least 45 days prior to the first of the month in the transmission congestion rights auction.[172] However, SPP only requires transmission owners to submit planned outages 14 days in advance.[173] The above figure shows that the majority of outages are not considered in the transmission congestion rights markets solely due to the submission lead time. Roughly, 77 percent of outages are ruled out of the transmission congestion rights model by this phase alone. This is a similar level as prior years.

Figure 5–19 shows the duration in days for the different types of outages.

Figure 5–19 Transmission outages by duration

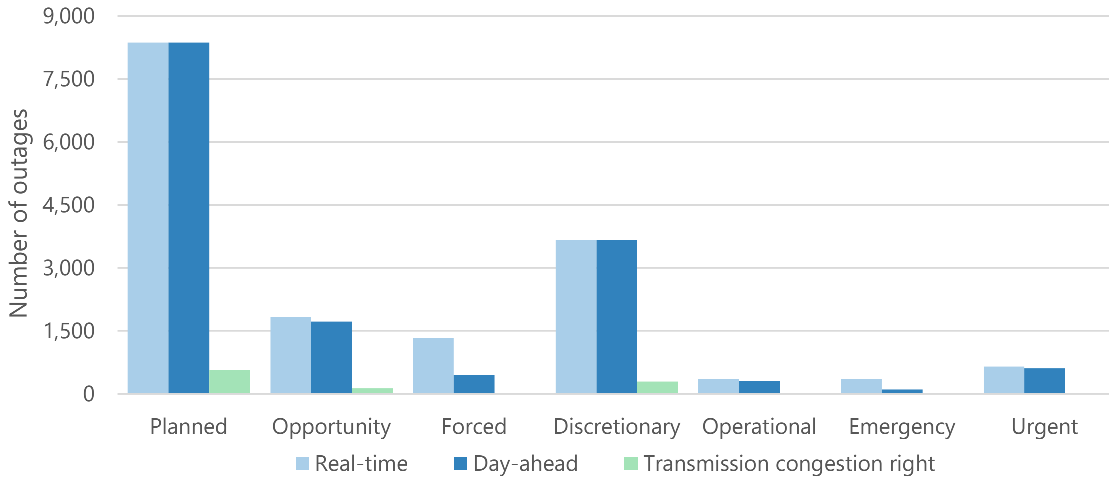


Outages shorter than five days are excluded from auction revenue right/transmission congestion right processes. This means the vast majority of outages (80 percent) are excluded from the transmission congestion rights models because they are less than five days or were not reported in the time allowed to be included in the transmission congestion rights models.

Figure 5–20 shows outages by real-time, day-ahead, and transmission congestion right markets.

[172] Integrated Marketplace Protocols, Section 6.6
[173] SPP Operating Criteria, Appendix OP-2

Figure 5–20 Transmission outages by market



While the number of outages in the day-ahead and real-time are similar, the outages represented in the transmission congestion rights market are only a fraction of the total number of outages. The transmission congestion market only includes outages that are longer than five days, and are submitted at least 45 days in advance of the first of the month. This represented only about six percent of the total outages in the day-ahead market. These differences in outages can create underfunding of transmission congestion rights.

Ideally, outages in the transmission congestion rights markets would be perfectly aligned with the day-ahead market. However, the MMU understands the challenges associated with accounting for outages in the transmission congestion rights market and recognizes that there can never be an exact match among the markets. Even so, improving how outages are handled and accounted for in the auction processes could help to improve underfunding. We encourage stakeholders to improve how outages are accounted for in the transmission congestion right auction process to improve the congestion hedging market results.

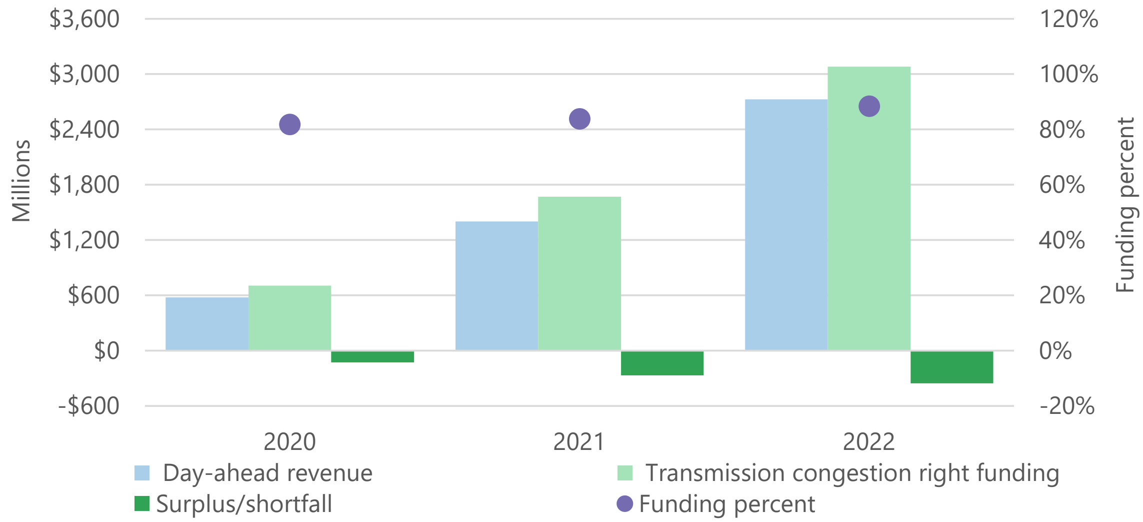
5.2.3 FUNDING

Funding for transmission congestion rights[174] increased in 2022, however, it remains below the 90 percent target. Conversely, the funding percentage for auction revenue rights and auction

[174] This report shows metrics for transmission congestion rights on a calendar year. However, this differs from the TCR year, which is reported by the SPP RTO, and covers a period starting June 1 and ending on May 31 of the following year. Therefore, the 2022 TCR year starts on June 1, 2022 and ends on May 31, 2023. The Spring 2022 Quarterly State of the Market report shows totals for the 2022 TCR year, which ended on May 31, 2022. The 2022 TCR year will be reviewed in the MMU's Spring 2023 Quarterly State of the Market report.

revenue right closeout decreased in 2022. As mentioned in previous reports,[175] the overfunding of auction revenue rights could be cause for concern. The market monitor continues to encourage SPP to review and address the reasons for this overfunding.

Figure 5–21 Transmission congestion right funding levels, annual, calendar year



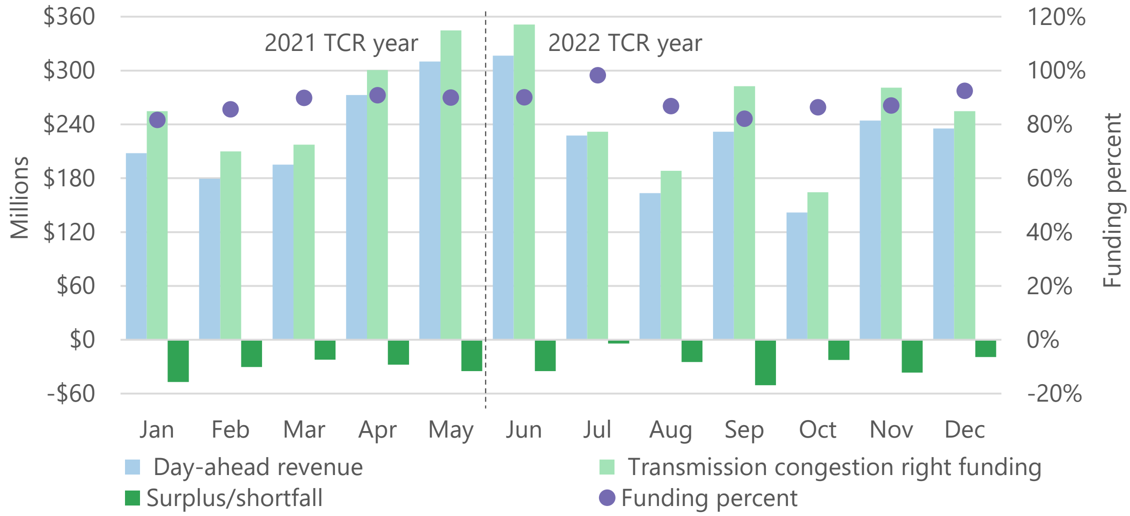
The 2020 calendar year produced 82 percent transmission congestion right funding while the following calendar years increased to 84 percent in 2021 and 88 percent in 2022. The 2022 underfunding is primarily the result of outages in the day-ahead market that were not included in the transmission congestion hedging models. The funding percentage increased modestly year-over-year, however the shortfall increased by roughly $85 million during 2022.

The transmission congestion right funding, represented in Figure 5-21, incorporates both underfunded and overfunded constraints. The sum of the overfunded and underfunded constraints resulted in net underfunding of $355 million in 2022.

Monthly transmission congestion right funding levels and revenue are shown in Figure 5–22.

[175] SPP MMU 2017 Annual State of the Market report

Figure 5–22 Transmission congestion right funding levels, monthly



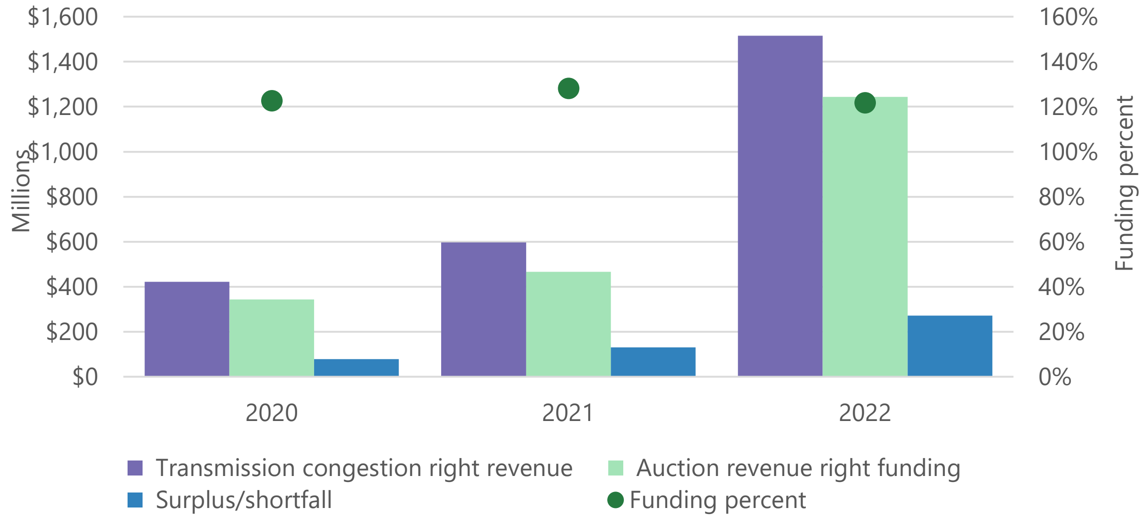
The monthly funding percentage fluctuated throughout the year ranging from 82 percent to 98 percent. Six monthly funding percentages fell within the 90 to 100 percent target range.[176] This is a material improvement from 2021, where only one month's funding percentage fell within the target range.

When outages, especially those on large elements, are not included in the congestion hedging models, their funding and congestion impact can be significant. This is exacerbated when those same outages are extended. The MMU sees the outage process as a primary concern that significantly affects TCR underfunding. The MMU has recommended that SPP and stakeholders address TCR underfunding. As part of that recommendation, the MMU strongly recommends improving outage consistency between the congestion hedging market, the day-ahead market, and the real-time market to improve TCR funding. Moreover, incentives can be used to ensure that those that take the outage work to minimize the impact on market outcomes.

Figure 5–23 shows the auction revenue right funding percentage since 2020.

[176] *Integrated Marketplace Protocols*, Section 5.3.3 specifies a target range. "In the event the cumulative funding is at or below 90 percent or above 100 percent, MWG may approve an additional adjustment…"

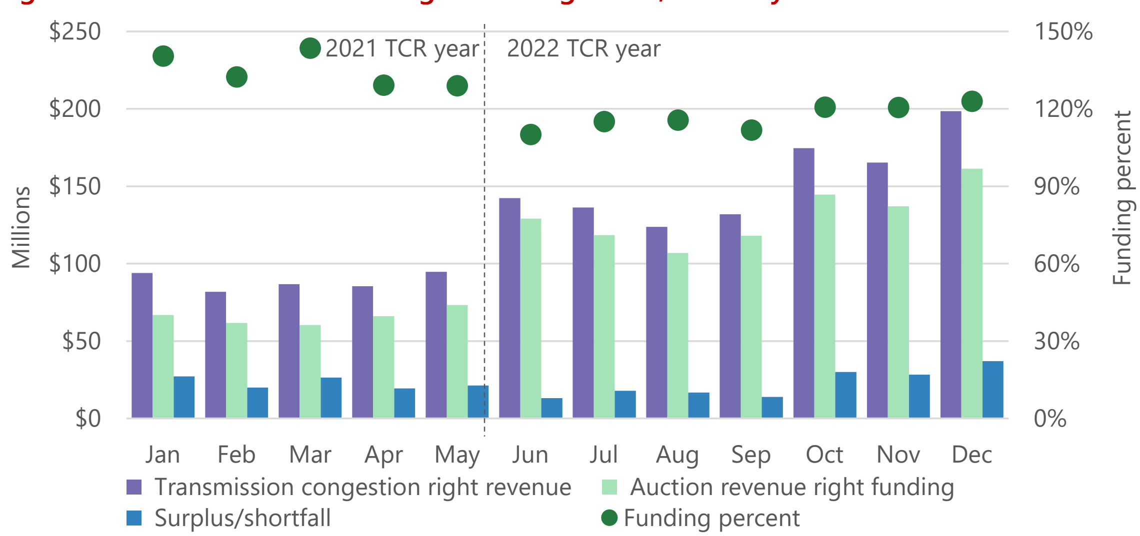
Figure 5–23 Auction revenue right funding levels, annual, calendar year



Auction revenue right funding has fluctuated over the last three calendar years. In 2020, auction revenue rights were 123 percent funded, followed by 128 percent funded in 2021, and 122 percent in 2022. Auction revenue right surpluses also fluctuated over the last three years. In 2020, the auction revenue right surplus was $78 million, followed by $131 million in 2021, and $272 million in 2022. Additionally the surplus increased materially year over year and presents a potential concern, as it could be an indicator of inefficiency. The market monitor urges SPP, along with the stakeholders, to determine the root cause of the overfunding, and analyze the surplus distribution methodology to ensure it is equitably allocated.

Figure 5–24 shows the 2022 monthly funding levels and revenues for auction revenue rights.

Figure 5–24 Auction revenue right funding levels, monthly



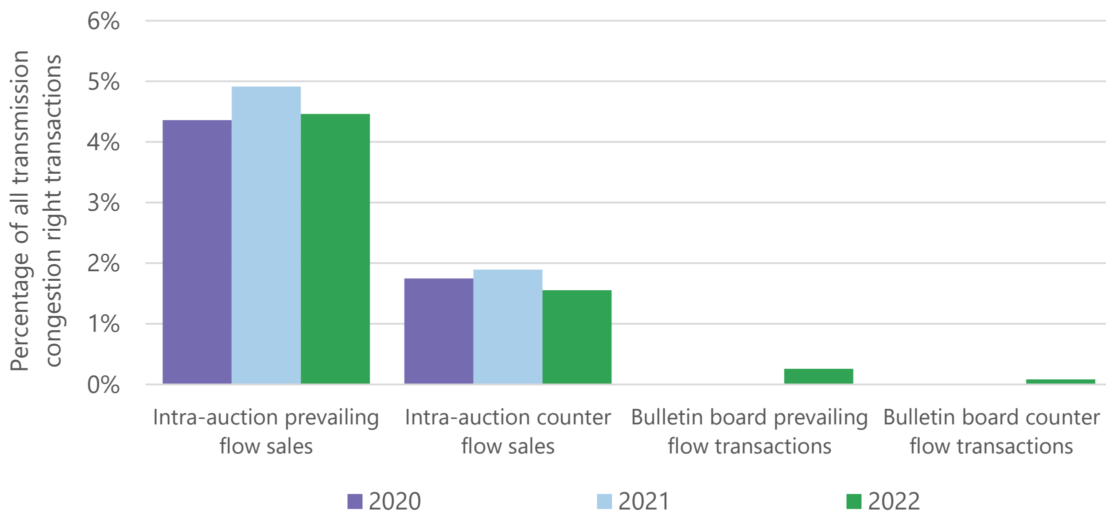
The shift in auction revenue rights funding beginning in June reflects the change in the TCR year, which runs from June to May. The figure also shows the auction revenue right funding fluctuated throughout the 2022 calendar year.

5.2.4 INTRA-AUCTION SALES AND BULLETIN BOARD TRANSACTIONS

Intra-auction sales refer to the sale of a previously acquired transmission congestion right position in a subsequent auction. Bulletin board transactions refer to trades where a market participant buys or sells a position outside of the auction cycle through the SPP bulletin board. Overall, both inter-auction sales and bulletin board transactions remain low.

Figure 5–25 shows the transaction volume by type as a percentage of all transmission congestion right purchase volume.

Figure 5–25 Intra-auction sales and bulletin board transactions



No bulletin board transactions cleared in 2020 or 2021, however in 2022 a small number of bulletin board transactions cleared. Additionally, intra-auction sale volume decreased slightly, but remains low, around six percent of the total transmission congestion right volume.

Outside their relationship to the auction cycle, these transactions also differ from each other in another material way. Bulletin board transactions are similar to the secondary equity market, where a share of stock is offered for sale and that same share is later purchased by another market participant. As such, the bulletin board transactions do not affect total supply; they only affect ownership of the existing supply.

However, intra-auction sales can affect supply in addition to ownership. When market participants offer their prevailing flow positions for sale intra-auction, the capacity of those positions once used is available to the market again. But, the newly available system capacity can be taken up by any path, not just the path sold intra-auction. Furthermore, to sell counter-flow positions intra-auction, unclaimed prevailing flow capacity must exist for the transaction to clear.[177] This is because counter-flow intra-auction sales reduce the total capacity available. The counter-flow now offered for sale, previously facilitated other prevailing flow positions. If the counter-flow sale were to clear without considering supply, the prevailing flow once facilitated by this counter-flow would no longer be feasible. So in order for these existing prevailing flow transactions to remain feasible, additional prevailing flow capacity must exist. Practically, the additional prevailing flow capacity required plays the same role once played by the counter-flow being offered for sale. These circumstances likely also incentivize market participant abstentions from counter-flow. Generally, if a market participant holds a counter-flow position, it could be very difficult to sell the position intra-auction, which is the main source of intra-marketplace liquidity.[178]

5.2.5 ISSUES, PROGRESS, AND NEXT STEPS

The following four areas highlight where continued progress could bring about improved market outcomes, risk reduction, and efficiency gains.

1. **Obtaining long-term congestion rights and auction revenue rights**

   Market participants experience varying levels of success in obtaining long-term congestion rights, as well as auction revenue rights and by extension self-converted transmission congestion rights. Improving the process to better align transmission service with long-term congestion right and auction revenue right entitlements would likely improve the outcomes materially.

   In January 2023, SPP staff presented an updated HITT M1 recommendation to the Markets and Operations Policy Committee. Staff's proposed solution incorporates a much broader suite of recommendations than the original HITT M1 recommendation. The MMU supports the staff proposal.

[177] The additional capacity could also be provided by another counter-flow intra-auction bid.
[178] Intra-market refers to inside the SPP Integrated Marketplace.

2. Credit policy

The Credit Practices Working Group has developed and implemented the first phase of credit policy enhancements. These enhancements are a material improvement. The second phase focused on incorporating forward-looking known information into the financial security calculations. SPP staff reviewed options for a forward-looking approach in 2021, including a mark-to-auction process. However, no changes were implemented.

In July 2022, FERC issued an order to show cause to four ISO/RTO's as to why their tariffs were just and reasonable in absence of either of (1) mark-to-auction mechanisms for the calculation of financial transmission right (FTR) market participants' collateral requirements and/or (2) volumetric minimum collateral requirements for FTR market participants. SPP's phase one efforts included the development and implementation of a volumetric minimum collateral requirement. However, SPP did not elect to develop and implement mark-to-auction mechanisms. SPP therefore was directed, to show cause, as to why its tariff is just and reasonable without mark-to-auction mechanisms. SPP filed comments in support of its current tariff whereas the MMU filed comments in support of mark-to-auction. FERC has yet to provide a final rule.

3. Secondary intra-market liquidity

Breaking the trend over the last four years, market participants transacted some TCRs over the SPP bulletin board in 2022. However, the transactions were of a very limited magnitude. Intra-auction sales continue to represent modest transaction volume. The limited liquidity associated with these products is not unique to the SPP markets; however, improved liquidity would likely prove beneficial for all market participants and enhance efficient auction price formation. The market monitor encourages SPP to adopt policies and procedures that deepen liquidity by incentivizing market participants to transact in SPP's secondary market.

4. Modeling inconsistencies

Modeling inconsistencies and outage discrepancies between the congestion hedging and day-ahead models continued in 2022. As stated in previous reports, the process and rules surrounding the modeling of congestion hedging outages should be prioritized and addressed. Therefore, the MMU recognizes and supports the efforts of the MWG/ORWG Strike Team, which is working to improve TCR underfunding.

5.3 INTEGRATED TRANSMISSION PLANNING PROCESS

The SPP tariff[179] requires SPP to conduct an annual Integrated Transmission Planning (ITP) Assessment to evaluate the transmission system upgrades for a ten-year planning horizon. The planning assessment serves as a regional planning process. This process involves many aspects of transmission planning including the considerations for reliability, public policy, operational, and economic needs, and generator interconnection to develop a cost-effective transmission portfolio for a ten-year planning horizon.[180] In addition, a 20-year assessment is required.

In 2022, the MMU continued to engage in planning discussions.

Meanwhile, due to SPP staff resource constraints, the Economic Studies Working Group (ESWG) reduced the scope of the 2022 ITP 10-year study to address only reliability requirements eliminating the economic analysis from the 2022 ITP.[181]

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[179] *SPP Open Access Transmission Tariff*, Attachment O Transmission Planning Process, Section III.

[180] The latest version of the ITP manual published can be found at https://www.spp.org/engineering/transmission-planning/.

[181] The ESWG made this decision in its January 2022 meeting, and it was subsequently approved by the SPP stakeholder process. Full assessment, however, is planned for the 2023 and 2024 ITPs.

6 COMPETITIVE ASSESSMENT

Chapter 6 of this report provides a competitive assessment of the SPP market. Key points from this chapter include:

- Structural and behavioral metrics indicate that the SPP markets have been competitive over the last several years. The market share, Herfindahl-Hirschman Index (HHI), and pivotal supplier analyses all indicate minimal to moderate potential structural market power in SPP markets outside of frequently constrained areas.
- In 45 percent of the hours in 2022, the market share of the largest on-line supplier in terms of real time energy output exceeded 20 percent, a declining trend observed since the June, 2018 formation of Evergy, Inc. as SPP's largest market participant.
- The HHI market concentration analysis shows that 9 percent of hours were considered moderately concentrated in 2022. The SPP market remained mostly unconcentrated—with 88 percent of all intervals since 2019 considered unconcentrated. No intervals were considered highly concentrated in 2022, and the percentage of intervals considered unconcentrated (91 percent) was at its highest level since 2017.
- The results of the pivotal supplier analyses indicate that the percent of hours with a pivotal supplier is the highest in two zones—New Mexico/West Texas and Iowa/Dakotas/Montana—with nearly all intervals possessing pivotal suppliers regardless of demand.
- Off-peak and on-peak annual average markups increased from all-time lows in 2020 and 2021, suggesting a convergence between market prices and short run marginal costs. This increase was driven primarily by high average markups for coal and gas resources. Wind resources, however, continue to offer at exceptionally low markup levels.
- Incremental energy offer mitigation in 2022 slightly increased in frequency in both the day-ahead and real-time markets. Despite the minor increase in mitigated resource hours, energy offer mitigation remains very rare, at 0.22 and 0.08 percent of resource hours in the day-ahead and real-time markets respectively. The total frequency of mitigation across all other products was similarly low and in line with prior years, with

operating reserve mitigation increasing largely due to an increase in spin product mitigation in August and September 2022.

- Behavioral measures suggest that attempts to actually exercise market power by manipulating the price (economic withholding) or quantity (physical withholding) of generation are rare. The output gap, an inference of economically withheld generation, rose slightly over the levels seen in 2021. This was primarily driven by coal resources facing supply shortage issues. The level of physically unoffered generation remained level in 2022 and 2021 after disruptions to maintenance and outage scheduled in 2020 attributable to COVID-19.

- Markups on marginal coal and gas resources increased significantly in 2022, while wind markups decreased to even more deeply negative levels than seen in 2021. The increase in thermal resource markups brought SPP's average offer price markup to slightly positive levels for the first time in several years. In mid-2022, the MMU introduced revision request number 502 (RR 502) as a response to the coal supply issues behind these markups, expanding the scope of allowable opportunity cost in order to curb coal dispatch. The MMU observed several market participants taking partial or full advantage of this increase in allowed opportunity costs and is largely satisfied with its performance to date.

The SPP Integrated Marketplace provides sufficient market incentives to produce competitive market outcomes in regions and periods lacking local market power. The MMU's competitive assessment provides evidence that in 2022, market outcomes were workably competitive, requiring only infrequent mitigation of local market power.

The market power analysis in this report considers both structural and behavioral aspects of market power concerns. Structural aspects are examined with techniques such as market share analysis, market-wide concentration indices, and pivotal supplier analysis. These structural indicators illuminate the potential for market power without regard to the actual *exercise* of market power. Behavioral analyses, on the other hand, look for the exercise of market power by assessing the actual offer or bid conduct of market participants, and the impact of that conduct on market prices. These analyses examined offer price markup, economic withholding, the frequency of automated mitigation, uneconomic production, and physical withholding.

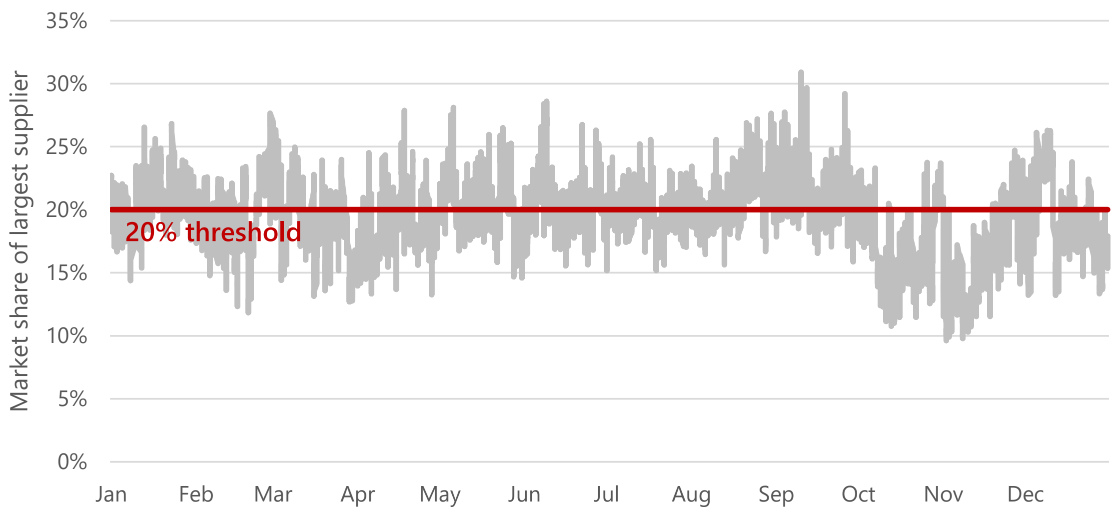
This chapter evaluates the SPP market's competitive environment by establishing the level of structural market power and then examining market prices for indications of the exercise of that power. Structural market power is assessed both at the SPP footprint level through supplier concentration indices and at the local (transmission-constrained) level through pivotal supplier analysis. In the SPP markets, mitigation of economic withholding is accomplished *ex-ante* through automatic market power mitigation processes that limit the ability of generators with local market power to raise prices above competitive levels. The mitigation program is monitored and evaluated to ensure it is efficient and effective. Accordingly, the following subsections examine the significance of market power and the effectiveness of local market power mitigation in the SPP markets.

6.1 STRUCTURAL ASPECTS OF THE MARKET

Three core metrics of structural market power are the market share analysis, the Herfindahl-Hirschman Index (HHI), and pivotal supplier analysis. The first two of these indicators measure market-wide concentration, ignoring local constraints. Pivotal supplier analysis, on the other hand, accounts for the dynamics of power markets and considers changing demand conditions and locational transmission constraints in assessing potential market power.

Figure 6–1 displays the market share of the largest on-line supplier in terms of energy dispatch in the real-time market by hour for 2022.

Figure 6–1 Market share of largest supplier



The market share ranged from 10 percent to 31 percent, exceeding the 20 percent threshold[182] in 3,961 hours (45 percent) for the year. In 2021, market shares ranged from 11 percent to 32 percent, with market shares exceeding the 20 percent threshold in 61 percent of intervals. This continues a trend of decreasing concentration after an acute rise in most concentration metrics following the formation of Evergy, Inc. in 2018. Evergy remains the largest on-line supplier in over 99 percent of intervals. Note that although a mere increase in market share does not itself pose a threat to the structural competitiveness of the SPP market, other relevant market data including pivotal supplier hours and local market power mitigation must also be closely evaluated for competitive assessment (see below).

The Herfindahl-Hirschman Index (HHI) is another general measure of structural market power, analyzing overall supplier concentration in the market. It is calculated by using the sum of the squares of the market shares of all suppliers in a market as follows:

$$HHI = \sum_i \left(\frac{MW_i}{\sum_i MW_i} * 100 \right)^2$$

According to FERC's "Merger Policy Statement,"[183] which is similar to the Department of Justice's merger guidelines, an HHI below 1,000 is an indication of an unconcentrated market, an HHI of 1,000 to 1,800 indicates a moderately concentrated market, and an HHI above 1,800 indicates a highly concentrated market.

Figure 6–2 provides the number of hours for each concentration category in terms of actual generation over the last three years.[184]

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[182] The 20 percent threshold is a historically accepted standard for identifying structural market power. Note, however, that neither market share nor the HHI metric alone would be sufficient for the assessment of market power particularly in today's spot electricity markets where load pockets formed by transmission congestion may lead to market power with much smaller market shares and/or HHI values.

[183] Inquiry Concerning the Commission's Merger Policy Under the Federal Power Act: Policy Statement, Order No. 592, Issued December 18, 1996 (Docket No. RM96-6-000).

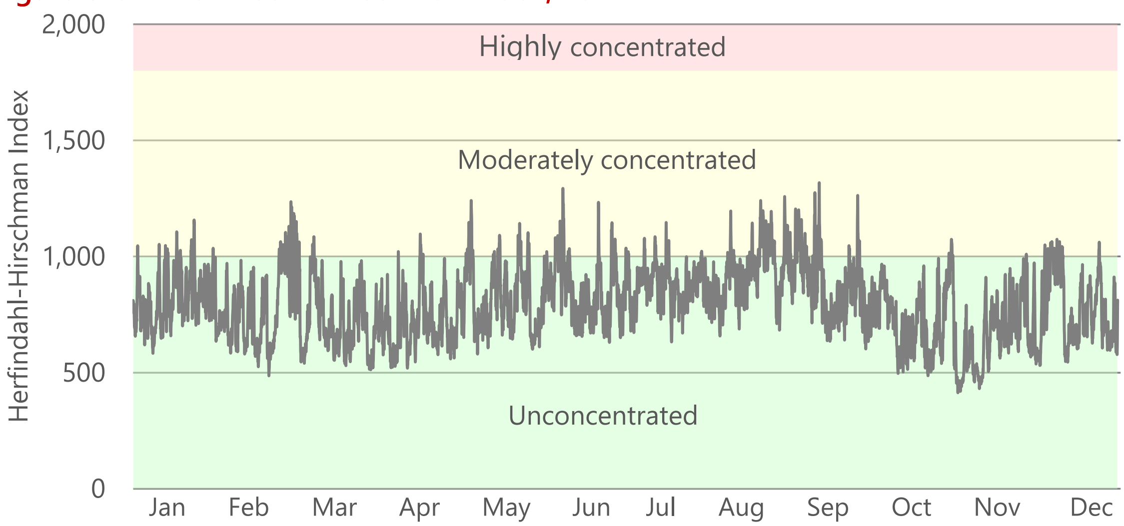
[184] The SPP MMU calculates HHI by actual generation as determined by real-time market (five-minute) dispatch solutions aggregated to the hourly level. The FERC merger guidelines uses capacity owned. Some years may reflect hour counts that, when totaled, do not constitute a full 8,760 hours. Generally, this is due to sustained real-time market system outages lasting longer than one hour. In accordance with the SPP Integrated Marketplace Protocols for pricing during system outages, if the market has not solved for a full hourly interval, it is excluded from the HHI analysis.

Figure 6–2 Market concentration level, real-time

Concentration	HHI Level	2020 Hours	2020 Percent of hours	2021 Hours	2021 Percent of hours	2022 Hours	2022 Percent of hours
Unconcentrated	Below 1,000	7,691	88%	7,428	85%	7,921	91%
Moderately concentrated	1,000 to 1,800	1,093	12%	1,329	15%	827	9%
Highly concentrated	Above 1,800	0	0%	0	0%	0	0%

The SPP market was unconcentrated in 88 percent of hours from 2020 to 2022. However, 12 percent of hours were considered moderately concentrated during the same period. 2022 saw a decrease in both the number of intervals considered "moderately concentrated" as well as a decrease in the number of intervals with a maximum market share of over 20 percent. The SPP market has never risen above the highly concentrated threshold of 1,800 since the start of the Integrated Marketplace in 2014. Figure 6–3 depicts the hourly real-time market HHI in terms of generation for 2022.

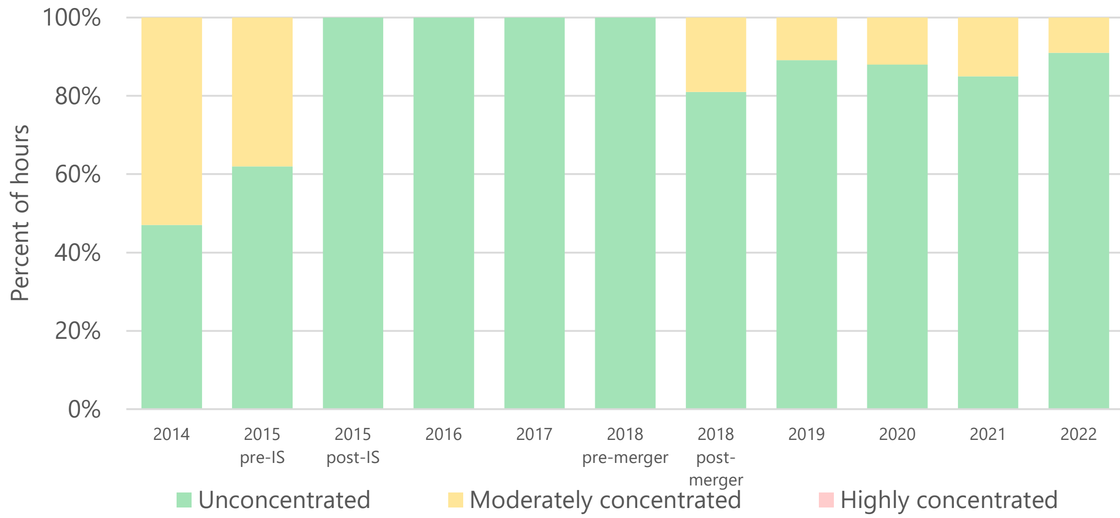
Figure 6–3 Herfindahl-Hirschman Index, 2022



Hourly HHI values ranged from 413 to 1,318 during 2022, a slightly narrower range than observed in 2021. This narrower range corresponded to a less volatile year generally in HHI values, with a lower standard deviation and coefficient of variation compared to the HHI values observed in 2021.

Figure 6–4 shows a graphical breakdown of the HHI for all hours since the start of the Integrated Marketplace in March 2014. For the years with significant events impacting the make-up of the market—2015, for the addition of the Integrated System; and 2018, with the creation of Evergy—the years are divided on the chart showing the HHI before and after the event.

Figure 6–4 Herfindahl-Hirschman Index, annual



As shown above, the market remained mostly unconcentrated from the addition of the Integrated System to the date of the Great Plains/Westar merger that created Evergy.[185] Even though moderately concentrated hours increased following the creation of Evergy, only 12, 15, and 9 percent of hours fell into this category in 2020, 2021, and 2022, respectively. In contrast, in 2014, just over 50 percent of hours were considered moderately concentrated, and in 2015, prior to the addition of the Integrated System, nearly 40 percent of hours were moderately concentrated.

While moderately concentrated hours increased following the creation of Evergy, it is not necessarily a cause for alarm, as they still remain below 2015 levels, prior to the Integrated System joining the market. Later metrics in this report will more closely examine specific market behavior by market participants in terms of the exercise of local market power.[186]

The MMU's market share analysis and HHI metrics both indicate a moderate potential for general structural market power in SPP markets outside of frequently constrained areas. Structural market power is also assessed at a more localized level and in the context of

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[185] Note that the HHI analysis is performed at the market participant level. There may be asset owners under market participants on a contractual basis, where bidding control is not under the purview of the market participant.

[186] Section 6.2 analyzes behavioral aspect of market power.

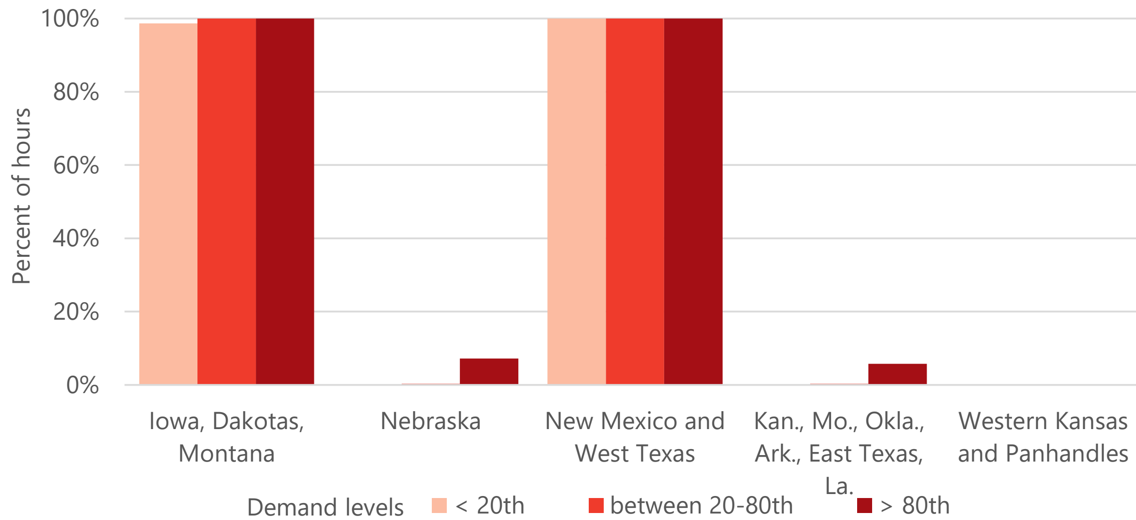
locational transmission constraints by reevaluating frequently constrained areas periodically and (re)defining them accordingly, as discussed in section 5.1.7.

Pivotal supplier analysis takes into account the dynamic nature of the power market, particularly variable demand conditions, and evaluates the potential for market power in the presence of pivotal suppliers. A supplier is pivotal when market demand cannot be met without some or all of its generation. There may be one or more pivotal suppliers in a particular market defined by transmission constraints and load conditions, and a supplier's pivotal status may vary between time periods irrespective of its size. Economic withholding by pivotal suppliers is automatically mitigated in real time by SPP's market clearing process, while physical withholding is monitored for and reported on by the MMU.

The following metric identifies the frequency with which at least one supplier was pivotal in the five different reserve zones[187] (regions) of the SPP footprint in 2022.[188] The frequency with which a supplier is pivotal is an indication of their potential to raise prices above competitive levels. While the mere size of a supplier does not itself render the supplier pivotal, suppliers which are frequently pivotal in high-demand intervals have a greater ability to exercise market power. For this reason, the pivotal supply frequency is analyzed at various levels of demand across these five regions, as shown in Figure 6–5.

[187] SPP divides market resources (generation) into five reserve zones. For the purpose of this report, these reserve zones are named as "Nebraska", "Western Kansas and Panhandles", "New Mexico and West Texas", "Kan., Mo., Okla., Ark., East Texas, La.," and "Iowa, Dakotas, Montana." Thus, each generation resource is mapped to one of these reserve zones. To define a load zone to match with a resource zone, each load settlement location was mapped to a reserve zone to approximate demand within a particular zone. Additionally, import limits are approximated by the average of the reserve zone limits for the times they were activated in 2022.
[188] It is important to note that reserve zones have rarely been activated in the SPP market.

Figure 6–5 Hours with at least one pivotal supplier



The results indicate that the percent of hours with a pivotal supplier is the highest (100 percent) in the New Mexico and West Texas region, regardless of demand level. This has been the case for the last several years. This is followed by the Iowa, Dakotas, Montana region where a nearly 100 percent pivotal supplier frequency was observed for all demand levels in 2022.

Compared to 2021, the percent of hours with a pivotal supplier at peak demand level decreased in the Kansas, Missouri, Oklahoma, Arkansas, East Texas, Louisiana region from nearly 13 percent to six percent.[189] The pivotal supplier frequency at the Nebraska region was almost the same as 2021.

6.2 BEHAVIORAL ASPECTS OF THE MARKET

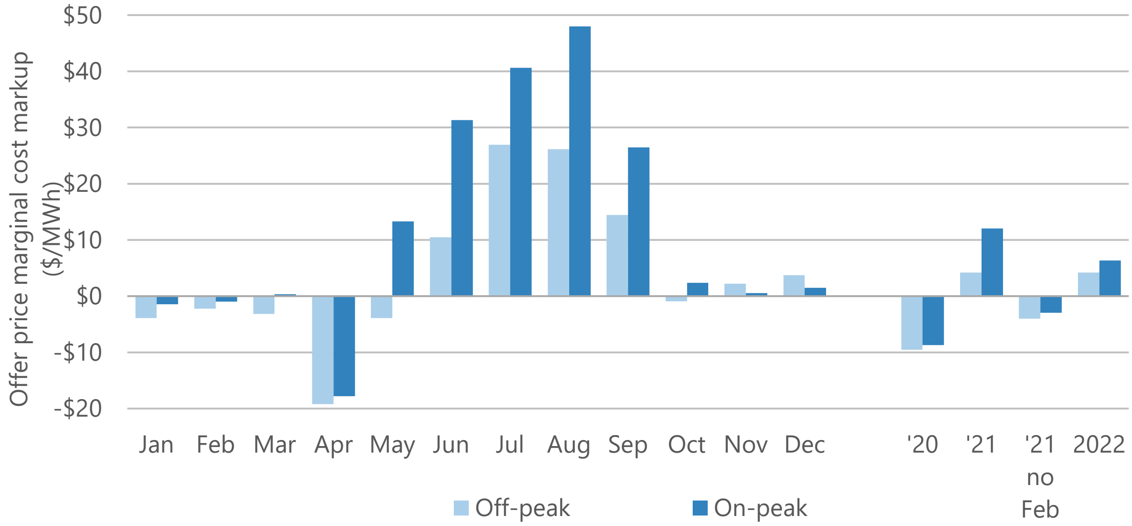
6.2.1 OFFER PRICE MARKUP

In a competitive market, prices should reflect the short-run marginal cost of producing the marginal unit. In SPP's Integrated Marketplace, market participants submit hourly mitigated energy offer curves that represent their short-run marginal cost of energy. Market participants also submit their market-based offers, which may differ from their mitigated offers. To assess market performance, a comparison is made between the market offer and the mitigated offer for the marginal resources for each real-time market interval.

[189] Note that this analysis differs from the MMU's Frequently Congested Areas (FCA) study where *impact* of congestion, as well as specific pivotal hours and transmission constraints, are taken into account when FCA designation is determined. Here, the suppliers' pivotal hours' frequency is analyzed only by considering demand levels and reserve zone/demand area assumptions.

Figure 6–6 provides the average marginal resource offer price markups[190] by month for on-peak and off-peak periods. While the MMU observed increasingly negative markups in the period from 2018 through 2020—implying significant price pressure in the SPP market—this trend abated in 2021, which saw several months with positive average markups for the first time since early 2018. 2022 saw a further continuation of this trend, particularly in summer peaking months, with offer price markups higher than $40/MWh during on-peak hours.

Figure 6–6 Average offer price markup of marginal resource, monthly

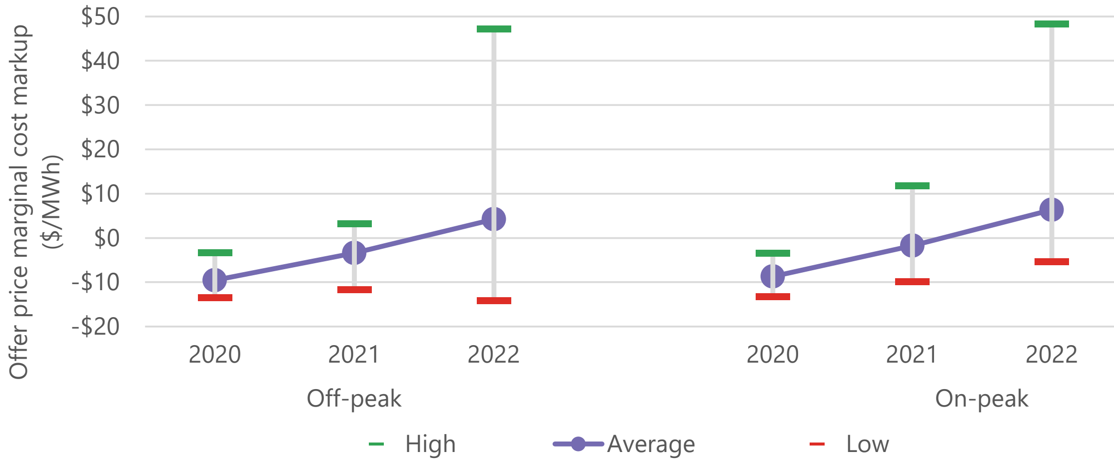


Despite high average monthly markups in on-peak hours during the summer months especially, the average offer price markup remained low on an annual basis, a trend that has persisted since 2017. The lowest markups occurred in April, at negative levels not observed since 2020. From May through September, on-peak average markups were all higher than $10/MWh, a level attained in no other months. By August, the average offer price markup rose to nearly $50/MWh. However, this summer trend disappeared almost immediately with the arrival of autumn shoulder months.

Figure 6–7 below points to an uptick in off-peak and on-peak average marginal resource offer markups in 2022 relative to the deeply negative levels seen in 2020 and 2021.

[190] Offer price markup is calculated as the difference between market-based offer and the mitigated offer where the market-based offer may or may not be equal to the mitigated offer. The markups are weighted based on megawatt to reflect each marginal resource's proportional impact on price.

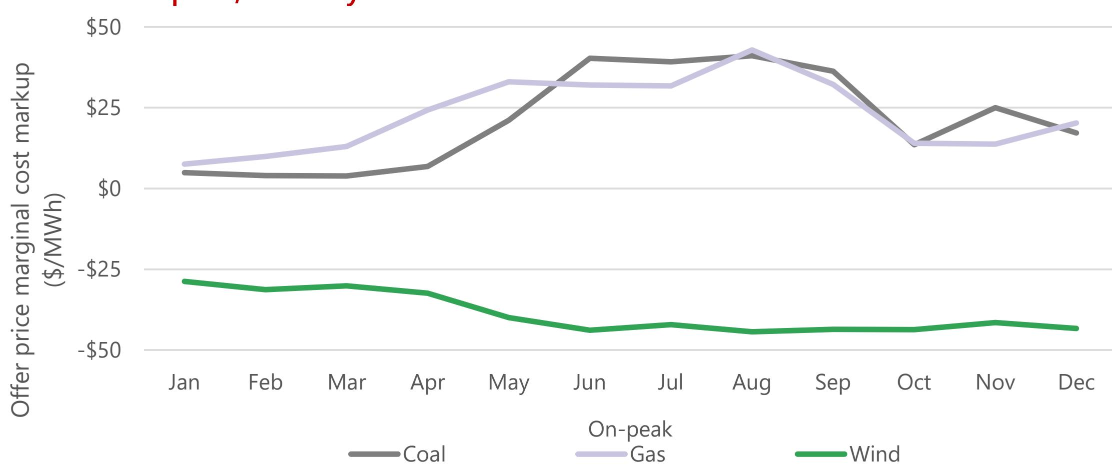
Figure 6–7 Average marginal resource offer price markup, annual



In competitive markets, markups should approach $0/MWh and the MMU monitors for markup levels that are both abnormally high and abnormally low. Average offer markups in 2022 continued a pattern of year-over-year increases beginning in 2020, with one of the largest yearly increases ever observed in average offer price markups from 2021 to 2022. This increase brought yearly average markups above $0/MWh for the first time in several years, reversing a trend that raised concerns about the continued commercial viability of some sectors of generation in SPP. The increase was attributable to markups in coal and gas offers. Of note, several coal resources experienced coal deliverability issues as a result of rail limitations, which resulted in many resources offering higher than typical mark-ups. The rail deliverability issue is discussed in further detail below.

Figure 6–8 shows the average on-peak marginal resource offer price markup by fuel type.

Figure 6–8 Average peak offer price markup by fuel type of marginal resource, on-peak, monthly



Positive markups were observed both coal and gas at much more elevated levels than those seen in 2021, excluding the winter weather event period in February of that year. Elevated on-peak markups were also observed in many months for gas, with a clear correlation to trends in the prevailing price of gas and overall load patterns within the SPP footprint. Many months, particularly in the summer, saw markups, which exceeded SPP's automated "impact test" threshold of $25/MWh. In 2021, by comparison, this level was only exceeded by one fuel type (natural gas) in one month (February). These positive markups are best understood as a shift in the market supply curve stemming from scarcity in coal supplies, due to rail limitations and high natural gas costs, across the market footprint. After the implementation of revision request 502, a decrease in thermal markups is observed. Because markups represent that distance between price and cost, however, this could just as well be attributable to an increase in allowed costs as to a decrease in market prices.

Nonetheless, all months saw negative markups for wind resources, with markup levels continuing to decrease throughout the year to levels generally lower than those seen in 2021. This deepening of negative markup levels, in combination with the steep increase in markups for thermal resources helps explain why the annualized markups depicted in Figure 6–7 showed an increase in both their average level but also the spread from minimum to maximum markup.

Negative markups indicate that many market participants' real-time market offers were below their mitigated offers.[191] This could occur where generators decide to offer below their marginal cost to:

- meet their day-ahead positions in order to avoid financial risk associated with buying back energy in real time market,
- maintain commitments or reflect temporary negative fuel prices, as in the case of natural gas units,[192] or
- ensure eligibility for production tax credits (PTC), as in the case of wind resources that constitute a sizeable share in total resource portfolio.

[191] Wind units may have negative mitigated offers primarily as a result of the federal production tax credit (PTC) for renewable energy.

[192] Tariff rules only allow for submitting monotonically non-decreasing offer curves by market participants, and this may result in market offers by natural gas units below their mitigated offers during periods with negative prevailing gas prices. Additionally, real-time market offers may be below mitigated offers when natural has units' mitigated offers are indexed to hub prices when in fact the cost of gas received could be below that hub price. Some SPP market participants have experienced negative natural gas prices in the past, but it remains a rare occurrence.

For instance, wind resources on the margin in the real-time market increased from 22 percent of all resource intervals in 2020 to 39 percent in 2022 (Figure 2–22).

6.2.2 MITIGATION PERFORMANCE AND FREQUENCY

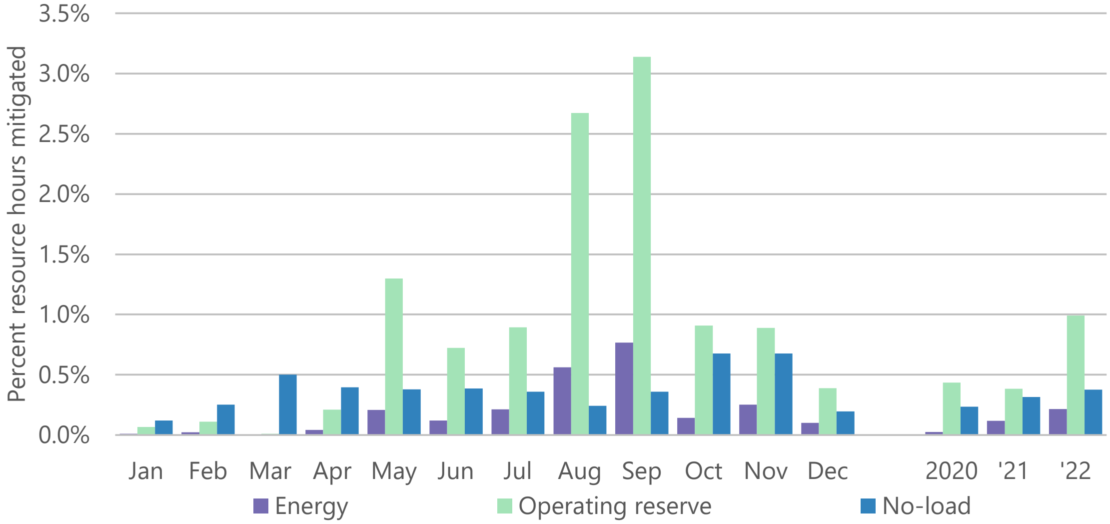
SPP resources' incremental energy, start-up, no-load, and operating reserve offers are subject to mitigation for economic withholding when the following three circumstances occur simultaneously in a market solution:

1) The resource has local market power;
2) The offer has failed the conduct test. Resources submit two offers for each product: a mitigated offer representing the competitive baseline costs that must adhere to the mitigated offer development guidelines[193] and a second offer generally referred to as a market offer, which often includes risk-based and strategy-based adjustments. An offer is considered for mitigation when the market offer exceeds the mitigated offer by more than the allowed threshold; and
3) The resource either:
    a) Is manually committed by SPP for capacity, transmission constraint, or voltage support; or by a local transmission operator for local transmission problems or voltage support; or
    b) The application of mitigation impacts market prices or make-whole payments by more than the allowed $25/MWh threshold.

Despite slight increases in day-ahead mitigation frequency, the overall mitigation frequency remains very low at less than one half of one percent across energy and no load resource intervals, and less than one percent for operating reserve intervals. Figure 6–9 shows the mitigation frequency of incremental energy, operating reserve, and no-load offers in the day-ahead market in 2022. Figure 6–10 below reflects an increase in real-time mitigation frequency that is commensurate with the year over year trends in slightly increased energy mitigation frequency in the day-ahead market in 2022.

[193] As indicated in Appendix G of SPP's *Integrated Market Protocols*.

Figure 6–9 Mitigation frequency, day-ahead market



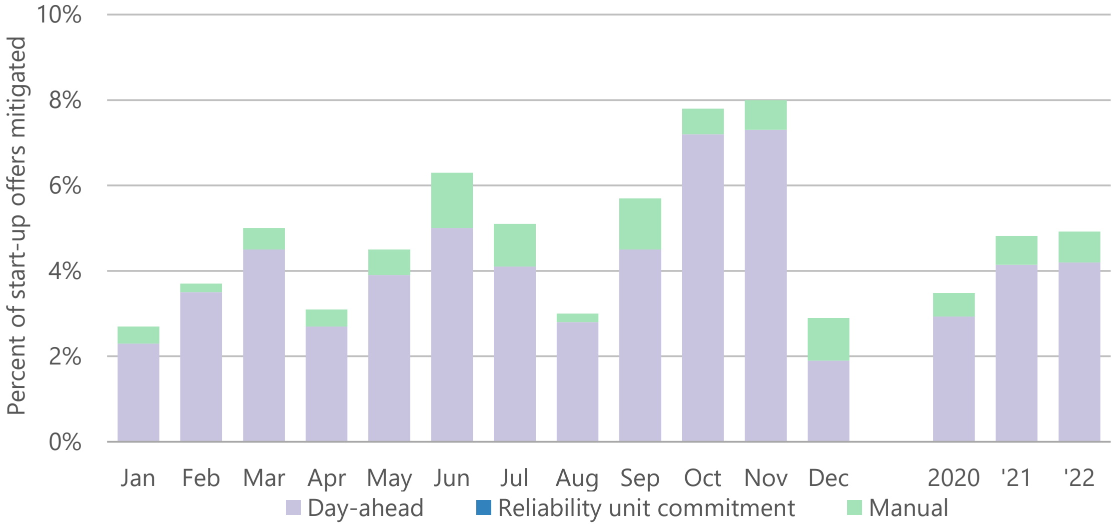
Mitigation frequency for operating reserves was concentrated in August and September, and was largely driven by increases in the mitigation frequency of spinning reserve offers. Excluding spin, operating reserve mitigation is comparable to levels observed in 2021. Annual mitigation frequency for no-load increased by a small extent compared to 2021, but this increase was minor and not concentrated in any specific month or season. The application of mitigation in the day-ahead market occurred at levels of 0.99 percent for operating reserves, 0.38 percent for no-load, and 0.22 percent for incremental energy. The low level of mitigated resource hours relative to market activity is a hallmark of the day-ahead market, and while operating reserves saw a larger increase in mitigation frequency than seen in previous years, it remains below one percent, while energy and no-load mitigation has continued to be below one-half of one percent in every year since 2014.

Mitigation of incremental energy in the real-time market is shown in Figure 6–11 below.

For the real-time market, the annual mitigation frequency increased slight compared to 2021. Although October 2021 had a higher percentage o resource hours mitigated than any month of 2022, in 2021 only four months had percentages over 0.05 percent, whereas 2022 had nine months with percentages over 0.05 percent.

Figure 6–11 depicts the mitigation frequency for start-up offers for the various commitment types.

Figure 6–10 Mitigation frequency, start-up offers



The annual mitigation frequency of start-up offers in 2022 was nearly equivalent to 2021 at slightly over four percent. While the frequency of reliability unit commitment mitigation has been nonexistent since 2017, manual mitigation remained similar in 2022 to 2021 levels at approximately 0.7 percent. Day-ahead mitigation accounted for 86 percent of the total start-up offer mitigation. The highest levels of start-up offer mitigation occurred in June, October, and November, with the lowest start-up mitigation levels occurring in December.

6.2.3 OUTPUT GAP (MEASURE FOR POTENTIAL ECONOMIC WITHHOLDING)

Economic withholding is defined as submitting a resource offer that is artificially high, such that either the resource will not be scheduled or dispatched, or—if scheduled or dispatched—the offer will set a higher than competitive market clearing price. Accordingly, the output gap metric aims to measure the economic (or competitive) amount of output withheld from the market through the submission of offers in excess of competitive levels. The output gap is the amount of generation not produced as a result of offers exceeding the mitigated offer above an appropriate conduct threshold. The conduct threshold is employed to compensate for any inaccuracies or uncertainties in estimating the cost, similar to the one used in economic withholding mitigation. In this report, the output gap is calculated as the difference between a resource's economic level of output at the prevailing market clearing price and the greater of actual offered MWs and actual amount of production. The economic level of output is produced by a generator between its minimum and maximum economic capacity.[194]

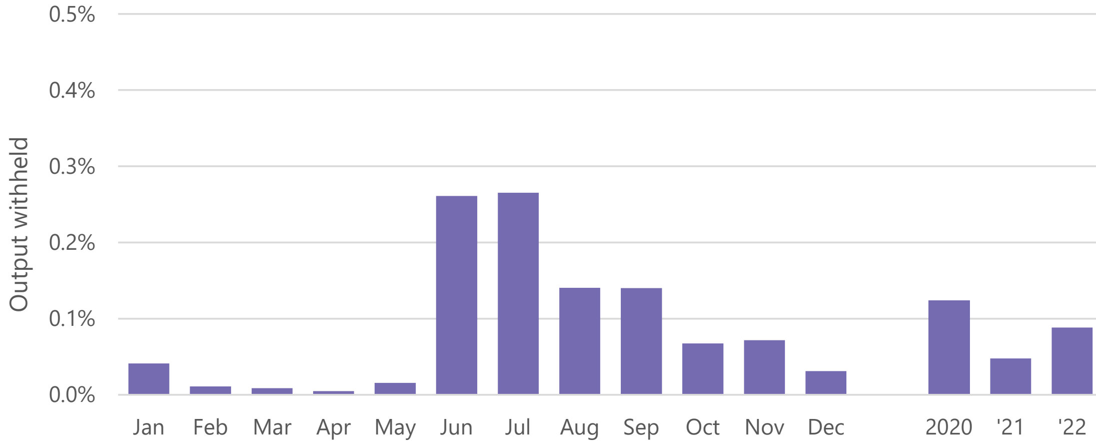
The MMU employs a 17.5 percent conduct threshold for the frequently constrained areas and a 25 percent conduct threshold for the rest of the footprint to reflect the actual thresholds used in the clearing process's automatic economic withholding mitigation.[195] In order to account for the discrepancy between a resource's offered capacity and the dispatched amount (due to possible limitations in real-time market conditions such as transmission constraints, operator actions or ramp limitations, virtual participants), an upward adjustment is made by taking the greater of the day-ahead scheduled or the real-time dispatched amount to reflect the actual amount of production.

Note that certain market conditions such as congestion (supplier location), supplier size, or high demand can create market power and facilitate economic withholding behavior. For this reason, the output gap is calculated as percentages of total economic output withheld compared to total reference capacity for the SPP footprint. In addition, the output gap is calculated for the largest three suppliers (market participant portfolios) in each frequently constrained area, if so designated, comparing the levels to those of the remaining suppliers. Similar to the last year's report, the annual calculations were run for all days and evaluated at varying levels of demand as a potential market condition that can affect the withholding outcome.

Figure 6–12 below shows the monthly level of the output gap across the SPP footprint from 2020 to 2022.

[194] The MMU calculates this metric by including all resources' total (reference level) capacity when calculating output gap percentages.
[195] The two frequently constrained areas identified in the 2021 study became effective on December 27, 2021. Therefore, two frequently constrained areas were added to this 2022 report.

Figure 6–11 Output gap, monthly



Compared with the previous years, the output gap was slightly higher in 2022. It was about 0.04 percent higher in 2022 compared to 2021. Overall it still remains at very low levels, averaging less than 0.3 percent in all months, reflecting a high level of participation in the market overall.

The significant increase in output gap in June and July might be due to the coal shortage and the opportunity cost that was added to mitigated offers. The coal resources only raised the market offers to reflect this shortage. Following the implementation of revision request 502[196] in August 2022, coal resources were allowed to include opportunity cost adders in their mitigated offers due to a transportation issue. Figure 6-12 shows the decline in output gap, as more and more coal resources included opportunity cost adders in their mitigated offers in August, September and October.

While Figure 6–13 displays the output gap calculated by demand level and participant size for the entire SPP market footprint, Figure 6-14 shows the output gap for the Southwest Missouri frequently constrained area for 2022.[197] There was no output gap in the Southeast Oklahoma frequently constrained area for any demand and supply levels in 2022.

[196] RR502 "Opportunity Cost Revisions Addressing Coal Transportation Issues."
[197] The Southeast Oklahoma and Southwest Missouri frequently constrained areas were activated on December 27, 2021 therefore, data shown cover the whole year of 2022.

Figure 6–12 Output gap, SPP footprint

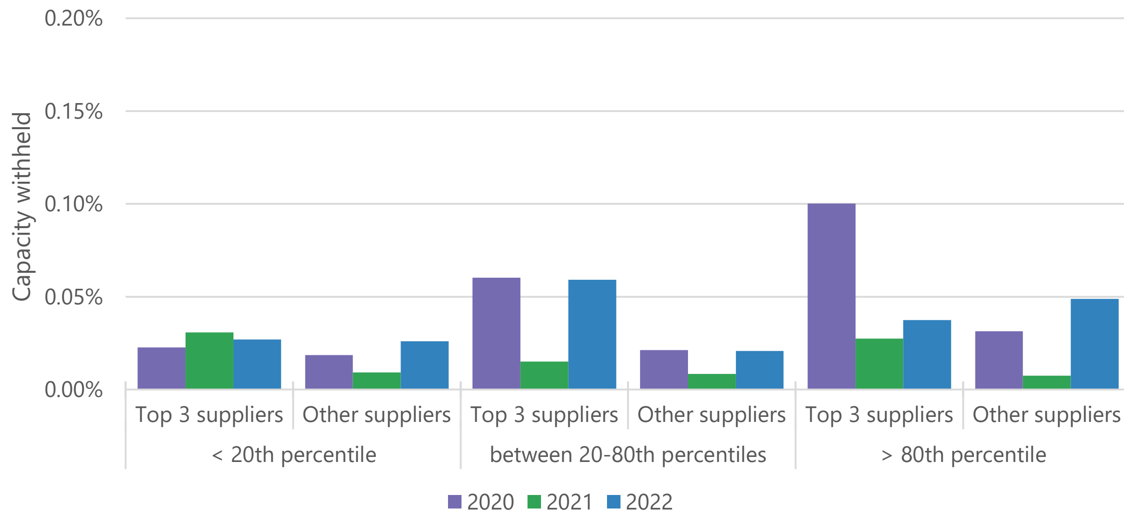
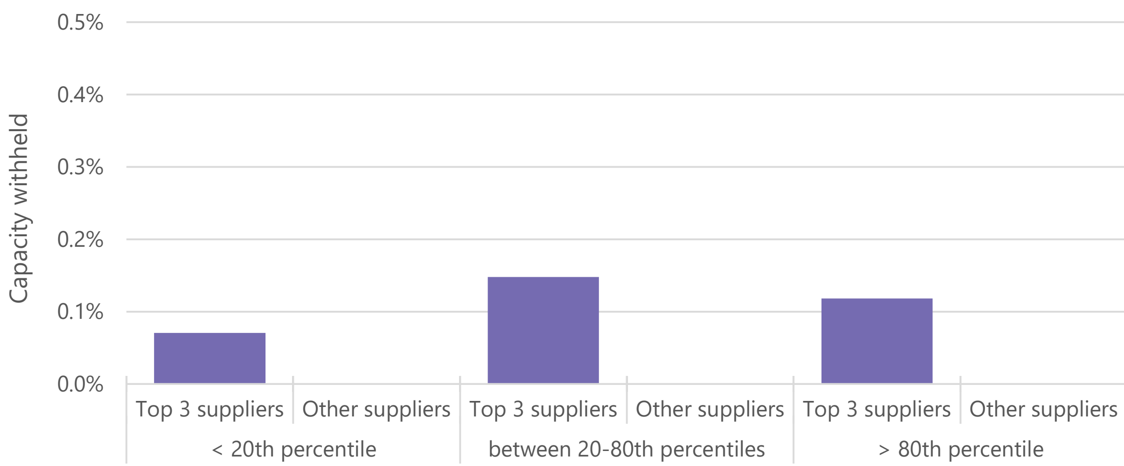


Figure 6–13 Output gap, Southwest Missouri frequently constrained area



Although still at low levels, the highest level of output gap (no more than 0.2 percent) was observed belonging to the top three largest suppliers and during high demand periods in 2022. The results indicate a very low level of economic output withheld in the SPP footprint and Southwest Missouri frequently constrained area. These outcomes are generally consistent with expectations of competitive market conduct. In general, more output is expected to be withheld at higher demand levels or by larger suppliers. However, at times output may also be withheld in low load periods, as prices are often negative during the lowest 20 percent of load hours.

6.2.4 UNOFFERED GENERATION CAPACITY (MEASURE FOR POTENTIAL PHYSICAL WITHHOLDING)

As part of the competitive assessment, the MMU reviewed potential physical withholding behavior by generators throughout the 2020 to 2022 period. Physical withholding refers to a conduct where a supplier derates a resource or otherwise does not offer it into the market. Physical withholding may include: intentionally not following dispatch instructions, declaring false derates or outages, refusing to provide offers, or providing inaccurate resource parameters such as capability limitations. Any economic generation capacity that is not made available to the market through a derate, outage, or otherwise not offered to the market is considered for this analysis.[198,199]

Total economic capacity that was derated from respective reference levels was classified by reason and duration. Derates can be reflected as planned or forced outages submitted through SPP's outage scheduling system or any undesignated unoffered capacity.[200] Any derates from reference levels are considered in this analysis.

Derates were classified as either short-term or long-term. Those of less than seven days' duration were classified as short-term and the rest as long-term. This is because the economic capacity that was not offered short-term has more potential for physical withholding relative to long-term derates as it would be less costly—because of loss of sales—for a supplier to withhold capacity for a short duration of time.

As in the case for economic withholding, the potential for physical withholding is also affected by various market conditions at the time offers are made including location (congestion), supplier size, or demand levels. Larger suppliers would be in a more advantageous position to exercise market power. During tight market conditions, suppliers have more incentive and opportunity to physically withhold capacity for strategic reasons. In addition, scheduling maintenance outages in high demand periods may indicate a strategic behavior to create artificial shortages.

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198 This analysis, in part, draws on "Assessment of the Market Monitoring Metrics for the SPP Energy Imbalance Service (EIS) Market," Potomac Economics, December 2010 and "2016 State of the Market Report for the New York ISO Markets," Potomac Economics, May 2017.
199 Economic capacity is determined in a similar way as in the output gap analysis in Section 6.2.3 by comparing resource's (cost-based) mitigated offer to the prevailing locational price.
200 The planned maintenance outages by nuclear generation and unoffered capacity by hydro, wind, and solar is excluded in this analysis.

The MMU assessed derated and unoffered economic capacity both in the day-ahead and real-time markets. Similar to the output gap analysis, the MMU modelled commitments based on day-ahead market outcomes for all units.[201] The unoffered capacity is calculated as the difference between the unit's economic capacity[202] and its offered maximum economic capacity operating limit during intervals when the unit was deemed economic (i.e., covering its costs given the clearing price).

The following figures shows unoffered economic capacity as percent of total resource reference levels by month for the SPP footprint, frequently constrained areas[203] and by supplier (participant) size against varying load levels.[204]

Figure 6–14 Unoffered economic capacity

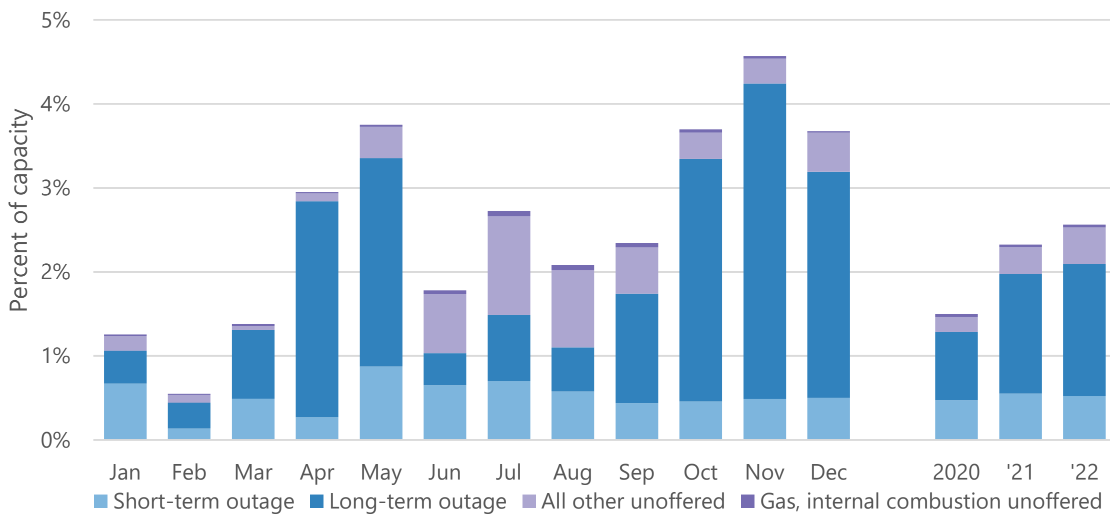

Figure 6-14 shows that on an annual average basis the total unoffered capacity equaled 1.5 percent in 2020, 2.3 percent in 2021, and 2.6 percent in 2022.

The figure shows that the majority of the outages were long-term and concentrated in spring and fall shoulder months. The chart reflects a normal level of maintenance outages in 2022. Comparing with the previous year, there is a significant increase of long-term outages in November and December which may likely be due to the coal rail limitations, which occurred in fall 2022. Some coal resources used the outages to preserve coal for the winter months. When

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201 Due to the new fast-start logic implemented in 2022.

202 Bounded by a resource's reference level.

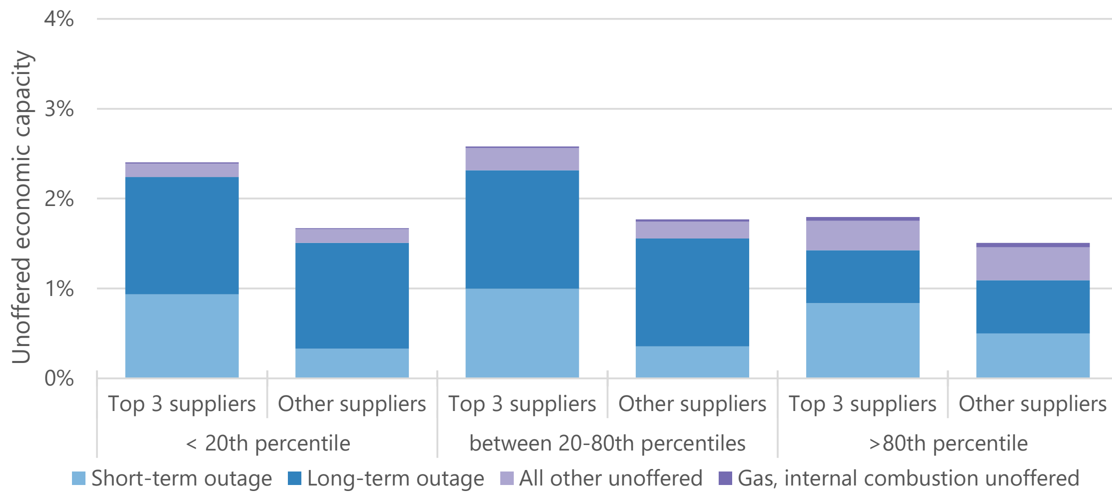
203 The two frequently constrained areas identified in the 2021 study became effective on December 27, 2021.

204 Unoffered capacity percentages are calculated out of the total reference levels of the corresponding market area.

short and long-term outages were excluded from the averages, the remaining unoffered capacity amounts to 0.21 percent, 0.35 percent and 0.47 percent for 2020 through 2022, respectively. From an overall market perspective, the results generally indicate reasonable levels of total unoffered economic capacity.[205]

Figure 6–16 shows that short-term outages by large suppliers stay at one percent at all load levels, while short-term outages by others slightly rise with increasing load (which correlate to increasing prices) across the SPP footprint.

Figure 6–15 Unoffered economic capacity at various load levels, SPP footprint



At the same time, unoffered economic capacity of gas (peaker) units—both by large and other suppliers—also slightly rises with increased load albeit at very low levels. Larger suppliers also show higher unoffered economic capacity than other suppliers at the same load levels. Unoffered economic capacity as a percentage of load is more apparent for the remaining resource types, but does not exceed three percent for either of the supplier groups at any demand level.

Figure 6–17 and Figure 6–18 show the unoffered capacity at the two frequently constrained areas.[206] The Southwest Missouri frequently constrained area has a similar unoffered capacity level as the entire SPP footprint, while the Southeast Oklahoma frequently constrained area has a significantly higher level, which is due to the size of these areas. The Southeast Oklahoma

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[205] On an individual resource level, not offering economic capacity may be physical withholding depending on the facts and circumstances of the situation.
[206] All the resources in these areas are from the top three suppliers, hence no data were displayed for other suppliers.

frequently constrained area is quite small. As such, any resource on outage or derate will lead to a high unoffered capacity percentage in that area.

Figure 6–16 Unoffered economic capacity at various load levels, Southwest Missouri area

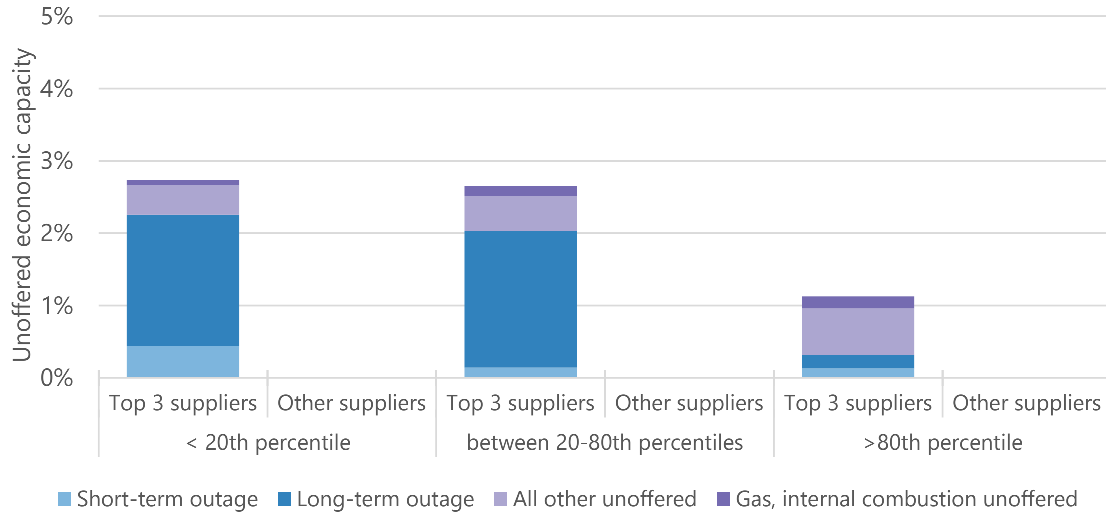
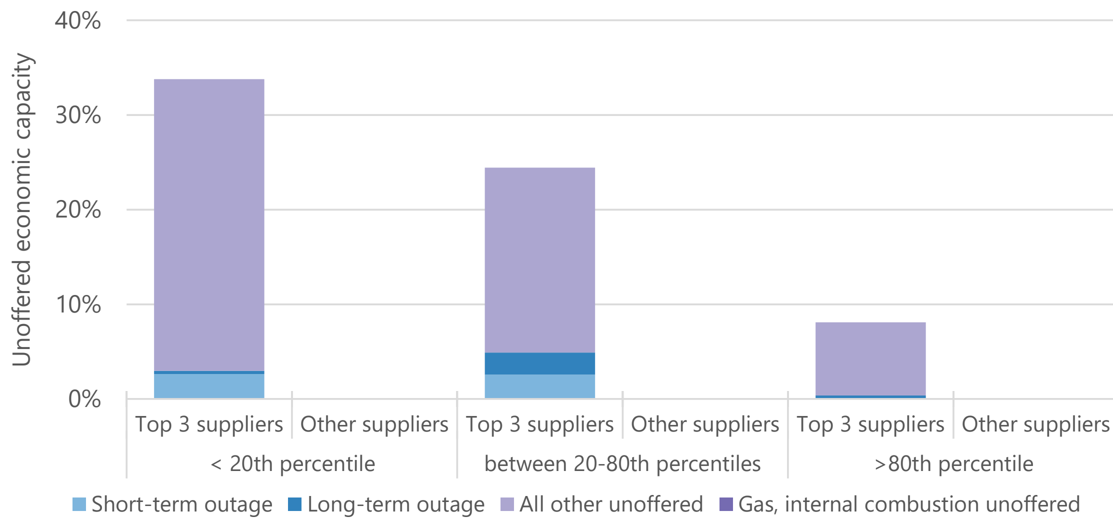


Figure 6–17 Unoffered economic capacity at various load levels, Southeast Oklahoma area



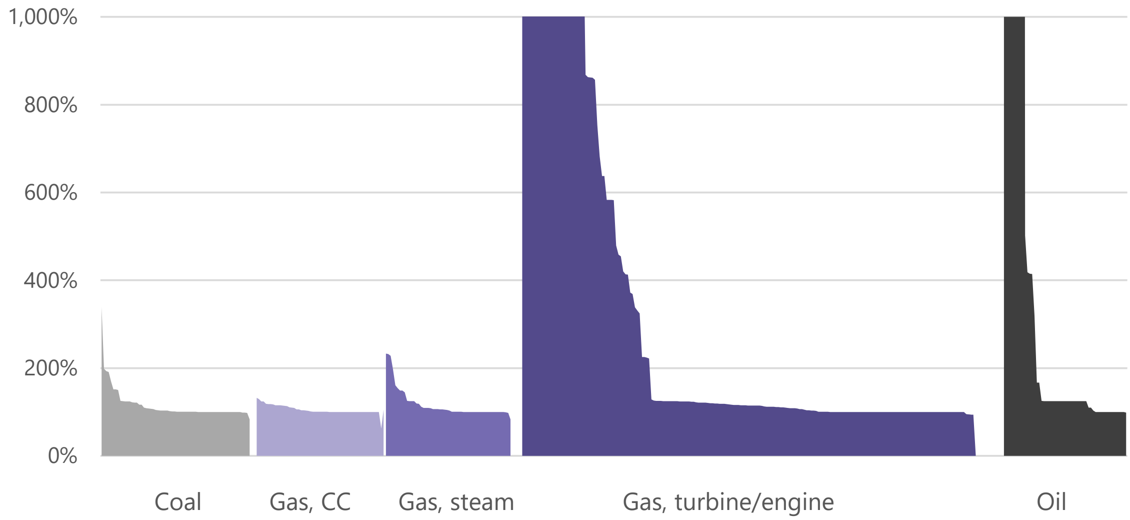
The SPP-wide generation outage data[207] (see Section 3.4) shows that most long-term outages were maintenance outages (59 percent). Out of the short-term outages, approximately 63 percent were forced outages.

[207] Covering all resources in the SPP market including nuclear, hydro, wind and solar generation.

6.3 START-UP AND NO-LOAD BEHAVIOR

Market participants also submit their market-based no-load and start-up offers, which may differ from their mitigated offers. To assess market performance, a comparison is made between the market no-load and start-up offers and the mitigated no-load and start-up offers for all resources for each real-time market interval. Figure 6–19 shows the mitigation start-up offer mark-up by fuel category in 2022.

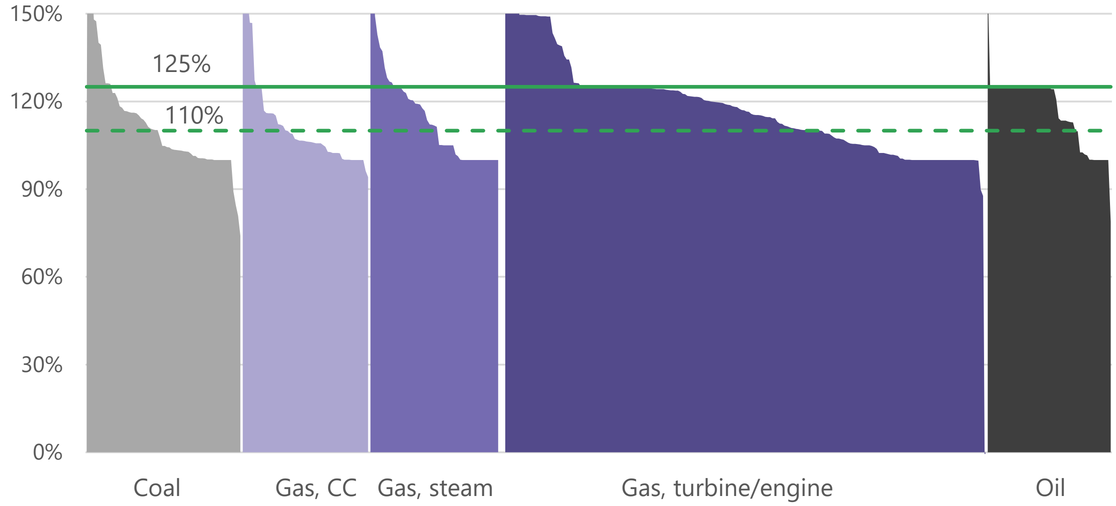
Figure 6–18 Mitigation start-up offer mark-up by fuel category



Analysis of start-up offers showed that many market participants submitted start-up offers considerably above their mitigated offer levels. Nonetheless, start-up mitigation occurred in less than five percent of intervals in 2022 and day-ahead mitigation accounted for 86 percent of the total start-up cost mitigation. These figures were very similar to results in 2021, except for seeing less blank space at the end of the gas, turbine/engine category, which represents less resources offering $0 start-up offers.

Figure 6–20 shows the mitigation no-load offer mark-up by fuel category in 2022.

Figure 6–19 Mitigation no-load offer mark-up by fuel category



Most market participants submitted no-load offers within the threshold range of their mitigated offer levels. There are a small number of gas, turbine/engine resource type that marked up their no-load offers above the 25 percent mitigation threshold.

7 RECOMMENDATIONS

One of the core functions of a market monitor is "to advise the Commission, the RTO or ISO, and other interested entities of its views regarding any needed rule and tariff changes."[208] The MMU accomplishes this responsibility through many forums, including but not limited to active participation in the SPP stakeholder meetings process, commenting on FERC notices of proposed rulemakings, submitting comments at FERC on SPP filings, and making recommendations in the Annual State of the Market report. This section outlines the MMU recommendations to SPP and stakeholders to address our concerns with the current design, rules, and processes.

This section highlights new recommendations and updates recommendations made in prior reports based on 2022 market outcomes. The MMU has identified four new recommendations for 2022. Along with the new recommendations, the MMU has highlighted and updated existing recommendations in an effort to promote the need for these issues to be addressed. These include continued emphasis on recommendations documented in the Winter Weather Report[209] that address MMU concerns arising from the February 2021 winter weather events.

7.1 NEW RECOMMENDATIONS

2022.1 CONSIDER LIMITATIONS ON VIRTUAL TRADING DURING EMERGENCY CONDITIONS

In 2022, the MMU published a paper examining the impact of virtual trading during the February 2021 winter weather event.[210] In the paper, the MMU demonstrated how the merits of virtual transactions, such as aiding price convergence, decrease or are even erased under conditions of scarcity, particularly when day-ahead prices exceed the $1,000/MWh offer cap. The combination of large price spreads and an inability to displace more expensive generation during scarcity events lends to extremely high profit per megawatt values with little to no impact on price or market convergence. Where virtual transactions did create positive impacts, their high cost and profits largely outweighed their benefits.

In light of these findings, the MMU made the primary recommendation to suspend virtual trading during scarcity events, particularly when day-ahead prices exceed the $1,000/MWh offer

[208] As defined by FERC in Order No. 719.
[209] SPP MMU Report on February 2021 Winter Weather Event
[210] Virtual activity during the 2021 winter weather event: An analysis

cap. The MMU further recommended that analysis should be done to determine what price levels, price spreads, and virtual volume to load ratios at which virtual transactions are no longer a cost-effective tool for aiding price and market convergence. This will allow SPP to know under which specific conditions virtual trading should be temporarily suspended in order to avoid unduly high costs related to virtual transactions. The MMU also recommended studying how violation relaxation limits (VRLs) interact with the profitability and cost-effectiveness of virtual transactions since they fundamentally alter price formation and can lead to artificially large price spreads. This likely also decreases the effectiveness of virtual transactions in aiding price and market convergence.

The MMU submitted an initiative on the SPP Roadmap[211] for SPP to study the effectiveness of virtual transactions during the winter weather event and identify any potential lessons learned or recommendations going forward. This initiative is currently on the parking lot of initiatives to be addressed. The MMU recommends SPP and stakeholders consider the recommendations made in the MMU report on virtual bidding behavior.

2022.2 ADDRESS LIMITATIONS WITH THE RAMP CAPABILITY PRODUCT

In fall 2022, the MMU performed a review of the ramp capability product's effectiveness and documented the results in its quarterly report.[212] The review identified that the majority of resources procured for ramp-up are stranded behind congested constraints and unable to deliver the ramp. This is occurring across multiple resource types, including variable energy resources and conventional resources.

Congestion patterns have increased dramatically since SPP staff first evaluated the potential benefits of adding a ramping product. MMU analysis and subsequent SPP staff analysis have confirmed that the benefits of the ramping capability product have been limited due to this issue since its implementation in March 2022. The MMU recommends that SPP and stakeholders evaluate options to address the stranded ramping issue as it relates to the product's deliverability. SPP staff have noted they are considering and testing multiple options for remediation with the preference being for an option that would pre-qualify resources based

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[211] The SPP Roadmap is a process where SPP staff and stakeholders identify, educate, rank, and approve new and existing Integrated Marketplace initiatives for development over the next two to five years. More information on this process can be found at https://www.spp.org/stakeholder-center/spp-roadmap/. https://www.spp.org/stakeholder-center/spp-roadmap/

[212] Fall 2022 quarterly state of the market report. Section 6 - Special Issues.

on expected congestion. The MMU is open to this non-discriminatory approach and looks forward to working with the SPP and stakeholders on addressing this concern.

In addition to the stranded ramping issue, the MMU is also concerned that low prices on the ramp capability up demand curve may result in prices that undervalue ramp-up. While it is difficult to assess the full extent of this issue given the stranded ramping issue, the MMU recommends that SPP staff evaluate the effectiveness of the ramping capability product demand curve when assessing solutions to the stranded ramping issue. This evaluation could identify the need for additional enhancements or increased demand curve prices.

2022.3 IMPROVE SITUATIONAL AWARENESS OF TRANSMISSION UPGRADES AND IMPROVE PROCESS TO REASSIGN PROJECTS

Recent analysis by SPP staff has shown that several transmission projects and upgrades are behind expected relevant deadlines.[213] Some of these projects are potentially several years beyond their expected in service dates. This analysis has highlighted a lack of transparency on the status of many transmission projects and upgrades. This issue encompasses both reliability and economic projects.

Delays in transmission upgrades can significantly contribute to congestion. As shown in this report, congestion in 2022 was at the highest levels experienced since implementation of the Integrated Marketplace. Many of the top 10 constraints have projects that have been identified to remediate congestion. However, many of these projects are delayed. This can have significant ramifications on market outcomes, and costs paid by ratepayers. Moreover, resource decisions, including generator interconnection, are made based on expectations and information on the status of transmission upgrades. Thus, in order to better inform the market, the MMU recommends that SPP and stakeholders develop a process to improve the transparency of the status of transmission projects and upgrades.

Current public reporting of these projects' statuses provides three separate dates:

- RTO determined need date
- The latest project owner indicated in-service date
- Letter of notification to construct issue date

[213] March 1, 2023 Project Service Working Group presentation, 7. In-Service Date Report

The RTO needed date can be before the issuance of the Notification to Construct,[214] thus it is not a plausible tracking mechanism for evaluating the timeliness of the transmission upgrades. In addition, the Project Owner Indicated In-Service Date is the most recent in service date supplied by the designated transmission owner and does not fully show the delays in the project. The MMU recommends that an "Original Project Owner Indicated In-Service Date" be added to the public reports. This will allow full transparency into the delay in the projects. It is the understanding of the MMU that not all designated transmission owners respond with an Indicated In-Service Date. The MMU recommends that this date be required and that the supplied date be benchmarked.

Furthermore, there should be regular updates from the transmission developer indicating the status of the project, along with detailed descriptions of the delaying issues. This detail should be at a granular enough level to be able to discern the entity and upgrades delaying the project. This additional information can improve situational awareness, and aid resource developers and decision makers.

In addition to the enhanced information, the MMU recommends that SPP improve tariff clarity to assist in determining if transmission projects should be reassigned. Currently, the SPP tariff affords the RTO to ensure that "due diligence" has been taken to develop a project in a timely manner.[215] We recommend that the SPP and stakeholders develop a clear set of guidelines as to what constitutes due diligence. Ultimately, if a transmission developer is unwilling or incapable of developing a project within an acceptable timeline, the SPP Board should have clear guidelines, including a potential timeline, when deciding on when to move a project to another developer.

2022.4 APPROVE CONGESTION HEDGING MECHANISMS TO ENHANCE EQUITY

In July 2019, the Holistic Integrated Tariff Team (HITT) published its recommendation report, including 21 board-approved recommendations.[216] Marketplace enhancement recommendation one (HITT M1), "Implement congestion hedging improvements" remains outstanding. After years of discussion in the Market Working Group and a failure to come to consensus, the Board of Directors intervened, directing SPP, with input from stakeholders, to

[214] The SPP Tariff defines the Notification to Construct as a written notice from the Transmission Provider directing an entity that has been selected to construct one or more transmission project(s)to begin or continue implementation of the transmission project(s).
[215] SPP OATT, Attachment Y, Section V
[216] https://www.spp.org/documents/60372/hitt%20report%2020190730.pdf

develop a proposal. In January 2023, SPP staff presented an updated HITT M1 recommendation to the Markets and Operations Policy Committee. While the new proposal does not address the inherent mismatch between contract paths and the economic delivery of energy, it incorporates a much broader suite of recommendations than the original.

The recommendation package comprises nine components, which target the upstream, mid-stream, and down-stream aspects of the congestion hedging process. The upstream components focus on model alignment between transmission service studies and the congestion hedging process. The mid-stream components center around the mechanics within the long-term congestion right and auction revenue right allocations. The downstream recommendations focus on the distribution of excess auction revenues and stakeholder education. The package also incorporates a feedback loop from the congestion hedging process to the planning process.

Stakeholders have been reluctant to adopt the proposal as a whole, with some preferring certain components to others, and opposing certain components. However, an à la carte approach is not ideal. While it is true each of the components provides a standalone incremental improvement, the combination of all the components work together to deliver an improvement that is greater than the sum of the parts. For this reason, the MMU stands in support of this proposal, and recommends SPP and stakeholders approve and implement the recommended package in its entirety.

7.2 EMPHASIS ON PREVIOUS RECOMMENDATION

The following recommendation regarding market inefficiencies due to forecasted resources consistently under-scheduled in the day-ahead market has been documented in each annual state of the market report since the 2017 report. The MMU considers this a significant issue with widespread market implications and continues to encourage SPP and stakeholders to address the inefficiencies caused by the under-scheduling of forecasted resources in the market.

2017.5 ADDRESS INEFFICIENCY WHEN FORECASTED RESOURCES ARE UNDER-SCHEDULED DAY-AHEAD

The MMU noted in its 2017 report that the systematic under-scheduling of wind resources in the day-ahead market can contribute to distorted price signals, suppressing real-time prices and affecting revenue adequacy for all resources.[217] This also poses a problem for resource

[217] 2020 SPP Annual State of the Market Report, Chapter 8, 2017.5 Address inefficiency when forecasted resources under-schedule day-ahead

adequacy as the current, low average prices in the SPP market do not support new entry of any resource type except wind (see Chapter 4, Section 4). Noting that variable energy resources are generally able to produce close to a forecasted amount, the MMU recommended that this issue be addressed through market incentives and rule changes that focus on market inefficiencies associated with under-scheduling of variable energy resources in the day-ahead market based on forecasted supply. The MMU has included this recommendation in each annual state of the market report since 2017.

In 2021, the MMU noted that the percent of wind offered and cleared in the day-ahead market continues to decrease. At that time, although total wind offered was generally close to forecast, a portion of this is at offer levels that exceed prevailing prices and therefore is not cleared in the day-ahead market. In 2022, most day-ahead wind offers had a single segment that was generally offered at prices below prevailing prices, but at a quantity below forecast. Their real-time offers, in contrast, were generally set at a higher megawatt quantity and a lower offer price. This inter-market practice does not accurately reflect the risk, across the operating range of the resource, incurred by the market participant relative to the accuracy of the forecast.

As part of the 2021 report, the MMU noted the concerning increase in the frequency of negative prices in the market. The frequency of negative price intervals in the real-time market increased by 11 percent in 2020 and occurred two times more frequently in the real-time market than in the day-ahead market. In 2022, the frequency of negative pricing intervals decreased slightly from eight percent to seven percent in day-ahead, but increased another one percent in real-time.

One cause of these negative pricing interval differentials between the day-ahead and real-time markets is net differences in unit commitments due to under-clearing of wind resources in the day-ahead market relative to their real-time production. These negative prices can occur when renewable resources are backed down in order for traditional resources committed in the day-ahead market to operate at minimum output. This disparity between the markets negatively impacts the efficient commitment of resources. The MMU recognizes that, as more wind generation is anticipated to be added over the coming years, the frequency of negative prices has the potential to increase.

In 2021, the MMU submitted an initiative[218] to be added to the SPP Roadmap to address the negative impacts of variable energy resources being under-scheduled in the day-ahead market. As part of the initiative, the MMU noted that the issue could be addressed through multiple

[218] SIR 74 - DAMKT VER Participation

avenues included 1) incentivizing more variable energy resource participation in the day-ahead market 2) incentivizing more virtual energy participation in the day-ahead market and 3) allocating measurable costs to causers. While the MMU continues to view this as a high priority issue, in 2021, stakeholders voted to move this issue to the list of parking lot initiatives. Despite efforts to revive this initiative during the 2022 roadmap prioritization meetings, stakeholders chose not to elevate this initiative from the parking lot. Initiatives that are perpetually in the parking lot are at risk of being removed from the roadmap process entirely. The MMU will continue to study the effects of under participation of wind in the day-ahead market and recommend the RTO and its stakeholders explore both policy and incentive options to increase day-ahead participation.

7.3 WINTER WEATHER REPORT – CRITICAL RECOMMENDATIONS

As part of its review and analysis of the February 2021 winter weather events, the MMU published a report outlining multiple recommendations for consideration by SPP and stakeholders in the areas of resources, price formation, scheduling and dispatch, and gas-electric coordination. The MMU has presented its report and findings to SPP, stakeholders, and FERC in multiple forums. The recommendations below represent three critical areas the MMU continues to emphasize in those discussions.

WWE1 ENSURE AVAILABILITY OF RESOURCES

An accurate measure of resource-level availability on a seasonal basis to meet seasonal demands remains on the MMU's list of critical recommendations for reliability. An inadequate measure of the likelihood for capacity to be available during peak demand or a system shock such as a weather event leads to the reliance on neighboring regions, and unaccredited capacity to keep the lights on. If the scope of the system shock is large enough, as it was in February 2021, it leads to load shed.

In July 2022, the SPP Board of Directors approved the policy paper, recommended by SPP and approved by the Market and Operations Policy Committee (MOPC) and the Supply Adequacy Working Group (SAWG), for performance based accreditation using a variant of a demand-weighted probabilistic equivalent forced outage rate demand (EFORd).[219] While this approach is an improvement over the status quo, this method of measuring resource availability does not address the main resource availability issues experienced during the February 2021 or December

[219] SPP Board of Directors action: https://www.spp.org/documents/67635/bod_mc%20minutes%202022%2007%2026.pdf

2022 winter weather events. Specifically, this approach does not account for maintenance outages or outages due to conditions beyond management control, and correlated outages by resource type. Furthermore, the approach only considers the best four out of five years, and implementation is anticipated in 2028.

All the while, the availability of accredited capacity to the market continues to fall significantly short of accreditation, with 2022 down 14 percent from 2021. PJM and MISO currently use EFORd in their capacity evaluation, and are actively looking for more accurate alternatives.

EFORd is proposed for use on all resources not included in SPP's filing to use effective load carrying capability (ELCC).[220] In August 2022, FERC approved the use of ELCC[221] for wind, solar, and run-of-the-river hydroelectric resource as a measure of availability for capacity accreditation purposes, subject to the condition that SPP submit a compliance filing to include additional detail; which SPP did in September 2022.[222] In March 2023, FERC reversed that ruling on the grounds of ineffective definitions and a lack of clearly specified rates in the tariff. In FERC's reversal, Commissioner Clements commented in her concurrence that ELCC may be unduly discriminatory and recommended SPP adopt a consistent framework for all resource types.

In order to improve resource adequacy, and to ensure non-discriminatory treatment of resources, the MMU recommends that SPP and its stakeholders adopt an adequate approach to valuing resource accreditation that accurately measures total resource availability. This would include maintenance outages, outages beyond management control, and other correlated outages; would not allow for observations to be removed; and would implement this approach in a consistent timeline across all resource types.

WWE2 ESTABLISH INCENTIVE MECHANISM FOR CREDITED CAPACITY

The MMU continues to see the need for implementing both market and non-market mechanisms to incentivize resource attributes that enhance reliability through resiliency and availability. The MMU proposed a set of market mechanisms to incentivize existing resources to

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[220] https://www.spp.org/documents/66044/20211110_revisions%20to%20implement%20effective%20load%20carrying%20capability%20methodology_er22-379-000.pdf

[221] https://www.spp.org/documents/67683/20220805_order%20-%20revisions%20to%20implement%20effective%20load%20carrying%20capability%20methodology_er22-379-002.pdf

[222] https://www.spp.org/documents/67835/20220906_compliance%20filing%20-%20revisions%20to%20imprelement%20effective%20load%20carrying%20capability%20methodology_er22-379-004.pdf

increase their availability to the market, and efficiently schedule maintenance outages, through valuing the availability of capacity when it is needed in the region. By placing a value of availability, participants can make economic choices on which resource attributes can be improved to most economically increase availability based on resource type, geographic location, and environmental and government policies.

The MMU initiative is currently ranked as "high" in the 2023 SPP Roadmap prioritization. While the initiative is not actively being worked on, the topic continues to surface in stakeholder meetings as "resource reliability attributes", and "a market for maintenance". Stakeholders have also expressed support for the Performance Credit Mechanism pursued in the ERCOT market.[223] The MMU recommends the development of market and non-market incentives for "reliability attributes" in conjunction with the development of an accurate measurement for resource availability as two legs of a three-legged stool that ensures reliability through measurements, incentives, and requirements.

The MMU included recommendations in its winter weather report to allow for meaningful incentives for availability noting that, to the extent that a resource is more available there should be incentives, and to the extent that a resource is less available, there should be disincentives. The MMU recommended the establishment of an incentive mechanism for actual resource performance for accredited capacity.

This recommendation continues to be discussed in the stakeholder forums as part of overall discussions regarding the winter weather event. An initiative[224] was added to the SPP Roadmap to address this recommendation. The MMU has argued in stakeholder forums that the accreditation approach both affects and is affected by an incentive mechanism. The MMU has discussed the incentive mechanism as part of the Improved Reliability Task Force and Supply Adequacy Working Group discussions to improve resource accreditation.

WWE3 ESTABLISH MORE FREQUENT RESOURCE ADEQUACY REQUIREMENT

The MMU continues to emphasize the uniqueness of seasonal demands and the resource attributes needed to meet those demands. The MMU recommends that SPP resource adequacy requirements address resource needs to meet the demand in each season independently. In the past two calendar years, SPP has experienced a winter weather event that has tested the region

[223] The Performance Credit Mechanism has elements similar to the MMU's proposed availability incentive approach.
[224] SIR310 WWE MMU R2

and exposed reliability concerns related to the availability of adequate capacity to meet demand during system shocks. A look at the availability of accredited capacity shows the largest differences in the spring and fall seasons, which have no obligation nor requirement.

SPP is currently working with stakeholders to change the winter season resource obligation into a requirement, complete with penalty charges for deficiency. The MMU is engaged in the stakeholder process in support of this effort, but additionally recommends the same effort be undertaken for the spring and fall seasons. The MMU sees the seasonal resource adequacy requirement as the final leg of a balanced approach which uses accurate measurements, meaningful incentives, and adequate requirements, to ensure reliability.

7.4 PREVIOUS RECOMMENDATIONS

The MMU has provided recommendations to improve market design in each of our previous annual state of the market reports since the launch of the Integrated Marketplace in 2014. While SPP and its stakeholders have found ways to effectively address some of the MMU concerns, there remain many outstanding recommendations. A high level summary of each of these recommendations, including recent updates and current status are outlined below. Additional information for these recommendations can be found in the corresponding annual state of the market report.

2021.1 EXPAND MULTI-CONFIGURATION COMBINED CYCLE RESOURCE MODEL TO INCLUDE ADDITIONAL RESOURCE TYPES

In the 2021 report,[225] the MMU recommended SPP expand the multi-configuration combined cycle resource model or create a new multi-configuration model to include additional resource types that have multiple operating modes, or configurations. This recommendation comes in response to observed inefficiencies from participants attempting to optimize their plant's schedule without the benefit of such logic. The MMU noted that SPP's multi-configuration combined cycle resource model provides the market several efficiency gains by optimizing the schedule of configurations, improving participant abilities to offer different parameters for each configuration, and providing real-time operational awareness.

[225] 2021 Annual State of the Market report, Chapter 7 Recommendations, 2021.1 Expand Multi-Configuration Combined Cycle Resource Model to Include Additional Resource Types

Additional information, including further potential applications of the multi-configuration combined cycle resource model, is documented in the 2021 report.

2020.1 UPDATE MARKET AND OUTAGE REQUIREMENTS TO IMPROVE FUNDING FOR TRANSMISSION CONGESTION RIGHTS

The MMU made recommendations in the 2020 annual report to update outage requirements and develop market rules and market incentives associated with outages to better align the network models used by the transmission congestion rights auctions and the day-ahead market.[226] This recommendation was a result of the MMU observation of a continued downward trend in the overall funding of transmission congestion rights from day-ahead market congestion rents. The MMU noted, at the time of the initial recommendation, that overall funding for transmission congestion rights had decreased materially from 2018 through 2020. The funding remained materially below the 90 percent target for the 2021 calendar year, and while funding for 2022 increased, it remained below the 90 percent target.

The MMU continues to recommend that SPP and stakeholders address transmission congestion right underfunding. As part of that recommendation, the MMU strongly recommends improving outage consistency between the congestion hedging market, the day-ahead market, and the real-time market to alleviate funding issues due to misaligned outages.

This recommendation is currently an initiative[227] on the SPP Roadmap ranked as a high priority and is currently being discussed in the stakeholder process.

2020.2 ENHANCE MARKET-TO-MARKET EFFICIENCIES THROUGH COLLABORATION WITH MISO

In 2019 and 2020, the MMU worked with the MISO market monitor on a series of recommendations for the Joint Regional State Committee / Organization of MISO States Seams Liaison Committee. Based on the results of the joint study, the MMU recommended in the 2020 annual report to evaluate the processes and mechanisms used to effectuate the market-to-market agreement between SPP and MISO.[228] One of the items identified by the market monitors in this process was that SPP had real-time market-to-market congestion that was not

[226] 2020 SPP Annual State of the Market Report, Chapter 8, 2020.1 Update market outage requirements to improve funding for transmission congestion rights
[227] SIR77 - TCR Funding
[228] 2020 SPP Annual State of the Market Report, Chapter 8, 2020.2 Enhance market-to-market efficiencies through collaboration with MISO

materializing in the day-ahead market. Upon further evaluation, it was determined that this was because MISO market-to-market constraints were not being activated in the SPP day-ahead market. SPP began a new process in October 2022 that activates MISO market-to-market constraints in the day-ahead market based on recent congestion trends in the real-time market.[229] SPP staff indicated one of the chief concerns with activation of day-ahead MISO market-to-market constraints was the potential to increase TCR underfunding. The MMU supports SPP's recent efforts in aligning day-ahead and real-time congestion along the SPP-MISO seam and recommends SPP make any necessary modifications to the TCR model to address concerns with TCR underfunding.

To the extent that costs are incurred by either market as a result of implementing changes per the joint agreement, the MMU recommends SPP and MISO work to address this through their Joint Operating Agreement. Currently, the Joint Operating Agreement indicates that SPP and MISO would address how to assign costs with day-ahead at a future date. The MMU believes that now is an appropriate future period to resolve these outstanding items with the agreement.

The MMU continues to recommend that SPP and stakeholders address inefficiencies in the market-to-market agreement between SPP and MISO. This initiative[230] is currently on the SPP Roadmap as a high priority.

2020.3 RAISE OFFER FLOOR TO -$100/MWH

The MMU recommended in the 2020 report to raise the energy offer floor to -$100/MWh. This recommendation was the result of analysis performed by the MMU which observed resources offering at the offer floor, -$500/MWh, and setting price. These offers did not represent cost, were often costly to the offering resource, and harmful to nearby resources. The MMU worked with the Market Working Group to add this as an initiative[231] on the SPP Roadmap. As noted in the 2020 report, the MMU believes that raising the offer floor is a simple and cost effective solution that avoids any limitation of what costs can be included in a market offer, however, as part of the SPP Roadmap process, this initiative was added to the list of parking lot initiatives. Initiatives that are perpetually in the parking lot are at risk of being removed from the roadmap process entirely. The MMU recommends SPP remove this initiative from the parking lot and include it in the list of initiatives to be acted on.

[229] [MWG presentation]
[230] SIR75 - Market-to-Market Improvements
[231] SIR76 - Mitigation of Unduly Low Offers

2019.1 IMPROVE PRICE FORMATION

In the 2019 report, the MMU identified circumstances where market prices provide neither a short-term nor a long-term economic incentive to ensure reliability and recommended SPP and stakeholders review price formation during scarcity events and establish graduated demand curves that incentivize proper price formation.

In the MMU report on the February 2021 winter weather event, the MMU made recommendations related to improving price formation during emergency and scarcity conditions. In that report, the MMU highlighted situations where price signals did not accurately reflect underlying conditions. The recommendations in the February 2021 winter weather report, which are aimed at improving pricing outcomes, closely align with the 2019 recommendation to improve price formation. The MMU believes this recommendation is being addressed through the stakeholder processes focusing on enhancements needed as a result of the February 2021 winter weather event.

2019.2 INCENTIVIZE CAPACITY PERFORMANCE

In the 2019 report, the MMU recommended the SPP and stakeholders work to incentivize capacity performance and suggested potential options. In 2021, as part of its February 2021 winter weather event report, the MMU also made recommendations regarding capacity adequacy and performance, many of which align with this recommendation. As such, the MMU believes this recommendation will be addressed through those stakeholder processes focused on enhancements needed as a result of the February 2021 winter weather event.

2019.3 UPDATE AND IMPROVE OUTAGE COORDINATION METHODOLOGY

In the 2019 report, the MMU recommended that the outage coordination methodology be updated to cover reserve shutdown outages, lower the threshold for outages to be submitted, and properly categorize and prioritize outages as well as outage extensions. The Generator Outage Task Force, a temporary group that reported directly to the Markets and Operations Policy Committee, was tasked with reviewing and making recommendations to improve the outage coordination processes.

The Generator Outage Task Force finalized its recommendation report in fall 2021. Of the four major recommendations from that report, the hourly generation assessment process has been implemented, the outage coordination methodology changes are scheduled to be completed

April 2023, the generation assessment process impact study is being evaluated by the Supply Adequacy Working Group, and the email distribution lists are in effect.

The MMU continues to evaluate whether additional enhancements to the outage coordination methodology and processes are necessary to minimize the negative impacts of inefficient outages on the market. There are four areas of concern remaining: misalignment of outage reporting timelines and the TCR processes; outage extensions; material misstatements; and missing, inaccurate, and incomplete outage information.

2018.1 LIMIT THE EXERCISE OF MARKET POWER BY CREATING A BACKSTOP FOR PARAMETER CHANGES

In the 2018 report, the MMU recommended that SPP strengthen the language regarding non-dollar-based parameters so that the expectation for the basis of these values is clear and well-defined. The MMU noted that changes to these parameters should be limited to actual capability and should be verified, at a minimum, in the presence of market power. This recommendation is currently an initiative [232] on the SPP Roadmap ranked as a high priority.

2018.2 ENHANCE CREDIT RULES TO ACCOUNT FOR KNOWN INFORMATION IN ASSESSMENTS

In the 2018 report, the MMU made recommendations to improve SPP's credit policy in light of a credit default in the PJM market that resulted in significant financial impacts to its market participants. The MMU engaged with SPP's Credit Practice Working Group regarding this issue and the potential impact to SPP and its market participants. SPP stakeholders proposed a two-phase approach to mitigate SPP's exposure.

The Credit Practices Working Group has developed and implemented the first phase of credit policy enhancements. These enhancements are a material improvement. The second phase focused on incorporating forward-looking known information into the financial security calculations. SPP staff reviewed options for a forward-looking approach in 2021, including a mark-to-auction process. While, no phase two changes were implemented, the MMU continues to recommend the SPP and stakeholders evaluate ways to incorporate forward-looking information in the credit evaluation process.

In July 2022, FERC issued an order to show cause to four ISO/RTO's as to why their tariffs were just and reasonable in absence of either of (1) mark-to-auction mechanisms for the calculation

[232] SIR 22 - Limit Market Power Through Physical Parameters

of financial transmission right (FTR) market participants' collateral requirements and/or (2) volumetric minimum collateral requirements for FTR market participants. SPP's phase one efforts included the development and implementation of a volumetric minimum collateral requirement. However, SPP did not elect to develop and implement mark-to-auction mechanisms. SPP therefore was directed, to show cause, as to why its tariff is just and reasonable without mark-to-auction mechanisms. SPP filed comments in support of its current tariff whereas the MMU filed comments in support of mark-to-auction. FERC has yet to provide a final rule.

2018.3 DEVELOP COMPENSATION MECHANISM TO PAY FOR CAPACITY TO COVER UNCERTAINTIES

In the 2018 report, the MMU recommended SPP develop a compensation mechanism to pay for capacity needed to address uncertainties in the market.

SPP market participants approved a revision request[233] to implement an uncertainty product in April 2021 and was approved by the SPP Board of Directors July 2021. The Tariff changes for the uncertainty product design were filed with FERC in January 2022. Implementation is currently targeted for July 6, 2023.[234] Once implemented, the MMU will consider this recommendation closed.

2018.5 IMPROVE REGULATION MILEAGE PRICE FORMATION

In the 2018 annual state of the market report, the MMU recommended SPP staff review the performance of regulation mileage, and develop potential approaches to improve regulation mileage price formation. In addition, based on independent analysis, the MMU recommended SPP staff address two inefficiencies; one in the calculation of the factor used to determine average expected mileage, and one in the calculation of the clearing price for mileage.

SPP drafted revision request 504 – improved economic incentive of regulation mileage in August 2022 to address both MMU recommendations.[235] It passed the SPP stakeholder process in December 2022, and is expected to be filed with FERC by mid-2023.

The revision is expected to reduce excess regulation mileage buy-back by resources cleared for regulation, and improve price formation for the clearing price of regulation mileage. The

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[233] Revision request 449 – Uncertainty Product
[234] Southwest Power Pool, Inc., "Submission of Tariff Revisions to Add Uncertainty Reserve Product to the Integrated Marketplace," Docket No. ER22-914-000 (Jan. 28, 2022)
[235] https://www.spp.org/search?q=rr504

revision will lower the expected megawatts for cleared mileage by using the historical ratio of actual response from instructed mileage to cleared regulation, instead of instructed mileage to cleared regulation ratios, in setting the mileage factor. The actual response to mileage deployment has historically been roughly half of the instructed mileage, due to unattainable instructions coming from the four-second setpoint instructions. Making this change will reduce the mileage factor and by extension excess unused mileage buyback. The second change will set the mileage-clearing price based on the mileage offer of the marginal resource, instead of the highest mileage offer cleared. Making this change will reduce the clearing price for regulation mileage, and payments for excess mileage.

The MMU expects these changes to adequately address the recommendations regarding regulation mileage.

2017.2 ENHANCE COMMITMENT OF RESOURCES TO INCREASE RAMPING FLEXIBILITY

In 2017, the MMU recommended that SPP and its stakeholders address the issue of inadequate ramping flexibility by modifying its market rules to enhance the commitment of resources and increase ramping flexibility. The MMU noted potential options to address the commitment concerns and recommended SPP and its stakeholders explore options, such as those noted, to enhance commitment of resources and increase flexibility. This initiative[236] is on the SPP Roadmap and is currently ranked as a high priority.

2017.3 ENHANCE MARKET RULES FOR ENERGY STORAGE RESOURCES

SPP implemented its design for energy storage for compliance with FERC Order No. 841 in 2021. While the MMU filed supportive comments for the implementation of energy storage in the SPP Market, the MMU noted further areas of enhancements to be considered with electric storage integration.

Multiple initiatives were added to the SPP Roadmap to address the additional enhancements needed to fully integrate electric storage resources in the SPP markets. The MMU had previously made comments to an SPP initiative to make enhancements to the energy storage design. However, the MMU recommendation for inclusion of mitigation measures for excessively low offers was not reflected in the initiatives that were added to the SPP Roadmap.

[236] SIR 9 - Enhanced Commitment

The MMU continues to recommend SPP and stakeholders consider the implementation of mitigation measures for excessively low offers in the market.

2017.4 ADDRESS INEFFICIENCY CAUSED BY SELF-COMMITTED RESOURCES

The MMU recommended in the 2017 report that SPP and its stakeholders address the inefficiencies caused when market participants self-commit their resources in the market. The MMU then conducted an in depth study of self-commitment practices and associated inefficiencies in 2019.[237]

The MMU continues to recommend that SPP and its stakeholders explore and develop ways to reduce the incidence of self-commitment of resources outside of the market solution, including considering adding an additional day to the optimization process. An initiative[238] was added to the SPP Roadmap to implement these enhancements. This initiative is currently on hold while SPP evaluates the accuracy of its multi-day forecasts.

2014.3 ADDRESS GAMING OPPORTUNITY FOR MULTI-DAY MINIMUM RUN TIME RESOURCES

The MMU recommended changes to address a gaming opportunity in the market for resources with minimum run times greater than two days in its 2014 report. While Tariff changes to address this concern were approved by the SPP board in 2018, subsequent changes were needed to address inconsistent tariff language that the revisions revealed but did not address. An associated revision request[239] and additional tariff modification was approved through the stakeholder process. SPP filed these changes with FERC on May 7, 2020[240] and the MMU filed comments in support of the tariff changes on June 12, 2020.[241] The current implementation date for this enhancement is October 1, 2023.

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[237] *Self-committing in SPP markets: Overview, impacts, and recommendations*, https://spp.org/documents/61118/spp%20mmu%20self-commit%20whitepaper.pdf
[238] SIR 18 - HITT R3c: Implement Marketplace Enhancements: Multi-Day Market
[239] Revision request 382 – Multi-Day Minimum Run Time and Clarifications
[240] Docket No. ER20-1782, Revisions Regarding Make Whole Payments and Minimum Run Time, https://elibrary.ferc.gov/eLibrary/filelist?document_id=14858744&optimized=false
[241] Docket No. ER20-1782, MMU Comments, https://elibrary.ferc.gov/eLibrary/filelist?document_id=14861491&optimized=false

2014.4 ADDRESS ISSUES WITH THE DAY-AHEAD MUST OFFER REQUIREMENT

The MMU continues to recommend that SPP and stakeholders eliminate the limited day-ahead must-offer provision and revise the physical withholding rules to include a penalty for non-compliance, or address the design weaknesses. This initiative[242] is on the SPP Roadmap and is currently ranked as a high priority.

7.5 IMPLEMENTED RECOMMENDATIONS

The following recommendations from previous reports have been implemented in 2022.

2014.1 Improve quick-start logic

SPP implemented its fast-start resource design in May 2022. The MMU completed an analysis on fast-start pricing and documented the results of that analysis in a special issue in the fall 2022 quarterly state of the market report.[243] The MMU will continue monitor the impacts fast-start resources in the market and identify and report on those impacts where appropriate. The MMU considers this recommendation addressed with the implementation of the fast-start logic.

2017.1 Develop a ramping product

In the 2017 report, the MMU recommended SPP develop a ramping product to incent actual, deliverable flexibility which to send appropriate price signals to the market that value resource flexibility.

SPP, stakeholders, and the MMU worked together to complete a ramping product design in April 2019 which was approved by the Market Operations and Policy Committee in October 2019. This design was approved by FERC in July 2020 and implemented on March 1, 2022.

There are, however, some issues with the performance of the ramping product, as stated in this year's new recommendation, 2022.2 Address limitations with the ramp capability product.

2018.4 Enhance ability to assess a range of potential outcomes in transmission planning

The MMU has continued to recommend in its annual state of the market reports that SPP and stakeholders identify ways to study and plan for the more aggressive carbon emissions reduction targets in the 10- and 20-year studies. SPP has continued to make enhancements to its planning processes that include lowering carbon emissions targets and increasing renewable

[242] SIR6 – DA Must Offer and Physical Withholding
[243] SPP MMU quarterly state of the market report fall 2022

capacity. With the recent enhancements to the 2024 ITP studies, the MMU believes this recommendation has been addressed. The MMU will continue to engage with SPP and stakeholders to ensure future studies include reasonable assumptions with regards to renewable integration on the SPP system.

7.6 RECOMMENDATIONS UPDATE

The table below lists the status of Annual State of the Market recommendations included in previous reports and those that are new to this report. Recommendations closed prior to the completion of the previous year's report do not appear in this table. To review closed recommendations that are not covered in this report, please review earlier reports.

Figure 7–1 Annual State of the Market recommendations

	Recommendation	Report year	Current status
2022.1	Consider limitations on virtual trading during emergency conditions	2022	New recommendation in 2022
2022.2	Address limitations with the ramp capability product	2022	Discussions beginning at Market Working Group
2022.3	Improve situational awareness of transmission upgrades and improve process to reassign projects	2022	Discussions beginning at Project Cost Working Group
2022.4	Approve congestion hedging mechanism to enhance equity	2022	SPP recommendation expected at Board meeting in 2023
2021.1	Expand multi-configuration combined cycle resource model	2021	No action at this time
2020.1	Update market and outage requirements to improve funding for transmission congestion rights	2020	Stakeholder discussions in progress
2020.2	Enhance market-to-market efficiencies through collaboration with MISO	2020	SPP Roadmap initiative

	Recommendation	Report year	Current status
2020.3	Raise offer floor to -$100/MWh	2020	SPP Roadmap initiative
2019.1	Improve price formation (two issues)	2019	Issue A: SPP Roadmap initiative Issue B: Engaging stakeholders
2019.2	Incentivize capacity performance	2019	Stakeholder discussions in progress
2019.3	Update and improve outage coordination methodology	2019	Stakeholder discussion in process; some improvements have been implemented
2018.1	Limit market power by backstopping parameter changes	2018	SPP Roadmap initiative
2018.2	Enhance credit process to account for known information	2018	Awaiting FERC response to Show Cause Order
2018.3	Develop compensation or product for capacity used for uncertainties	2018	Awaiting implementation in 2023
2018.4	Enhance ability for transmission planning to cover range of outcomes	2018	Recommendation complete
2018.5	Improve regulation mileage price formation	2018	Awaiting FERC filing
2017.1	Develop ramping product	2017	Implemented 2022 – recommendation complete
2017.2	Enhance unit commitment logic	2017	SPP Roadmap initiative
2017.3	Enhance energy storage design	2017	SPP Roadmap initiative
2017.4	Reduce self-scheduling in market	2017	SPP Roadmap initiative
2017.5	Address under-scheduling of wind	2017	SPP Roadmap initiative – parking lot
2014.1	Improved quick-start logic	2014	Implemented 2022 – recommendation complete

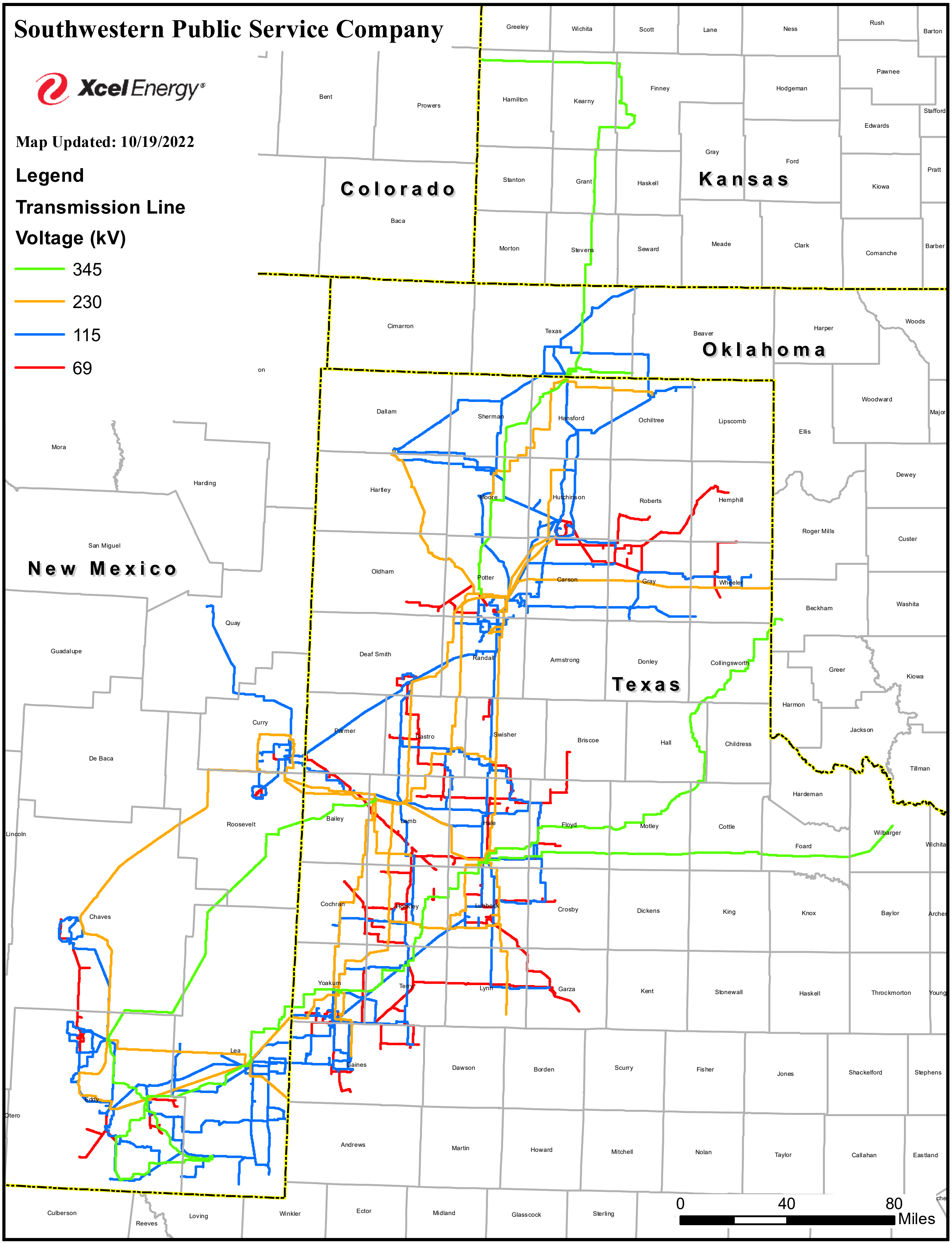
Recommendation		Report year	Current status
2014.3	Manipulation of make-whole payment provisions	2014	Awaiting implementation in 2023
2014.4	Address issues with the day-ahead must-offer requirement	2014	SPP Roadmap initiative

SPP Southwest Power Pool

MARKET MONITORING UNIT

Appendix D

SPS Transmission Map



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Appendix D-1

Detailed Transmission and Distribution Map (CONF)

CONFIDENTIAL MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Appendix D-2

Distribution Substations and Feeders – Voltage and Line Miles

Substation Name	Feeder Name	Feeder Voltage	Feeder Line Miles
34TH STREET	34ST2B45	13200 Volts	16.3
34TH STREET	34ST5B85	13200 Volts	9.0
34TH STREET	34ST5B90	13200 Volts	8.8
34TH STREET	34ST5B95	13200 Volts	12.3
ADAIR	ADAIS790	12470 Volts	8.9
ADOBE	ADOB1115	13200 Volts	69.0
AIKEN RURAL	AIKRLA110	12470 Volts	24.3
ALLMON	ALLMAT120	12000 Volts	38.5
ALLRED	ALLRS140	12470 Volts	29.0
ALLRED	ALLRS180	12470 Volts	34.9
Amherst	AMHEAM610	2400 Volts	2.4
Amherst	AMHEAM620	2400 Volts	8.1
Arrowhead	ARRO5D80	13200 Volts	30.5
Arrowhead	ARRO5D85	13200 Volts	114.0
ARTESIA 13TH ST	13TH562	4160 Volts	5.5
ARTESIA 13TH ST	13TH563	4160 Volts	7.6
ARTESIA COUNTRY CLUB	COCL3D005	12470 Volts	39.4
ARTESIA COUNTRY CLUB	COCL3D010	12470 Volts	17.5
ARTESIA SOUTH RURAL	SRUR4101	12470 Volts	20.8
ARTESIA SOUTH RURAL	SRUR4102	12470 Volts	24.2
Artesia Town	ARTT559	4160 Volts	1.1
Artesia Town	ARTT560	4160 Volts	4.7
Artesia Town	ARTT561	4160 Volts	1.7
BAILEY CO PUMP	BAILBC610	12470 Volts	0.0
BAILEY CO PUMP	BAILBC620	12470 Volts	1.7
Bainer	BAINBA601	2400 Volts	1.3
BATTLE AXE	BATX3460	22900 Volts	18.0
BATTLE AXE	BATX3465	22900 Volts	17.4
BATTLE AXE	BATX3470	22900 Volts	22.9
BATTLE AXE	BATX3485	22900 Volts	20.9
BATTLE AXE	BATX3490	22900 Volts	10.0
BATTLE AXE	BATX3495	22900 Volts	12.5
BENNETT	BENNS290	12470 Volts	30.6
BENNETT	BENNS345	12470 Volts	40.7
BENNETT	BENNS365	12470 Volts	26.7
BENSING	BENS4B135	12470 Volts	85.4
BENSING	BENS4B140	12470 Volts	76.6
BLM CLIFFSIDE	BLMC6020	4160 Volts	0.1
BLM CLIFFSIDE	BLMC6040	4160 Volts	0.1
Boardman	BOARS430	12470 Volts	11.4
Boardman	BOARS560	12470 Volts	48.0
Bowers	BOWE2053	13200 Volts	14.2
Bowers	BOWE2057	13200 Volts	109.7
Bowers	BOWE5090	13200 Volts	55.6
BRASHER	BRAS4015	12470 Volts	21.6
BRASHER	BRAS4025	12470 Volts	55.5

BRASHER	BRAS4045	12470 Volts	25.8
BRISCOE	BRIS3434	22900 Volts	5.6
BRISCOE	BRIS3457	22900 Volts	16.7
BROWNFIELD CITY	BROW6580	22900 Volts	22.8
Buckeye	BUCK2620	12470 Volts	41.3
Buckeye	BUCK2630N	12470 Volts	27.0
Buffalo	BUFF2215	13200 Volts	131.1
Buffalo	BUFF5165	13200 Volts	47.2
Burnett	BURN1394	13200 Volts	27.3
Burnett	BURN1398	13200 Volts	42.3
Bush	BUSH5205	13200 Volts	5.2
Bush	BUSH5210	13200 Volts	18.2
Bush	BUSH5215	13200 Volts	20.1
CALLAHAN	CALLCA105	12470 Volts	22.1
CALLAHAN	CALLCA110	12470 Volts	17.3
CAMPBELL ST	CAMP4A05	12470 Volts	49.1
CAMPBELL ST	CAMP4A10	12470 Volts	64.8
Canadian	CANA325	4160 Volts	7.1
Canadian	CANA335	4160 Volts	5.9
Canadian	CANA340	4160 Volts	5.9
Canadian	CANA350	4160 Volts	3.3
CANYON EAST	CANE5185	13200 Volts	30.3
CANYON EAST	CANE5190	13200 Volts	26.8
Canyon West	CANW5160	13200 Volts	10.9
Canyon West	CANW7124	13200 Volts	82.9
Canyon West	CANW7128	13200 Volts	59.8
CAPITAN	CAPI4020	12470 Volts	98.3
CAPITAN	CAPI4030	12470 Volts	45.7
CAPITAN	CAPI4C10	12470 Volts	20.0
Cargill	CARG5B60	22900 Volts	1.9
CARLISLE	CARL6635	22900 Volts	3.9
CARLISLE	CARL6645	22900 Volts	0.5
CARLISLE	CARL6650	22900 Volts	20.6
CARLSBAD WATERFIELD	CWTR4275	12470 Volts	1.8
CARLSBAD WATERFIELD	CWTR4285	12470 Volts	1.7
Carson County	CARS7030	13200 Volts	70.8
Carson County	CARS7034	13200 Volts	22.8
CAVEMAN	CVMN3C080	12470 Volts	10.7
CAVEMAN	CVMN3C085	12470 Volts	13.6
Cedar Lake East	CEDES910	12470 Volts	19.7
CENTERPORT	CTPT2D130	13200 Volts	7.1
CENTERPORT	CTPT2D135	13200 Volts	3.5
CENTERPORT	CTPT2D140	13200 Volts	4.5
CHANNING	CHAN1564	34500 Volts	28.4
CHANNING	CHAN1568	34500 Volts	27.7
CHANNING	CHAN1675	34500 Volts	14.7
CHERRY STREET	CHER5C10	13200 Volts	44.8

CHERRY STREET	CHER5C15	13200 Volts	125.4
CHINA DRAW	CHDW3C40	12470 Volts	32.0
CHINA DRAW	CHDW3C45	12470 Volts	14.4
CHINA DRAW	CHDW3C60	12470 Volts	30.2
CHINA DRAW	CHDW3C65	12470 Volts	30.1
COBLE	COBLLV830	12470 Volts	0.8
COBLE	COBLLV835	12470 Volts	33.6
Coburn Creek	CNCK1B25	13200 Volts	50.5
Coburn Creek	CNCK1B30	13200 Volts	0.2
CONE	CONECO612	2400 Volts	0.1
Conway	CONW5005	13200 Volts	134.2
Conway	CONW5010	13200 Volts	205.7
Cooper Ranch	COOR3160	12470 Volts	34.4
Cooper Ranch	COOR3170	12470 Volts	7.4
Cottonwood	COTT3070	12470 Volts	26.7
Cottonwood	COTT3075	12470 Volts	19.6
Coulter	COUL5280	13200 Volts	8.4
Coulter	COUL5285	13200 Volts	18.7
Coulter	COUL5290	13200 Volts	16.4
COUNTY LINE	COLICL110	12470 Volts	8.4
Cunningham	CUNNWTR	2400 Volts	0.0
Curry County Int	CURX3635	22900 Volts	30.5
Curry County Int	CURX3625	22900 Volts	7.6
Curry County Int	CURX3630	22900 Volts	6.5
Curry County Int	CURX3635	22900 Volts	16.5
DALHART	DALH106	2400 Volts	0.6
DALHART	DALH108	2400 Volts	5.6
DALHART	DALH1246	12470 Volts	54.9
DALHART	DALH1298	12470 Volts	47.4
DALHART	DALH1580	34500 Volts	21.3
DALHART	DALH1664	34500 Volts	45.9
DAMRON	DAMR5365	13200 Volts	1.5
DAWN	DAWN5A35	13200 Volts	110.7
DAWN	DAWN5A40	13200 Volts	14.2
DEAF SMITH INTERCHANGE	DEAF SMITH 2645	13200 Volts	0.7
DEMON	DEMN2D075	12470 Volts	11.0
DEMON	DEMN2D080	12470 Volts	18.3
DEMON	DEMN2D085	12470 Volts	20.0
DEMON	DEMN2E10	34500 Volts	9.5
Denver City East	DENES100	12470 Volts	24.1
Denver City East	DENES110	12470 Volts	41.6
DEXTER	DEXX4400	34500 Volts	11.4
Dexter Town	DEXT500	4160 Volts	19.0
Dexter Town	DEXT502	4160 Volts	8.3
DIMMITT EAST	DIMEDI150	12470 Volts	17.7
DIMMITT EAST	DIMEDI180	12470 Volts	7.1
Dimmitt South	DIMSDI110	12470 Volts	31.7

Dimmitt South	DIMSDI120	12470 Volts	7.4
Dollarhide	DOLL3215	12470 Volts	23.4
Dollarhide	DOLL3220	12470 Volts	56.9
Dollarhide	DOLL3225	12470 Volts	4.6
DOSS	DOSS6660	22900 Volts	62.0
DOSS	DOSS6670	22900 Volts	65.4
DOSS	DOSSS400	12470 Volts	46.2
DOSS	DOSSS410	12470 Volts	24.2
DOSS	DOSSS495	12470 Volts	41.6
DRINKARD	DRIN4B30	12470 Volts	28.6
DRINKARD	DRIN4B35	12470 Volts	0.0
DRINKARD	DRIN4B40	12470 Volts	30.6
DUMAS 19TH STREET	DU191175	12470 Volts	13.0
DUMAS 19TH STREET	DU191367	12470 Volts	7.8
DUMAS 19TH STREET	DU191371	12470 Volts	56.5
DUMAS 19TH STREET	DU191470	34500 Volts	1.6
DUMAS 19TH STREET	DU191498	34500 Volts	6.2
East Clovis	ECLO3315	12470 Volts	9.5
East Clovis	ECLO4360	12470 Volts	20.8
East Clovis	ECLO4370	12470 Volts	33.1
East Plant	EPLAA110	13200 Volts	10.3
East Plant	EPLAA118	13200 Volts	24.9
East Plant	EPLAA122	13200 Volts	25.5
East Plant	EPLAA126	13200 Volts	8.2
East Sanger	ESAN2910	12470 Volts	41.7
East Sanger	ESAN2920	12470 Volts	18.7
ECHO	ECHO2A160	13200 Volts	18.3
ECHO	ECHO2A165	13200 Volts	8.5
ECHO	ECHO2A170	13200 Volts	14.5
ELWOOD	ELWOLV140	12470 Volts	22.6
Estacado	ESTA5D10	13200 Volts	22.3
Estacado	ESTA5D15	13200 Volts	12.8
Estacado	ESTA5D20	13200 Volts	27.9
Estacado	ESTA5D60	13200 Volts	4.6
Estacado	ESTA5D65	13200 Volts	25.8
Estacado	ESTA5D70	13200 Volts	7.1
Etter Rural	ETTR5405	34500 Volts	60.5
Etter Rural	ETTR5410	34500 Volts	21.3
Etter Rural	ETTR5420	34500 Volts	5.7
Eunice	EUNI4B100	12470 Volts	47.0
Eunice	EUNI4B90	12470 Volts	19.9
Eunice	EUNI4B95	12470 Volts	15.9
Exell	EXEL1238	12470 Volts	42.5
Exell	EXEL1242	12470 Volts	36.7
FAIN	FAIN1105	12470 Volts	33.1
Farmers	FARM2A105	13200 Volts	1.0
Farmers	FARM2A115	13200 Volts	8.1

Farmers	FARM5385	13200 Volts	13.6
Farmers	FARM5390	13200 Volts	12.6
Farmers	FARM5395	13200 Volts	65.5
Farwell	FARWFA610	2400 Volts	4.2
Farwell	FLANS550	12470 Volts	27.1
Farwell	FARWFA610	2400 Volts	0.1
Farwell	FARWFA620	2400 Volts	7.2
Fiesta	FIES4B15	12470 Volts	9.2
Fiesta	FIES4B20	12470 Volts	8.3
Fiesta	FIES4B25	12470 Volts	55.8
FOUR WAY	FWAY1A110	12470 Volts	59.2
FOUR WAY	FWAY1A115	12470 Volts	6.5
Friona	FRIO2432	22900 Volts	3.0
Friona	FRIO2436	22900 Volts	28.5
Fritch	FRIT1360	13200 Volts	67.1
Fritch	FRIT1364	13200 Volts	70.3
GARZA INTG	GARZ6500	22900 Volts	41.8
GARZA INTG	GARZ6520	22900 Volts	34.2
GARZA INTG	GARZPO110	4160 Volts	10.8
GARZA INTG	GARZPO120	4160 Volts	8.2
GREYHOUND	GRHD4A020	12470 Volts	2.0
GREYHOUND	GRHD4A025	12470 Volts	1.5
Hale Center	HACTHR110	12000 Volts	6.2
Hale Center	HACTHR145	12000 Volts	36.0
Happy	HAPP2326	12470 Volts	5.3
Happy	HAPP7040	12470 Volts	121.4
HARRINGTON STA	HRST1234	13200 Volts	0.0
HART INDUSTRIAL	HARTHA110	12470 Volts	21.7
HART INDUSTRIAL	HARTHA120	12470 Volts	20.4
HASTINGS	HAST7074	13200 Volts	26.0
HASTINGS	HAST7078	13200 Volts	31.5
HASTINGS	HAST7082	13200 Volts	17.0
HASTINGS	HAST7086	13200 Volts	45.3
HENDRICKS	HEND6675	22900 Volts	51.4
HENDRICKS	HEND6685	22900 Volts	23.9
HENDRICKS	HEND7685	22900 Volts	0.0
HEREFORD	HERE2D45	13200 Volts	33.5
HEREFORD	HERE2D50	13200 Volts	37.3
Herring	HERR1434	34500 Volts	29.4
Herring	HERR1438	34500 Volts	1.9
HIGG EAST	HGEA6A05	12470 Volts	23.8
HIGG EAST	HGEA6A15	12470 Volts	0.0
Highland Park	HIGH5320	13200 Volts	3.6
Highland Park	HIGH5325	13200 Volts	71.4
Highland Park	HIGH5330	13200 Volts	3.2
Highland Park	HIGH5335	13200 Volts	100.0
HILLSIDE	HILS2B035	13200 Volts	11.7

HILLSIDE	HILS2B040	13200 Volts	9.9
HILLSIDE	HILS2B045	13200 Volts	39.1
HILLSIDE	HILS2B05	13200 Volts	13.4
HILLSIDE	HILS2B10	13200 Volts	12.3
HILLSIDE	HILS2B15	13200 Volts	23.8
HOBGOOD	HOBGLV404	4160 Volts	3.8
HOPI	HOPI3335	12470 Volts	8.1
HOPI	HOPI3350	12470 Volts	45.2
HOPI	HOPI3445	12470 Volts	57.1
HOPI	HOPI3B065	12470 Volts	44.2
HOPI	HOPI3B070	12470 Volts	21.1
HOWARD	HOWA2480	13200 Volts	59.0
HOWARD	HOWA2485	13200 Volts	26.4
HUNSLEY	HUNS2B105	13200 Volts	9.7
HUNSLEY	HUNS2B110	13200 Volts	10.4
HUNSLEY	HUNS2B115	13200 Volts	40.7
INDUSTRIAL	INDU1412	13200 Volts	19.0
INDUSTRIAL	INDU1416	13200 Volts	55.9
INDUSTRIAL	INDU1A01	13200 Volts	1.0
IRICK	IRICIB110	12470 Volts	27.0
IRICK	IRICIB120	12470 Volts	15.6
JAL	JAL1940	12470 Volts	44.0
JAL	JAL1950	12470 Volts	38.5
JAL	JAL1960	12470 Volts	0.0
JAYBEE	JAYBS765	12470 Volts	15.7
KILGORE	KLG3190	4160 Volts	6.0
KILGORE	KLG3195	4160 Volts	11.3
KILGORE	KLG3A60	4160 Volts	7.2
Kingsmill	KING1B80	13200 Volts	4.1
Kingsmill	KING5095	13200 Volts	6.9
Kingsmill	KING5100	13200 Volts	23.1
Kingsmill	KING5105	13200 Volts	188.6
Kingsmill	KING5110	13200 Volts	52.1
Kingsmill	KING5115	13200 Volts	31.5
KISER	KISRP960	12470 Volts	11.8
KISER	KISRP965	12470 Volts	14.8
KISER	KISRP970	12470 Volts	19.7
Kite	KITE5075	13200 Volts	31.8
Kite	KITE5B80	13200 Volts	67.8
Kite	KITE7106	13200 Volts	9.0
Kress Rural	KRERKR110	12000 Volts	9.8
Kress Rural	KRERKR120	12000 Volts	37.7
Kress Rural	KRERKR140	12000 Volts	32.1
LA PLATA	LAPL2D65	13200 Volts	44.0
LA PLATA	LAPL2D70	13200 Volts	18.5
LAKE MEREDITH	LAKM2B55	13200 Volts	29.4
LAKE MEREDITH	LAKM2B60	13200 Volts	0.2

LAKE MEREDITH	LAKM2B65	13200 Volts	27.9
Lariat	LARIMR110	12000 Volts	9.8
Lawrence Park	LAWP1A165	13200 Volts	11.5
Lawrence Park	LAWP1A170	13200 Volts	11.3
Lawrence Park	LAWP1A175	13200 Volts	8.6
Lawrence Park	LAWP1A185	13200 Volts	10.4
Lawrence Park	LAWP1A190	13200 Volts	12.8
Lawrence Park	LAWP1A195	13200 Volts	13.2
Lea National	LEAN1710	12470 Volts	0.4
Lea National	LEAN1720	12470 Volts	47.9
Lea National	LEAN1730	12470 Volts	14.2
Lea Road	LEAR1420N	12470 Volts	49.0
Lea Road	LEAR1430	12470 Volts	54.6
Lehman	LEHMLV500	12470 Volts	101.9
Lehman	LEHMLV510	12470 Volts	28.5
Levelland City	LEVCLV180	12470 Volts	52.9
Levelland City	LEVCLV190	12470 Volts	16.3
Levelland City	LEVCLV520	2400 Volts	1.5
Levelland East	LEVELV950	12470 Volts	23.7
Levelland East	LEVELV960	12470 Volts	19.3
LIPSCOMB	LPSB1E40	12470 Volts	7.3
LIPSCOMB	LPSB1E50	12470 Volts	9.7
LIPSCOMB	LPSB2580	34500 Volts	125.9
Littlefield City	LITCLI610	4160 Volts	7.3
Littlefield City	LITCLI620	4160 Volts	1.5
Littlefield City	LITCLI630	4160 Volts	6.0
Littlefield City	LITCLI640	4160 Volts	5.7
Littlefield South	LITSLI110	12470 Volts	25.0
Littlefield South	LITSLI120	12470 Volts	7.2
Littlefield West	LITWLI156	12470 Volts	9.9
Livingston Ridge	LIVR4A050	12470 Volts	3.7
Livingston Ridge	LIVR4A055	12470 Volts	40.2
Livingston Ridge	LIVR4A060	12470 Volts	3.1
Lockney Rural	LOCR3417	22900 Volts	20.2
Lockney Rural	LOCR3421	22900 Volts	12.1
Lockney Rural	LOCRLA140	12000 Volts	22.0
Lockney Rural	LOCRLA150	12000 Volts	27.0
LOVING SOUTH	LOSO4C020	12470 Volts	6.1
LOVING SOUTH	LOSO4C025	12470 Volts	19.2
LOVING SOUTH	LOSO4C040	12470 Volts	16.7
LOVING SOUTH	LOSO4C045	12470 Volts	36.2
LYNCH	LYNC3E65	22900 Volts	13.1
LYNCH	LYNC3E70	22900 Volts	7.8
LYNN INTG.	LYNN6300	22900 Volts	5.6
LYNN INTG.	LYNN6340	22900 Volts	13.8
LYNN INTG.	LYNN6510	22900 Volts	27.5
Lyons	LYON5C20	13200 Volts	15.3

Lyons	LYON5C25	13200 Volts	62.4
MAGNUM ROAD	MGNM3C125	12470 Volts	27.4
MALAGA BEND	MALB3670	22900 Volts	27.8
MALAGA BEND	MALB3C050	12470 Volts	18.1
MALAGA BEND	MALB3C060	12470 Volts	8.8
Manhattan	MANH5135	13200 Volts	6.8
Manhattan	MANH7160	13200 Volts	11.3
Manhattan	MANH7164	13200 Volts	22.1
McCullough	MCCU5085	13200 Volts	67.0
McCullough	MCCU7002	13200 Volts	18.5
McCullough	MCCU7005	13200 Volts	64.4
MCLEAN RURAL	MCLE5300	13200 Volts	122.0
MCLEAN RURAL	MCLE5B105	13200 Volts	34.2
MEDANOS	MDNS3E05	22900 Volts	20.0
MEDANOS	MDNS3E10	22900 Volts	12.4
MEDANOS	MDNS3E15	22900 Volts	14.0
Middleton	MIDDLV810	12470 Volts	21.8
Middleton	MIDDLV820	12470 Volts	33.5
Millen	MILL3010	12470 Volts	22.5
Millen	MILL3020	12470 Volts	16.7
Millen	MILL4B035	12470 Volts	32.5
Millen	MILL4B040	12470 Volts	17.1
Millen	MILL4B045	12470 Volts	14.9
Monroe	MONR6610	22900 Volts	24.4
Monument	MONU1310	12470 Volts	33.2
Monument	MONU1320N	12470 Volts	24.6
Monument	MONU1330	12470 Volts	62.8
Moore Co	MOORM055	12470 Volts	20.7
Moore Co	MOORM060	12470 Volts	31.9
Moore Co	MOORM065	12470 Volts	35.0
Morton	MORTM120	4160 Volts	9.3
Morton	MORTM130	4160 Volts	14.9
MOSS	MOSS6320	22900 Volts	38.5
MOSS	MOSS6540	22900 Volts	40.9
MULESHOE VALLEY	MULVMR150	12470 Volts	8.4
MULESHOE VALLEY	MULVMR155	12470 Volts	21.0
MULESHOE WATERFIELD	MWTFMW111	12470 Volts	0.3
Muleshoe West	MULWMR130	12000 Volts	24.7
Muleshoe West	MULWMR140	12000 Volts	10.0
MURPHY	MURP7425	22900 Volts	0.4
MURPHY	MURP7430	22900 Volts	0.1
MURPHY	MURP7535	22900 Volts	57.9
Norris Street	NORRCL130	12470 Volts	19.9
Norris Street	NORRCL140	12470 Volts	42.8
North Canal	NCAN4180	12470 Volts	17.5
North Canal	NCAN4190	12470 Volts	24.1
North Canal	NCAN4195	12470 Volts	21.1

North Clovis	NCLO4110	12470 Volts	19.5
North Clovis	NCLO4120	12470 Volts	33.0
North Hobbs	NHOB1110	12470 Volts	23.1
North Hobbs	NHOB1120	12470 Volts	10.0
North Hobbs	NHOB1130	12470 Volts	6.6
North Hobbs	NHOB1140	12470 Volts	16.6
North Hobbs	NHOB1150	12470 Volts	12.1
NORTH LOVING	NOLO3D25	12470 Volts	70.6
NORTH LOVING	NOLO3D35	12470 Volts	57.4
Northeast Hobbs	NEHOB2330	12470 Volts	44.2
Northeast Hobbs	NEHOB2340	12470 Volts	20.2
OCHOA	OCHO2010	12470 Volts	44.7
OCHOA	OCHO2020	12470 Volts	50.4
Ocotillo	OCOT3435	12470 Volts	3.7
Ocotillo	OCOT4280	12470 Volts	13.5
Ocotillo	OCOT4290	12470 Volts	38.6
OLTON	OLTOSO170	12000 Volts	22.8
OLTON	OLTOSO180	12000 Volts	38.4
OSAGE	OSAG6040	13200 Volts	36.3
OSAGE	OSAG6060	13200 Volts	8.2
OSAGE	OSAG6065	13200 Volts	17.9
OSAGE	OSAG6070	13200 Volts	1.7
OUTPOST	OUTP2A050	13200 Volts	82.7
OUTPOST	OUTP2A055	13200 Volts	94.4
OUTPOST	OUTP2A060	13200 Volts	24.1
Pacific	PACILV930	12470 Volts	10.4
Pacific	PACILV940	12470 Volts	36.1
PALO DURO	PALO1C35	13200 Volts	112.1
Parmer County	PARM2465	22900 Volts	15.1
Parmer County	PARM2475	22900 Volts	30.7
PCA2	PCA4390	12470 Volts	25.0
PCA2	PCA4395	12470 Volts	34.1
PEARL	PEAR4D25	12470 Volts	35.5
PEARL	PEAR4D30	12470 Volts	49.3
PEARL	PEAR4D35	12470 Volts	14.7
PECOS	PCOS3B85	12470 Volts	32.5
PECOS	PCOS3B90	12470 Volts	14.5
PECOS	PCOS3B95	12470 Volts	14.5
Perryton	PERR1230	12470 Volts	21.8
Perryton	PERR1235	12470 Volts	57.8
Perryton	PERR1530	12470 Volts	21.5
Perryton	PERR1535	12470 Volts	7.5
Pierce	PIER5B00	13200 Volts	15.1
Pierce	PIER5B05	13200 Volts	8.2
Pierce	PIER5B10	13200 Volts	7.5
PLAINVIEW EAST	PLVEP150	12470 Volts	2.8
PLAINVIEW EAST	PLVEP160	12470 Volts	12.0

PLAINVIEW EAST	PLVEP180	12470 Volts	43.4
Plainview North	PLVNP260	12470 Volts	25.8
Plainview North	PLVNP270	12470 Volts	9.7
Plainview South	PLVSP210	12470 Volts	15.0
Plainview South	PLVSP220	12470 Volts	15.8
Plainview South	PLVSP230	12470 Volts	16.2
Plainview West	PLVWP110	12470 Volts	11.8
Plainview West	PLVWP120	12470 Volts	3.5
Plainview West	PLVWP130	12470 Volts	25.3
Plainview West	PLVWP140	12470 Volts	2.5
Plant X	PLAXX310	12470 Volts	71.1
PONDEROSA	POND3565	22900 Volts	30.1
PONDEROSA	POND3570	22900 Volts	26.7
PONDEROSA	POND3585	22900 Volts	34.1
PORTALES #1	POR1PO610	4160 Volts	5.8
PORTALES #1	POR1PO620	4160 Volts	16.7
PORTALES #1	POR1PO630	4160 Volts	2.0
Portales 2	POR23310	12470 Volts	9.2
Portales 2	POR2PO680	4160 Volts	16.4
Portales South	PORSPO685	4160 Volts	17.2
Portales South	PORSPO690	4160 Volts	8.3
Portales Waterfield	PWTR3090	12470 Volts	35.8
Portales Waterfield	PWTR3095	12470 Volts	19.6
Prentice	PRENS875	12470 Volts	14.3
PRESTON WEST	PREW5A105	13200 Volts	2.2
PRESTON WEST	PREW5A110	13200 Volts	4.7
PRESTON WEST	PREW5A115	13200 Volts	15.9
PRESTON WEST	PREW5A120	13200 Volts	2.8
PRICE	PRIC4070	12470 Volts	17.8
PRICE	PRIC4080	12470 Volts	39.4
PRICE	PRIC4490	12470 Volts	40.2
PRINGLE	PRIN1E15	34500 Volts	41.6
Puckett West	PUCW5C30	13200 Volts	8.0
Puckett West	PUCW5C35	13200 Volts	22.4
Puckett West	PUCW5C60	13200 Volts	9.7
Pullman	PULL2A40	13200 Volts	24.4
Pullman	PULL2A45	13200 Volts	1.5
Pullman	PULL2A50	13200 Volts	2.4
Riley	RILES500	12470 Volts	14.4
Riley	RILES510	12470 Volts	15.7
RIVERVIEW	RIVER090	13200 Volts	9.6
RIVERVIEW	RIVER095	13200 Volts	52.8
RIVERVIEW	RIVER100	13200 Volts	90.8
ROADRUNNER	RDRN4600	22900 Volts	25.5
ROADRUNNER	RDRN4605	22900 Volts	5.9
ROADRUNNER	RDRN4610	22900 Volts	32.3
ROBERTS COUNTY	ROBE7065	13200 Volts	56.5

ROBERTS COUNTY	ROBE7090	13200 Volts	50.9
ROSWELL CITY	ROSC3260	12470 Volts	22.9
ROSWELL CITY	ROSC3265	12470 Volts	22.1
ROSWELL CITY	ROSC4330	12470 Volts	29.0
ROSWELL CITY	ROSC4350	12470 Volts	18.5
Roxana	ROXA2076	13200 Volts	53.8
Roxana	ROXA2334	13200 Volts	47.9
Russell	RUSSS385	12470 Volts	23.7
Russell	RUSSS395	12470 Volts	0.1
SAGE BRUSH	SAGE4515	22900 Volts	5.6
SAGE BRUSH	SAGE4520	22900 Volts	22.6
SAGE BRUSH	SAGE4525	22900 Volts	51.4
Samson	SAMS4050	12470 Volts	128.8
Samson	SAMS4060	12470 Volts	74.5
Sand Dunes	SAND3230	12470 Volts	19.3
Sand Dunes	SAND3235	12470 Volts	32.8
Sand Dunes	SAND3A75	12470 Volts	7.1
SEMINOLE INTG	SEMINOLE INTG 6E00	22900 Volts	67.4
SEMINOLE INTG	SEMINOLE INTG 6E10	22900 Volts	57.6
Sherman County	SHER1448	34500 Volts	14.7
Sherman County	SHER1452	34500 Volts	25.0
Sherman County	SHER1456	34500 Volts	54.5
SIERRA	SERA4D015	12470 Volts	10.4
SIERRA	SERA4D020	12470 Volts	40.2
SISKO	SISK4D125	12470 Volts	10.2
SISKO	SISK4D130	12470 Volts	18.9
SISKO	SISK4D135	12470 Volts	25.7
SKUNK CREEK	SKCK5490	34500 Volts	0.0
Slaton	SLAT6600	22900 Volts	18.9
Slaton	SLAT6690	22900 Volts	16.4
Slaton	SLATSL140	4160 Volts	6.3
Slaton	SLATSL150	4160 Volts	9.8
Smith	SMIT571	4160 Volts	2.3
Smith	SMIT572	4160 Volts	14.6
SONCY	SONC5130	13200 Volts	8.7
SONCY	SONC7020	13200 Volts	5.3
SONCY	SONC7024	13200 Volts	11.3
SONCY	SONC7116	13200 Volts	4.0
South Floydada	SFLO3547	22900 Volts	13.7
South Floydada	SFLO3551	22900 Volts	25.3
SOUTH GEORGIA	SGEO2338	13200 Volts	23.9
SOUTH GEORGIA	SGEO2342	13200 Volts	8.1
SOUTH GEORGIA	SGEO2346	13200 Volts	9.9
SOUTH GEORGIA	SGEO5B30	13200 Volts	2.3
SOUTH GEORGIA	SGEO5B35	13200 Volts	2.7
SOUTH GEORGIA	SGEO5B40	13200 Volts	19.2
South Hobbs	SHOB1210N	12470 Volts	16.4

South Hobbs	SHOB1230N	12470 Volts	75.9
South Hobbs	SHOB3250	12470 Volts	1.1
South Hobbs	SHOB3255	12470 Volts	27.2
SOUTHEAST	SOEA5C80	13200 Volts	31.9
SOUTHEAST	SOEA5C85	13200 Volts	79.8
Southland	SOUTSO110	4160 Volts	8.1
SPEARMAN	SPEA301	4160 Volts	7.1
SPEARMAN	SPEA302	4160 Volts	15.4
SPEARMAN	SPEA401	4160 Volts	17.9
SPEARMAN	SPEA402	4160 Volts	8.5
Spearman Int	SPEX1512	34500 Volts	71.6
SPRING DRAW	SPRD2C70	13200 Volts	51.4
SPRING DRAW	SPRD2C75	13200 Volts	51.2
SPRING DRAW	SPRD2C80	13200 Volts	63.8
Springcreek	SPRI1316	13200 Volts	25.4
Springcreek	SPRI1320	13200 Volts	61.9
SPRINGLAKE	SPRISO140	12470 Volts	40.4
SPRINGLAKE	SPRISO150	12470 Volts	26.4
STRATA	STRA4320	12470 Volts	0.1
STRATA	STRA4C50	12470 Volts	18.3
Sudan Rural	SUDRSR110	12470 Volts	4.9
Sudan Rural	SUDRSR120	12470 Volts	6.9
Sunset	SUNS1A030	13200 Volts	36.5
Sunset	SUNS1A035	13200 Volts	6.9
Sunset	SUNS5D35	13200 Volts	8.8
Sunset	SUNS5D40	13200 Volts	56.0
Teague	TEAG2110	12470 Volts	55.9
Teague	TEAG2120	12470 Volts	23.1
Tenneco	TENNS440	12470 Volts	19.4
Tenneco	TENNS605	12470 Volts	29.6
Texaco	TEXALV980	12470 Volts	9.8
Texas Farms	TXFA1125	12470 Volts	49.3
TOKIO	TOKIS800	12470 Volts	37.1
TOLK STA	TOLKWTR1	12470 Volts	5.2
TUCO	TUCON404	12470 Volts	60.7
TUCO	TUCON412	12470 Volts	16.3
Tweedy	TWEE4B75	12470 Volts	0.9
Tweedy	TWEE4B80	12470 Volts	1.9
UNITED SALT	UNSA4380	12470 Volts	5.0
Urton	URTO4335	12470 Volts	20.1
Urton	URTO4340	12470 Volts	20.0
Van Buren	VANB7044	13200 Volts	3.6
Van Buren	VANB7046	13200 Volts	27.8
Van Buren	VANB7048	13200 Volts	6.5
Van Buren	VANB7190	13200 Volts	3.0
Van Buren	VANB7194	13200 Volts	3.3
Van Buren	VANB7198	13200 Volts	12.9

Vega	VEGA5170	13200 Volts	38.5
Vega	VEGA5195	13200 Volts	122.9
Vickers	VICK6680	22900 Volts	44.7
Wade	WADE1B015	12470 Volts	4.4
Wade	WADE1B025	12470 Volts	22.4
Ward	WARD2510	12470 Volts	39.4
Weatherly	WEAT1350	13200 Volts	20.5
Weatherly	WEAT1354	13200 Volts	15.9
WELLMAN	WELLS755	12470 Volts	37.5
West Anton	WANT3502	22900 Volts	22.3
West Bender	WBEN2710	12470 Volts	53.2
West Bender	WBEN2720	12470 Volts	21.7
West Borger	WBOR1A10	13200 Volts	20.9
West Borger	WBOR1A15	13200 Volts	0.6
West Borger	WBOR1A20	13200 Volts	6.6
West Clovis	WCLO3426	22900 Volts	5.1
West Clovis	WCLOCL150	12470 Volts	24.3
West Clovis	WCLOCL160	12470 Volts	54.2
WESTERN STREET	WSST2D015	13200 Volts	8.7
WESTERN STREET	WSST2D020	13200 Volts	8.3
WESTERN STREET	WSST2D025	13200 Volts	9.7
Westridge	WRIDP450	12470 Volts	23.2
Westridge	WRIDP460	12470 Volts	24.0
Whitaker	WHIT5260	13200 Volts	64.2
Whitaker	WHIT5265	13200 Volts	3.9
Whitaker	WHIT5270	13200 Volts	4.4
White City	WHIC4242	12470 Volts	15.5
White City	WHIC4246	12470 Volts	34.7
White Deer	WHDR2C035	13200 Volts	72.4
White Deer	WHDR2C040	13200 Volts	3.1
Whiteface	WHITLV210	12470 Volts	47.8
Whiteface	WHITLV220	12470 Volts	10.3
WHITHARREL	WHITLV710	4160 Volts	3.5
Whitten	WHIT2410	12470 Volts	33.6
Whitten	WHIT2420	12470 Volts	18.0
WILDORADO	WILD2014	13200 Volts	77.5
WILDORADO	WILD2018	13200 Volts	61.9
WOODDRAW	WOOD3A05	12470 Volts	32.9
WOODDRAW	WOOD3A10	12470 Volts	13.2
WOODDRAW	WOOD3A20	12470 Volts	21.4
YELLOW HOUSE	YELLLV900	12470 Volts	13.5
Zavalla	ZAVALV780	12470 Volts	8.7
Zavalla	ZAVALV790	12470 Volts	10.2
ZIA	ZIA3205	12470 Volts	28.0

Appendix D-3

Planned Transmission Upgrades and Planned Distribution Capital Projects

Anticipated Distribution Project List - Discrete Going In-Service between 1/1/2024 and 12/31/2026	State
Amarillo / FM 2575 - 6.5 Mile Reconductor	TX
Amarillo Uderground Network to Line Conversion Program	TX
Carlsbad / CWTR4285 - Waterfield Buildout	NM
Higgs / LPSB2580 - 12 Mile Rebuild (Part 1)	TX
Higgs / LPSB2580 - 13 Mile Rebuild (Part 2)	TX
Hobbs / Earthstone Pakse South - PME	NM
Install 50 MVA Transformer at Phantom Substation	NM
Install Clovis North 2nd transformer (50 MVA)	NM
Install Hereford NE 3rd Transformer (28 MVA)	TX
Install Medanos 2nd Transformer (50 MVA)	NM
Install New Arnot Substation (28 MVA Transformer)	TX
Install New Aztec Substation	NM
Install New Breaker at CAMX Substation	TX
Install New Bunavista Substation	TX
Install New Chase Substation (28 MVA Transformer)	NM
Install New Coronado Substation (2x 50 MVA Transformers)	NM
Install New Dasco Substation (28 MVA Transformer)	NM
Install New Harvester Substation	TX
Install New Hornet Substation	TX
Install New Hughes Substation	TX
Install New Jackrabbit Substation (50 MVA Transformer)	TX
Install New Matson Substation (28 MVA Transformer)	TX
Install New Percy Substation	NM
Install New Pointer Substation	TX
Install New Quahada Feeder	NM
Install New Tercio Substation	NM
Install New Wolverine Substation (14 MVA Transformer)	TX
Install New Zama Substation (28 MVA Transformer)	NM
Install Two New Breakers at WIPP Substation	NM
Jal / Roadrunner Substation - TF 2 Feeders	NM
Jal / WHIT2410 - Line Reinforcement	NM
Leveland / Alamo to College - 1.12 Mile Reconductor	TX
Pampa / KITE5B80 - HWY 282 4 Mile Reinforce	TX
Pampa / KITE5B80 - HWY 70 10 Mile Reinforce	TX
Phantom Substation - Feeder 4555 (East)	NM
Phantom Substation - Feeder 4560 (Northeast)	NM
Plainview / PLVSP230 - S Date 2.5 Mile Reinforce	TX
Roswell - Chase Substation Feeder Work	NM
SPS Substation Fiber Ring Installation	TX
Tucumcari / CAMP4A10 - Vault Removals	NM
Wood Draw Substation Feeder Work	NM

Appendix E

Electric Energy and Demand Forecast

- ***Current Load Forecast Tables:*** This appendix contains tables of the forecast energy sales and coincident peak demand for each year within the planning period, 2024-2043:

  – Annual sales of energy and coincident peak demand on a system-wide basis;

  – Annual sales of energy and coincident peak demand by customer class;

  – Annual sales of energy and coincident peak demand disaggregated between Commission jurisdictional sales, FERC jurisdictional sales, and sales subject to the jurisdiction of other states;

  – Annual Sales of Energy and Coincident Peak Demand by Retail and Wholesale Customer Class;

  – Annual coincident peak system losses and the allocation of such losses to the transmission and distribution components of the system;

  – Assumptions for economic and demographic factors relied on in load forecasting;

  – Expected capacity and energy impacts of existing and proposed demand-side resources;

  – Annual Actual and Forecasted Firm Peak Demand for All Scenarios;

  – Annual Actual and Forecasted Energy Sales for All Scenarios;

  – Annual Energy Sales Forecast Comparison;

  – Annual Coincident Peak Demand Forecast Comparison;

  – Annual Weather Normalized Firm Peak Demand Forecast Comparison;

  – Annual Coincident Peak Demand Forecast Comparison to Prior IRP; and

  – Annual Energy Sales Forecast Comparison to Prior IRP.

Table D-1: SPS's Annual Energy Sales and Coincident Peak Demand Forecasts in the Context of the Last Twelve Years of History

	Energy Sales (GWh)	Annual Increase (GWh)	Peak Demand (MW)	Annual Increase (MW)
2012	26,614	(2,229)	5,145	(10)
2013	27,443	829	5,082	(63)
2014	26,162	(1,281)	4,847	(235)
2015	24,584	(1,578)	4,654	(193)
2016	24,678	93	4,806	152
2017	24,223	(455)	4,348	(458)
2018	25,433	1,210	4,622	274
2019	24,677	(756)	4,269	(353)
2020	23,138	(1,540)	3,748	(521)
2021	23,045	(92)	3,969	221
2022	24,543	1,498	4,227	258
2023	24,529	(14)	3,992	(235)
2024	27,036	2,507	4,375	383
2025	28,836	1,800	4,582	207
2026	29,102	265	4,568	(14)
2027	29,279	177	4,648	80
2028	29,767	488	4,699	51
2029	30,076	309	4,734	36
2030	30,410	335	4,780	45
2031	30,671	261	4,835	56
2032	30,905	234	4,855	20
2033	31,186	281	4,888	33
2034	31,508	322	4,931	42
2035	31,792	284	4,983	52
2036	32,076	283	5,016	33
2037	32,374	298	5,052	36
2038	32,667	293	5,089	37
2039	32,897	230	5,132	43
2040	33,247	350	5,161	30
2041	33,610	363	5,204	42
2042	33,963	354	5,243	40
2043	34,281	318	5,294	50

Table D-2: Forecasted Annual Sales of Energy and Coincident Peak Demand by Customer Class

	Energy Sales (GWh)					Coincident Peak Demand (MW)				
	Residential	Commercial & Industrial	Other	Resale	Total	Residential	Commercial & Industrial	Other	Resale	Total
2023	3,632	19,292	511	1,095	24,529	1,015	2,768	108	125	4,016
2024	3,683	21,883	501	970	27,036	1,121	3,059	119	100	4,399
2025	3,692	23,765	503	876	28,836	1,175	3,206	125	100	4,606
2026	3,713	24,524	503	362	29,102	1,198	3,267	127	-	4,592
2027	3,739	25,040	500	-	29,279	1,218	3,324	130	-	4,672
2028	3,776	25,492	498	-	29,767	1,232	3,360	131	-	4,722
2029	3,805	25,772	499	-	30,076	1,241	3,385	132	-	4,758
2030	3,857	26,055	498	-	30,410	1,253	3,417	133	-	4,803
2031	3,925	26,250	496	-	30,671	1,267	3,457	135	-	4,859
2032	4,017	26,394	495	-	30,905	1,272	3,471	135	-	4,878
2033	4,105	26,586	496	-	31,186	1,281	3,494	136	-	4,911
2034	4,216	26,796	496	-	31,508	1,292	3,524	137	-	4,953
2035	4,340	26,958	494	-	31,792	1,305	3,561	139	-	5,005
2036	4,465	27,118	493	-	32,076	1,314	3,584	140	-	5,038
2037	4,581	27,298	494	-	32,374	1,323	3,609	141	-	5,073
2038	4,721	27,452	494	-	32,667	1,333	3,636	142	-	5,110
2039	4,874	27,530	493	-	32,897	1,344	3,666	143	-	5,152
2040	5,046	27,710	491	-	33,247	1,351	3,687	144	-	5,182
2041	5,206	27,911	492	-	33,610	1,362	3,716	145	-	5,224
2042	5,379	28,091	493	-	33,963	1,373	3,744	146	-	5,263
2043	5,555	28,236	491	-	34,281	1,386	3,780	147	-	5,313

Table D-3: Forecasted Annual Sales of Energy and Coincident Peak Demand by Jurisdiction

	Energy Sales (GWh)				Coincident Peak Demand (MW)			
	Commission	FERC	Other States	Total	Commission	FERC	Other States	Total
2023	9,785	1,095	13,649	24,529	1,477	125	2,414	4,016
2024	11,930	970	14,137	27,036	1,632	100	2,667	4,399
2025	13,620	876	14,341	28,836	1,711	100	2,796	4,606
2026	14,382	362	14,357	29,102	1,743	-	2,849	4,592
2027	14,924	-	14,355	29,279	1,773	-	2,898	4,672
2028	15,372	-	14,395	29,767	1,793	-	2,930	4,722
2029	15,585	-	14,491	30,076	1,806	-	2,952	4,758
2030	15,796	-	14,614	30,410	1,823	-	2,980	4,803
2031	16,032	-	14,639	30,671	1,844	-	3,014	4,859
2032	16,140	-	14,765	30,905	1,852	-	3,027	4,878
2033	16,224	-	14,962	31,186	1,864	-	3,047	4,911
2034	16,338	-	15,171	31,508	1,880	-	3,073	4,953
2035	16,414	-	15,379	31,792	1,900	-	3,105	5,005
2036	16,460	-	15,616	32,076	1,912	-	3,125	5,038
2037	16,493	-	15,880	32,374	1,926	-	3,147	5,073
2038	16,516	-	16,151	32,667	1,940	-	3,170	5,110
2039	16,479	-	16,418	32,897	1,956	-	3,197	5,152
2040	16,475	-	16,772	33,247	1,967	-	3,215	5,182
2041	16,492	-	17,118	33,610	1,983	-	3,241	5,224
2042	16,546	-	17,417	33,963	1,998	-	3,265	5,263
2043	16,567	-	17,715	34,281	2,017	-	3,296	5,313

Table D-4: Historical and Forecasted Annual Sales of Energy and Coincident Peak Demand by Retail and Wholesale Customer Class

	Energy (GWh)			Peak (MW)		
	Retail Firm	Wholesale Firm	System Firm	Retail Firm	Wholesale Firm	System Firm
2012	18,532	8,082	26,614	3,378	1,767	5,145
2013	18,768	8,675	27,443	3,341	1,741	5,082
2014	19,108	7,055	26,162	3,316	1,531	4,847
2015	19,127	5,457	24,584	3,310	1,344	4,654
2016	19,259	5,419	24,678	3,436	1,370	4,806
2017	19,305	4,917	24,223	3,407	941	4,348
2018	20,450	4,982	25,433	3,590	1,032	4,622
2019	21,027	3,650	24,677	3,748	521	4,269
2020	20,574	2,563	23,138	3,686	417	4,102
2021	20,860	2,185	23,045	3,594	375	3,969
2022	22,612	1,932	24,543	3,951	276	4,227
2023	23,434	1,095	24,529	3,891	125	4,016
2024	26,066	970	27,036	4,299	100	4,399
2025	27,960	876	28,836	4,506	100	4,606
2026	28,739	362	29,102	4,592	0	4,592
2027	29,279	0	29,279	4,672	0	4,672
2028	29,767	0	29,767	4,722	0	4,722
2029	30,076	0	30,076	4,758	0	4,758
2030	30,410	0	30,410	4,803	0	4,803
2031	30,671	0	30,671	4,859	0	4,859
2032	30,905	0	30,905	4,878	0	4,878
2033	31,186	0	31,186	4,911	0	4,911
2034	31,508	0	31,508	4,953	0	4,953
2035	31,792	0	31,792	5,005	0	5,005
2036	32,076	0	32,076	5,038	0	5,038
2037	32,374	0	32,374	5,073	0	5,073
2038	32,667	0	32,667	5,110	0	5,110
2039	32,897	0	32,897	5,152	0	5,152
2040	33,247	0	33,247	5,182	0	5,182
2041	33,610	0	33,610	5,224	0	5,224
2042	33,963	0	33,963	5,263	0	5,263
2043	34,281	0	34,281	5,313	0	5,313

Table D-5: Forecasted Coincident Peak Demand System Losses (MW)

	Retail						
	Secondary Distribution	Primary Distribution	Sub-Transmission	Backbone Transmission	Total Retail	FERC	Total System
2023	267	85	5	26	383	4	387
2024	295	94	5	28	423	3	426
2025	309	99	6	30	443	3	446
2026	315	101	6	30	452	0	452
2027	321	102	6	31	460	0	460
2028	324	103	6	31	465	0	465
2029	327	104	6	31	468	0	468
2030	330	105	6	32	473	0	473
2031	334	106	6	32	478	0	478
2032	335	107	6	32	480	0	480
2033	337	108	6	32	483	0	483
2034	340	108	6	33	487	0	487
2035	344	110	6	33	492	0	492
2036	346	110	6	33	496	0	496
2037	348	111	6	33	499	0	499
2038	351	112	6	34	503	0	503
2039	354	113	6	34	507	0	507
2040	356	113	6	34	510	0	510
2041	359	114	6	34	514	0	514
2042	361	115	6	35	518	0	518
2043	365	116	7	35	523	0	523

Table D-6: Economic and Demographic Assumptions Used in Load Forecasting

Variable	Real Gross County Product - New Mexico Service Area		Real Gross County Product - Texas Service Area		Consumer Price Index		Real Personal Income - New Mexico Service Territory		Real Personal Income - Texas Service Territory	
Units	Millions of 2009 $	Pct Chg	Millions of 2009 $	Pct Chg	1982-84=1.00	Pct Chg	Millions of 2009 $	Pct Chg	Millions of 2009 $	Pct Chg
2023	26,378		49,046		3.05		14,341		29,526	
2024	27,480	4.2%	49,848	1.6%	3.13	2.5%	14,685	2.4%	30,069	1.8%
2025	28,752	4.6%	51,122	2.6%	3.20	2.2%	15,122	3.0%	30,834	2.5%
2026	29,803	3.7%	52,381	2.5%	3.27	2.2%	15,512	2.6%	31,514	2.2%
2027	30,878	3.6%	53,134	1.4%	3.34	2.3%	15,933	2.7%	32,157	2.0%
2028	32,068	3.9%	53,966	1.6%	3.42	2.2%	16,389	2.9%	32,786	2.0%
2029	33,334	3.9%	54,974	1.9%	3.49	2.1%	16,852	2.8%	33,408	1.9%
2030	34,667	4.0%	55,923	1.7%	3.56	2.1%	17,309	2.7%	34,047	1.9%
2031	36,033	3.9%	56,868	1.7%	3.64	2.1%	17,784	2.7%	34,693	1.9%
2032	37,623	4.4%	57,828	1.7%	3.72	2.2%	18,220	2.5%	35,377	2.0%
2033	39,338	4.6%	58,734	1.6%	3.80	2.2%	18,707	2.7%	36,099	2.0%
2034	41,139	4.6%	59,752	1.7%	3.88	2.1%	19,176	2.5%	36,820	2.0%
2035	42,942	4.4%	60,838	1.8%	3.96	2.1%	19,683	2.6%	37,538	2.0%
2036	44,828	4.4%	61,924	1.8%	4.04	2.1%	20,145	2.3%	38,337	2.1%
2037	46,782	4.4%	63,039	1.8%	4.13	2.0%	20,631	2.4%	39,153	2.1%
2038	48,770	4.2%	64,101	1.7%	4.21	2.1%	21,097	2.3%	39,928	2.0%
2039	50,782	4.1%	65,205	1.7%	4.30	2.0%	21,598	2.4%	40,678	1.9%
2040	52,984	4.3%	66,423	1.9%	4.38	2.1%	22,135	2.5%	41,460	1.9%
2041	55,210	4.2%	67,635	1.8%	4.48	2.1%	22,624	2.2%	42,229	1.9%
2042	57,452	4.1%	68,961	2.0%	4.57	2.1%	23,128	2.2%	43,059	2.0%
2043	59,826	4.1%	70,250	1.9%	4.67	2.1%	23,636	2.2%	43,911	2.0%

Table D-7: Economic and Demographic Assumptions Used in Load Forecasting (continued)

Variable	Non-farm Employment - New Mexico		Non-farm Employment - Texas		Real Gross Domestic Product		Household - Texas Service Territory		Household - New Mexico Service Territory	
Units	Thousands	Pct Chg	Thousands	Pct Chg	Billions of 2012 $	Pct Chg	Thousands	Pct Chg	Thousands	Pct Chg
2023	111		231		20,251		218		99	
2024	111	0.0%	228	-0.9%	20,440	0.9%	219	0.4%	99	0.4%
2025	111	0.7%	228	0.0%	20,765	1.6%	219	0.3%	100	0.6%
2026	112	0.6%	229	0.2%	21,172	2.0%	220	0.2%	100	0.6%
2027	113	0.8%	229	0.2%	21,557	1.8%	221	0.3%	101	0.7%
2028	114	0.7%	230	0.1%	21,941	1.8%	221	0.3%	102	0.8%
2029	114	0.4%	230	0.0%	22,297	1.6%	222	0.3%	103	0.8%
2030	115	0.6%	230	0.1%	22,667	1.7%	223	0.5%	103	0.8%
2031	115	0.5%	230	0.0%	23,044	1.7%	224	0.7%	104	0.9%
2032	116	0.6%	230	0.1%	23,444	1.7%	226	0.7%	105	0.8%
2033	117	0.6%	231	0.2%	23,859	1.8%	228	0.7%	106	0.7%
2034	117	0.6%	231	0.2%	24,286	1.8%	229	0.6%	106	0.6%
2035	118	0.5%	232	0.2%	24,712	1.8%	231	0.7%	107	0.7%
2036	119	0.5%	232	0.2%	25,132	1.7%	232	0.6%	108	0.7%
2037	119	0.5%	233	0.2%	25,564	1.7%	233	0.6%	109	0.6%
2038	120	0.4%	233	0.3%	26,015	1.8%	235	0.6%	109	0.5%
2039	120	0.4%	234	0.3%	26,474	1.8%	236	0.5%	110	0.4%
2040	121	0.5%	235	0.3%	26,952	1.8%	237	0.5%	110	0.4%
2041	121	0.3%	235	0.2%	27,434	1.8%	238	0.5%	110	0.4%
2042	121	0.3%	236	0.3%	27,928	1.8%	240	0.5%	111	0.3%
2043	122	0.4%	236	0.2%	28,420	1.8%	241	0.5%	111	0.3%

Table D-8: Economic and Demographic Assumptions Used in Load Forecasting (continued)

Variable	Chained Price Index for Gross Domestic Product		Resident Population - New Mexico Service Territory		Resident Population - Texas Service Territory		Average Price of West Texas Intermediate Crude		Industrial production--Oil and gas extraction	
Units	index 2012=100.0	Pct Chg	Thousands	Pct Chg	Thousands	Pct Chg	$ per barrel	Pct Chg	index 2012=100.0	Pct Chg
2023	132.37		271		566		82.28		121.56	
2024	135.97	2.7%	270	-0.1%	566	0.1%	79.64	-3.2%	126.86	4.4%
2025	138.99	2.2%	271	0.1%	567	0.1%	80.34	0.9%	130.91	3.2%
2026	142.08	2.2%	271	0.2%	567	0.0%	81.47	1.4%	134.80	3.0%
2027	145.35	2.3%	272	0.3%	567	0.1%	84.87	4.2%	136.29	1.1%
2028	148.69	2.3%	273	0.4%	568	0.2%	86.92	2.4%	136.33	0.0%
2029	152.08	2.3%	274	0.5%	570	0.2%	88.62	2.0%	133.56	-2.0%
2030	155.54	2.3%	276	0.5%	571	0.3%	90.55	2.2%	130.28	-2.5%
2031	159.14	2.3%	277	0.5%	573	0.3%	92.51	2.2%	127.70	-2.0%
2032	162.79	2.3%	278	0.4%	575	0.4%	94.47	2.1%	126.27	-1.1%
2033	166.53	2.3%	279	0.4%	577	0.3%	96.47	2.1%	124.24	-1.6%
2034	170.30	2.3%	280	0.3%	579	0.3%	98.32	1.9%	121.82	-2.0%
2035	174.01	2.2%	281	0.3%	580	0.3%	100.07	1.8%	119.24	-2.1%
2036	177.73	2.1%	282	0.2%	582	0.2%	101.70	1.6%	116.47	-2.3%
2037	181.49	2.1%	282	0.1%	583	0.2%	103.29	1.6%	113.48	-2.6%
2038	185.32	2.1%	282	0.1%	584	0.2%	104.86	1.5%	109.07	-3.9%
2039	189.18	2.1%	282	0.0%	584	0.1%	106.44	1.5%	104.21	-4.5%
2040	193.15	2.1%	282	0.0%	585	0.1%	108.17	1.6%	101.19	-2.9%
2041	197.18	2.1%	282	0.0%	586	0.1%	109.87	1.6%	98.72	-2.4%
2042	201.26	2.1%	282	0.0%	586	0.1%	111.62	1.6%	96.60	-2.1%
2043	205.40	2.1%	282	0.0%	587	0.1%	113.37	1.6%	93.48	-3.2%

Table D-9: Expected Capacity and Energy Impacts of Existing and Proposed Demand-Side Management Resources

	Existing Demand-Side Management Resources		Proposed Demand-Side Management Resources	
	Energy (GWh)	Capacity (MW)	Energy (GWh)	Capacity (MW)
2023	70	9	8	(1)
2024	140	18	16	(1)
2025	210	27	23	(1)
2026	280	36	30	(2)
2027	350	45	37	(2)
2028	421	54	45	(2)
2029	490	63	52	(3)
2030	560	72	59	(3)
2031	630	81	67	(3)
2032	701	90	74	(3)
2033	770	99	81	(4)
2034	840	108	88	(4)
2035	873	112	91	(3)
2036	898	116	98	(2)
2037	919	120	105	(1)
2038	942	124	112	0
2039	942	124	115	1
2040	944	124	116	1
2041	942	124	116	1
2042	942	124	116	1
2043	942	124	116	1

Table D-10: Actual and Forecasted Firm Peak Demand

	MW			Annual Growth			Compound Growth to/from 2022		
	Financial	Planning	Electrification	Financial	Planning	Electrification	Financial	Planning	Electrification
2012	5,145						-1.9%		
2013	5,082			-1.2%			-2.0%		
2014	4,847			-4.6%			-1.7%		
2015	4,654			-4.0%			-1.4%		
2016	4,806			3.3%			-2.1%		
2017	4,348			-9.5%			-0.6%		
2018	4,622			6.3%			-2.2%		
2019	4,269			-7.6%			-0.3%		
2020	3,748			-12.2%			6.2%		
2021	3,969			5.9%			6.5%		
2022	4,227			6.5%			0.0%		
2023	3,992	4,077	4,001	-5.6%	-3.6%	-5.3%	-5.6%	-3.6%	-5.3%
2024	4,375	4,559	4,444	9.6%	11.8%	11.1%	1.7%	3.9%	2.5%
2025	4,582	4,845	4,848	4.7%	6.3%	9.1%	2.7%	4.7%	4.7%
2026	4,568	4,925	5,141	-0.3%	1.7%	6.1%	2.0%	3.9%	5.0%
2027	4,648	5,033	5,543	1.7%	2.2%	7.8%	1.9%	3.6%	5.6%
2028	4,699	5,146	5,900	1.1%	2.2%	6.4%	1.8%	3.3%	5.7%
2029	4,734	5,242	6,202	0.8%	1.9%	5.1%	1.6%	3.1%	5.6%
2030	4,780	5,338	6,517	1.0%	1.8%	5.1%	1.5%	3.0%	5.6%

Table D-10: Actual and Forecasted Firm Peak Demand (continued)

	MW			Annual Growth			Compound Growth to/from 2022		
	Financial	Planning	Electrification	Financial	Planning	Electrification	Financial	Planning	Electrification
2031	4,835	5,425	6,836	1.2%	1.6%	4.9%	1.5%	2.8%	5.5%
2032	4,855	5,477	7,141	0.4%	1.0%	4.5%	1.4%	2.6%	5.4%
2033	4,888	5,548	7,420	0.7%	1.3%	3.9%	1.3%	2.5%	5.2%
2034	4,931	5,595	7,628	0.9%	0.9%	2.8%	1.3%	2.4%	5.0%
2035	4,983	5,703	7,846	1.1%	1.9%	2.9%	1.3%	2.3%	4.9%
2036	5,016	5,780	8,046	0.7%	1.4%	2.5%	1.2%	2.3%	4.7%
2037	5,052	5,833	8,060	0.7%	0.9%	0.2%	1.2%	2.2%	4.4%
2038	5,089	5,927	7,646	0.7%	1.6%	-5.1%	1.2%	2.1%	3.8%
2039	5,132	5,989	7,243	0.8%	1.0%	-5.3%	1.1%	2.1%	3.2%
2040	5,161	6,053	6,825	0.6%	1.1%	-5.8%	1.1%	2.0%	2.7%
2041	5,204	6,133	6,540	0.8%	1.3%	-4.2%	1.1%	2.0%	2.3%
2042	5,243	6,198	6,579	0.8%	1.1%	0.6%	1.1%	1.9%	2.2%
2043	5,294	6,325	6,630	1.0%	2.0%	0.8%	1.1%	1.9%	2.2%

Table D-11: Actual and Forecasted Annual Energy Sale

	GWh			Annual Growth			Compound Growth to/from 2022		
	Financial	**Planning**	**Electrification**	**Financial**	**Planning**	**Electrification**	**Financial**	**Planning**	**Electrification**
2012	26,614						-0.8%		
2013	27,443			3.1%			-1.2%		
2014	26,162			-4.7%			-0.8%		
2015	24,584			-6.0%			0.0%		
2016	24,678			0.4%			-0.1%		
2017	24,223			-1.8%			0.3%		
2018	25,433			5.0%			-0.9%		
2019	24,677			-3.0%			-0.2%		
2020	23,138			-6.2%			3.0%		
2021	23,045			-0.4%			6.5%		
2022	24,543			6.5%			0.0%		
2023	24,529	25,636	24,649	-0.1%	4.5%	0.4%	-0.1%	4.5%	0.4%
2024	27,036	28,941	26,604	10.2%	12.9%	7.9%	5.0%	8.6%	4.1%
2025	28,836	31,409	28,873	6.7%	8.5%	8.5%	5.5%	8.6%	5.6%
2026	29,102	32,143	30,561	0.9%	2.3%	5.8%	4.4%	7.0%	5.6%
2027	29,279	32,845	32,352	0.6%	2.2%	5.9%	3.6%	6.0%	5.7%
2028	29,767	33,717	34,428	1.7%	2.7%	6.4%	3.3%	5.4%	5.8%
2029	30,076	34,411	36,181	1.0%	2.1%	5.1%	2.9%	4.9%	5.7%
2030	30,410	35,088	37,969	1.1%	2.0%	4.9%	2.7%	4.6%	5.6%

Table D-11: Actual and Forecasted Annual Energy Sales (continued)

	GWh			Annual Growth			Compound Growth to/from 2022		
2031	30,671	35,706	39,642	0.9%	1.8%	4.4%	2.5%	4.3%	5.5%
2032	30,905	36,265	41,460	0.8%	1.6%	4.6%	2.3%	4.0%	5.4%
2033	31,186	36,834	43,112	0.9%	1.6%	4.0%	2.2%	3.8%	5.3%
2034	31,508	37,551	44,394	1.0%	1.9%	3.0%	2.1%	3.6%	5.1%
2035	31,792	38,181	45,598	0.9%	1.7%	2.7%	2.0%	3.5%	4.9%
2036	32,076	38,857	46,840	0.9%	1.8%	2.7%	1.9%	3.3%	4.7%
2037	32,374	39,418	47,089	0.9%	1.4%	0.5%	1.9%	3.2%	4.4%
2038	32,667	40,173	45,096	0.9%	1.9%	-4.2%	1.8%	3.1%	3.9%
2039	32,897	40,652	42,830	0.7%	1.2%	-5.0%	1.7%	3.0%	3.3%
2040	33,247	41,408	40,706	1.1%	1.9%	-5.0%	1.7%	2.9%	2.9%
2041	33,610	42,124	39,229	1.1%	1.7%	-3.6%	1.7%	2.9%	2.5%
2042	33,963	42,844	39,428	1.1%	1.7%	0.5%	1.6%	2.8%	2.4%
2043	34,281	43,605	39,747	0.9%	1.8%	0.8%	1.6%	2.8%	2.3%

Table D-12: Energy Sales Forecast Comparison (GWh)

	Actual Energy Sales	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2015	24,584					
2016	24,678					
2017	24,223					
2018	25,433					24,749
2019	24,677				25,041	23,984
2020	23,138			23,009	25,210	23,769
2021	23,045		23,086	23,934	25,811	23,566
2022	24,543	24,045	23,460	24,327	25,604	23,346
2023		25,058	23,504	24,583	25,490	23,299

Table D-13: Forecast Sales less Actual Sales (GWh)

	Actual less Forecast (GWh)					Percent Difference				
	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2018					683					2.8%
2019				(364)	693				-1.5%	2.9%
2020			128	(2,072)	(632)			0.6%	-8.2%	-2.7%
2021		(41)	(889)	(2,766)	(521)		-0.2%	-3.7%	-10.7%	-2.2%
2022	498	1,083	216	(1,061)	1,197	2.1%	4.6%	0.9%	-4.1%	5.1%

Table D-14: Firm Load Obligation Coincident Peak Demand Forecast Comparison (MW)

	Actual Peak Demand	Interrupted Load at Peak	Available Interrupt Load 2022 Forecast	Available Interrupt Load 2021 Forecast	Available Interrupt Load 2020 Forecast	Available Interrupt Load 2019 Forecast	Available Interrupt Load 2018 Forecast	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2015	4,684	0										
2016	4,836	0										
2017	4,374	0										
2018	4,648	0					32					4,423
2019	4,297	0				34	32				4,138	3,978
2020	4,124	0			28	26	32			4,008	4,161	4,023
2021	3,997	0		28	28	26	32		3,995	4,046	4,228	3,979
2022	4,255	0	28	28	28	26	32	3,959	3,938	4,013	4,110	3,879
2023			28	28	27	26	32	3,928	3,843	4,067	4,136	3,887

Table D-15: Firm Load Obligation Actual Peak Demand less Firm Load Obligation Forecast Peak Demand (MW)

	Actual less Forecast (MW)					Percent Difference				
	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2018					193					4.4%
2019				125	286				3.0%	7.2%
2020			88	(63)	69			2.2%	-1.5%	1.7%
2021		(26)	(77)	(257)	(14)		-0.6%	-1.9%	-6.1%	-0.4%
2022	268	289	215	119	343	6.8%	7.3%	5.3%	2.9%	8.9%

Table D-16: Weather Normalized Firm Load Obligation Coincident Peak Demand Forecast Comparison (MW)

	Actual Peak Demand	Interrupted Load at Peak	Available Interrupt Load 2022 Forecast	Available Interrupt Load 2021 Forecast	Available Interrupt Load 2020 Forecast	Available Interrupt Load 2019 Forecast	Available Interrupt Load 2018 Forecast	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2015	4,971	0										
2016	4,889	0										
2017	4,830	0										
2018	4,753	0					32					4,423
2019	4,314	0				34	32				4,138	3,978
2020	4,511	0			28	26	32			4,008	4,161	4,023
2021	4,150	0		28	28	26	32		3,995	4,046	4,228	3,979
2022	3,868	0	28	28	28	26	32	3,959	3,938	4,013	4,110	3,879
2023			28	28	27	26	32	3,928	3,843	4,067	4,136	3,887

Table D-17: Weather Normal Firm Load Obligation Peak Demand Less Firm Load Obligation Forecast Peak

	Actual less Forecast (MW)					**Percent Difference**				
	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer	2022 Forecast Summer	2021 Forecast Summer	2020 Forecast Summer	2019 Forecast Summer	2018 Forecast Summer
2018					297					6.7%
2019				142	303				3.4%	7.6%
2020			474	324	455			11.8%	7.8%	11.3%
2021		127	76	(104)	139		3.2%	1.9%	-2.5%	3.5%
2022	(119)	(97)	(172)	(267)	(43)	-3.0%	-2.5%	-4.3%	-6.5%	-1.1%

Table D-18: Actual and Forecast Firm Peak Demand Comparison to Prior IRP

	MW		
	Actual	2023 Planning Forecast	2021 High Case (Planning)
2012	5,145		
2013	5,082		
2014	4,847		
2015	4,654		
2016	4,806		
2017	4,348		
2018	4,622		
2019	4,269		
2020	3,748		
2021	3,969		4,141
2022	4,227		4,133
2023		4,077	4,115
2024		4,559	4,207
2025		4,845	4,269
2026		4,925	4,240
2027		5,033	4,333
2028		5,146	4,403
2029		5,242	4,464
2030		5,338	4,522
2031		5,425	4,565
2032		5,477	4,652
2033		5,548	4,706
2034		5,595	4,767
2035		5,703	4,799
2036		5,780	4,890
2037		5,833	4,952
2038		5,927	4,987
2039		5,989	5,066
2040		6,053	5,125
2041		6,133	5,182
2042		6,198	
2043		6,325	

Table D-19: Actual and Forecasted Annual Energy Sales Comparison to Prior IRP

	GWh		
	Financial	2023 Planning Forecast	2021 High Case (Planning)
2012	26,614		
2013	27,443		
2014	26,162		
2015	24,584		
2016	24,678		
2017	24,223		
2018	25,433		
2019	24,677		
2020	23,138		
2021	23,045		24,408
2022	24,543		25,451
2023		25,636	25,878
2024		28,941	26,452
2025		31,409	27,108
2026		32,143	27,282
2027		32,845	27,519
2028		33,717	27,996
2029		34,411	28,470
2030		35,088	28,929
2031		35,706	29,371
2032		36,265	29,807
2033		36,834	30,342
2034		37,551	30,882
2035		38,181	31,400
2036		38,857	31,885
2037		39,418	32,503
2038		40,173	32,996
2039		40,652	33,556
2040		41,408	34,137
2041		42,124	34,697
2042		42,844	
2043		43,605	

Appendix F

Hourly Load Profiles

Southwestern Public Service Company
Hourly Load Profiles

This section contains typical day load patterns on a system-wide basis for each customer class provided for peak day, average day and representative off-peak days for each calendar month.

The following monthly class load shapes are developed from company load research data for the year 2022. The following statistics were used for each requirement:

REQUIREMENT	STATISTIC
Peak Day	System Peak Day
Average Day	Average Weekday Excluding Holidays
Representative Off-Peak Day	Average Weekends and Holidays

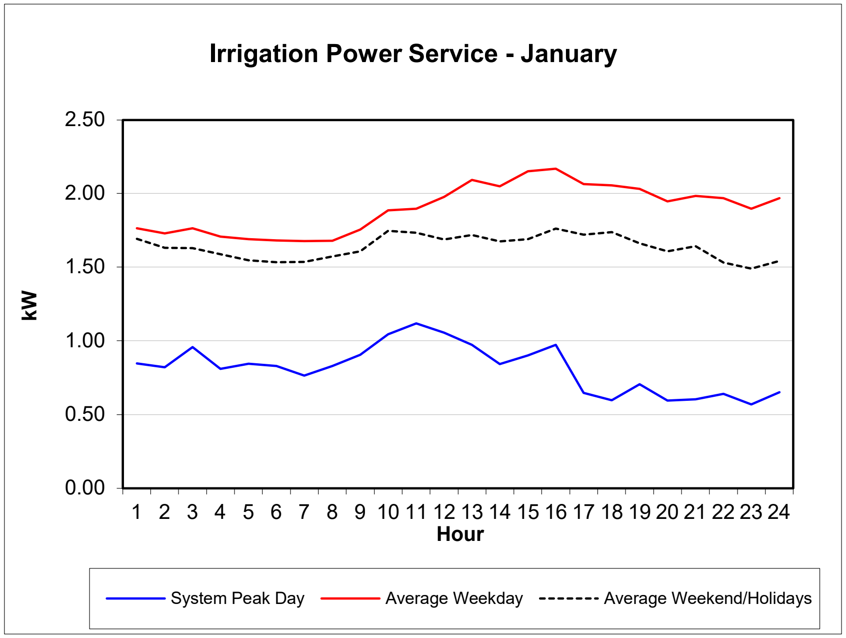
The following pages contain tables and graphs for each of the load patterns described above.

Irrigation Power Service	Tables E-1.1 – E-1.12
Residential Heating Service	Tables E-2.1 – E-2.12
Small Municipal and School	Tables E-3.1 – E-3.12
Primary General Service	Tables E-4.1 – E-4.12
Large Municipal and School	Tables E-5.1 – E-5.12
Small General Service	Tables E-6.1 – E-6.12
Sub-Transmission Service	Tables E-7.1 – E-7.12
Backbone Transmission Service	Tables E-8.1 – E-8.12
Secondary General Service	Tables E-9.1 – E-9.12
Residential Regular	Tables E-10.1 – E-10.12

Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.1

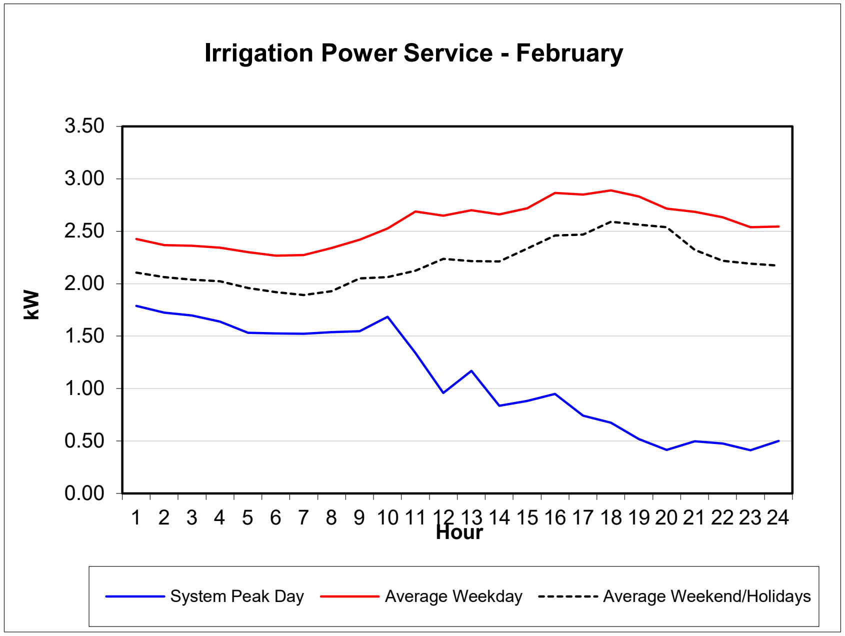
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8458	1.7646	1.6912
2	0.8205	1.7288	1.6323
3	0.9580	1.7633	1.6286
4	0.8108	1.7079	1.5877
5	0.8445	1.6908	1.5459
6	0.8283	1.6813	1.5332
7	0.7642	1.6781	1.5350
8	0.8293	1.6797	1.5735
9	0.9048	1.7555	1.6068
10	1.0455	1.8850	1.7455
11	1.1185	1.8958	1.7330
12	1.0556	1.9772	1.6879
13	0.9723	2.0919	1.7191
14	0.8426	2.0483	1.6754
15	0.9000	2.1501	1.6898
16	0.9729	2.1691	1.7632
17	0.6461	2.0642	1.7207
18	0.5965	2.0561	1.7387
19	0.7049	2.0305	1.6611
20	0.5940	1.9458	1.6079
21	0.6028	1.9843	1.6417
22	0.6406	1.9692	1.5312
23	0.5680	1.8955	1.4900
24	0.6506	1.9692	1.5425



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.2

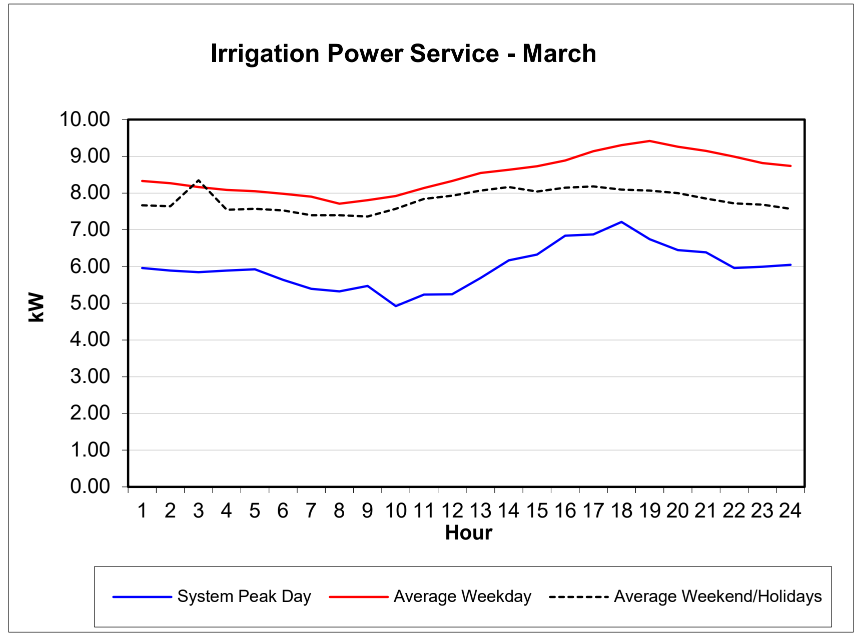
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.7884	2.4261	2.1041
2	1.7227	2.3670	2.0636
3	1.6959	2.3627	2.0370
4	1.6400	2.3438	2.0237
5	1.5318	2.3011	1.9598
6	1.5269	2.2663	1.9204
7	1.5226	2.2722	1.8913
8	1.5395	2.3395	1.9270
9	1.5483	2.4191	2.0490
10	1.6850	2.5257	2.0621
11	1.3413	2.6869	2.1233
12	0.9580	2.6475	2.2351
13	1.1701	2.6986	2.2157
14	0.8353	2.6603	2.2121
15	0.8811	2.7188	2.3325
16	0.9512	2.8647	2.4582
17	0.7424	2.8479	2.4693
18	0.6764	2.8875	2.5896
19	0.5204	2.8300	2.5638
20	0.4161	2.7156	2.5382
21	0.4983	2.6851	2.3227
22	0.4757	2.6327	2.2191
23	0.4144	2.5385	2.1912
24	0.5020	2.5458	2.1721



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.3

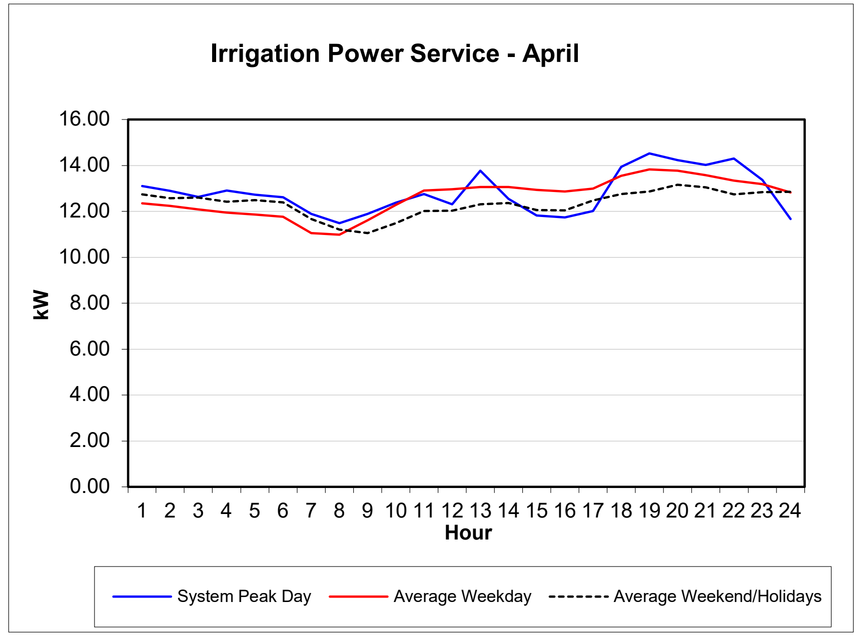
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	5.9551	8.3262	7.6651
2	5.8848	8.2634	7.6422
3	5.8424	8.1664	8.3447
4	5.8893	8.0834	7.5478
5	5.9224	8.0500	7.5725
6	5.6368	7.9779	7.5219
7	5.3890	7.9046	7.3965
8	5.3182	7.7053	7.3962
9	5.4728	7.8032	7.3600
10	4.9198	7.9145	7.5717
11	5.2347	8.1346	7.8398
12	5.2477	8.3290	7.9250
13	5.6874	8.5448	8.0626
14	6.1711	8.6314	8.1651
15	6.3264	8.7323	8.0411
16	6.8418	8.8841	8.1423
17	6.8696	9.1360	8.1791
18	7.2097	9.3053	8.0915
19	6.7387	9.4172	8.0658
20	6.4451	9.2569	7.9979
21	6.3857	9.1496	7.8527
22	5.9544	8.9905	7.7218
23	5.9931	8.8135	7.6872
24	6.0489	8.7379	7.5707



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.4

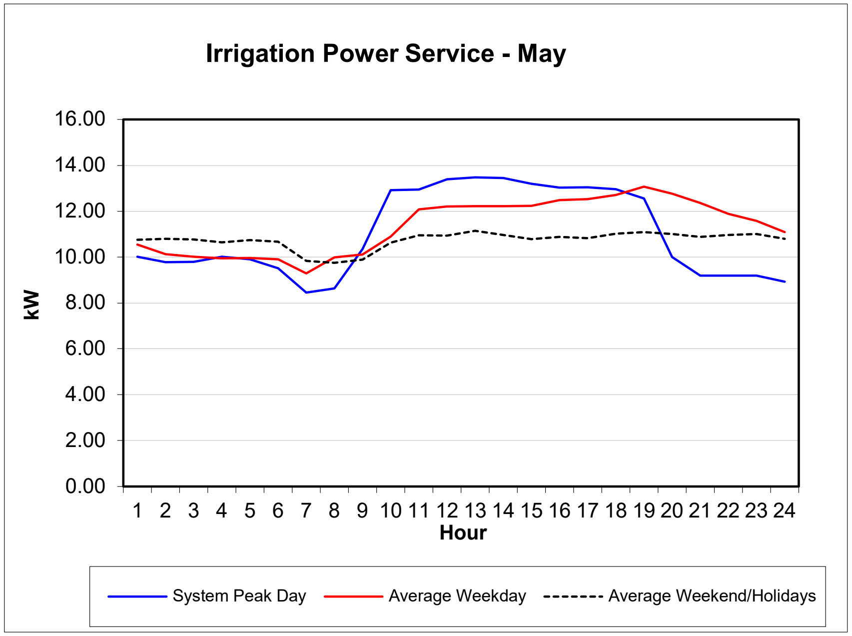
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13.0965	12.3449	12.7464
2	12.8894	12.2321	12.5667
3	12.6214	12.0878	12.6002
4	12.9027	11.9451	12.4246
5	12.7256	11.8548	12.4865
6	12.6112	11.7599	12.3975
7	11.8896	11.0503	11.6630
8	11.4825	10.9778	11.2070
9	11.8953	11.6137	11.0487
10	12.3722	12.2739	11.4849
11	12.7600	12.9027	12.0115
12	12.3006	12.9687	12.0318
13	13.7720	13.0596	12.3122
14	12.5462	13.0607	12.3673
15	11.8196	12.9357	12.0584
16	11.7367	12.8624	12.0378
17	12.0183	12.9884	12.4808
18	13.9344	13.5473	12.7517
19	14.5188	13.8256	12.8634
20	14.2277	13.7706	13.1509
21	14.0228	13.5765	13.0503
22	14.2938	13.3382	12.7417
23	13.3689	13.1823	12.8433
24	11.6698	12.8282	12.8536



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.5

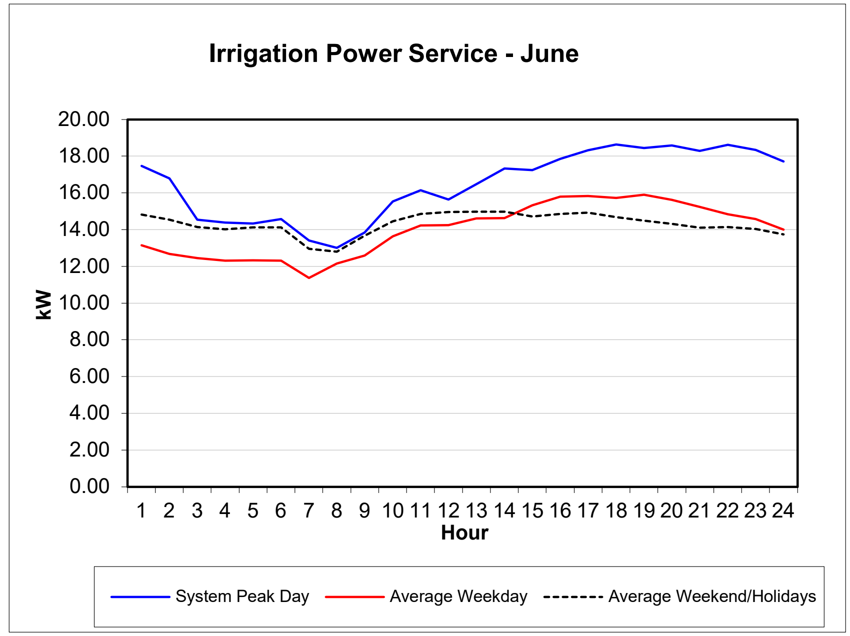
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	10.0206	10.5465	10.7545
2	9.7848	10.1379	10.7991
3	9.8033	10.0137	10.7712
4	10.0258	9.9526	10.6436
5	9.9138	9.9694	10.7497
6	9.5245	9.9106	10.6756
7	8.4481	9.2906	9.8385
8	8.6369	9.9932	9.7525
9	10.3498	10.1227	9.8963
10	12.9246	10.8942	10.6291
11	12.9428	12.0832	10.9511
12	13.3973	12.2073	10.9377
13	13.4731	12.2158	11.1361
14	13.4538	12.2289	10.9724
15	13.1992	12.2409	10.7885
16	13.0320	12.4922	10.8817
17	13.0390	12.5237	10.8273
18	12.9615	12.7171	11.0292
19	12.5538	13.0681	11.0992
20	10.0071	12.7613	11.0062
21	9.2040	12.3680	10.8901
22	9.2014	11.8841	10.9746
23	9.2014	11.5774	11.0129
24	8.9384	11.0894	10.8007



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.6

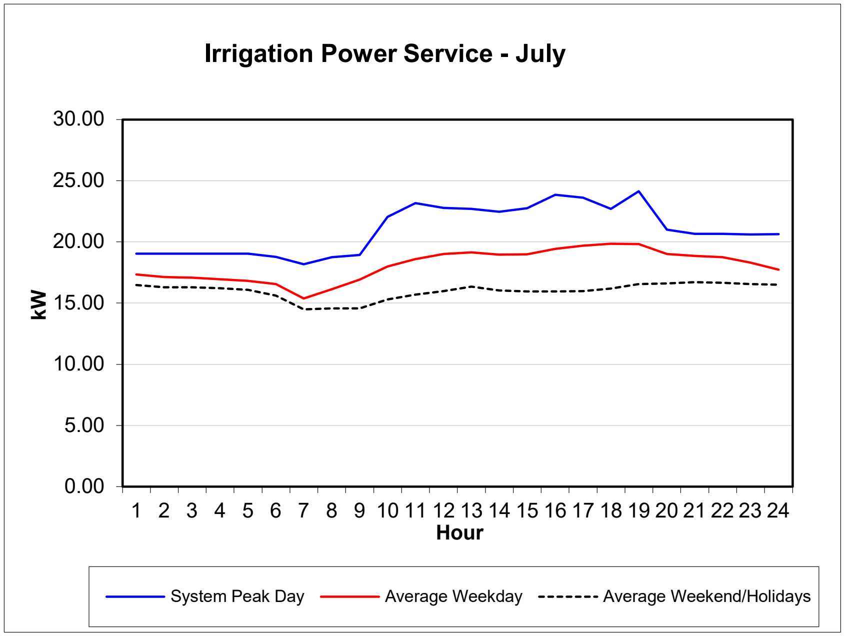
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.4680	13.1491	14.8170
2	16.7868	12.6700	14.5439
3	14.5415	12.4418	14.1405
4	14.3894	12.3072	14.0193
5	14.3226	12.3182	14.1178
6	14.5749	12.3033	14.1199
7	13.3985	11.3753	12.9569
8	13.0190	12.1473	12.8086
9	13.8351	12.5879	13.6601
10	15.5304	13.6382	14.4475
11	16.1395	14.2314	14.8595
12	15.6291	14.2373	14.9528
13	16.4722	14.6146	14.9812
14	17.3198	14.6259	14.9707
15	17.2380	15.3312	14.7063
16	17.8446	15.7924	14.8601
17	18.3164	15.8235	14.9170
18	18.6459	15.7239	14.6800
19	18.4461	15.8977	14.4936
20	18.5850	15.6109	14.3158
21	18.2767	15.2280	14.1016
22	18.6083	14.8410	14.1383
23	18.3389	14.5752	14.0359
24	17.7141	14.0071	13.7338



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.7

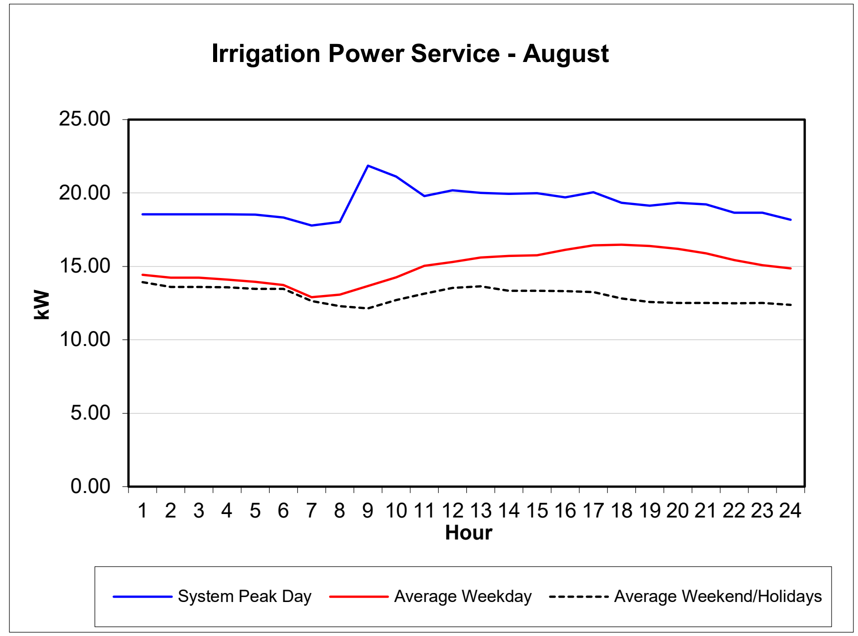
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	19.0317	17.3445	16.4684
2	19.0431	17.1143	16.2849
3	19.0402	17.0717	16.2837
4	19.0326	16.9480	16.2022
5	19.0425	16.8227	16.0866
6	18.7636	16.5570	15.6033
7	18.1747	15.3905	14.4884
8	18.7473	16.1201	14.5619
9	18.9404	16.9233	14.5740
10	22.0350	17.9773	15.2887
11	23.1498	18.5940	15.6953
12	22.7624	19.0042	15.9750
13	22.6819	19.1341	16.3505
14	22.4506	18.9454	16.0321
15	22.7476	18.9813	15.9528
16	23.8318	19.4244	15.9496
17	23.6139	19.6835	15.9647
18	22.6929	19.8467	16.1783
19	24.1216	19.8169	16.5571
20	20.9825	19.0148	16.6034
21	20.6611	18.8535	16.6995
22	20.6613	18.7387	16.6553
23	20.6067	18.2973	16.5519
24	20.6153	17.7305	16.4914



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.8

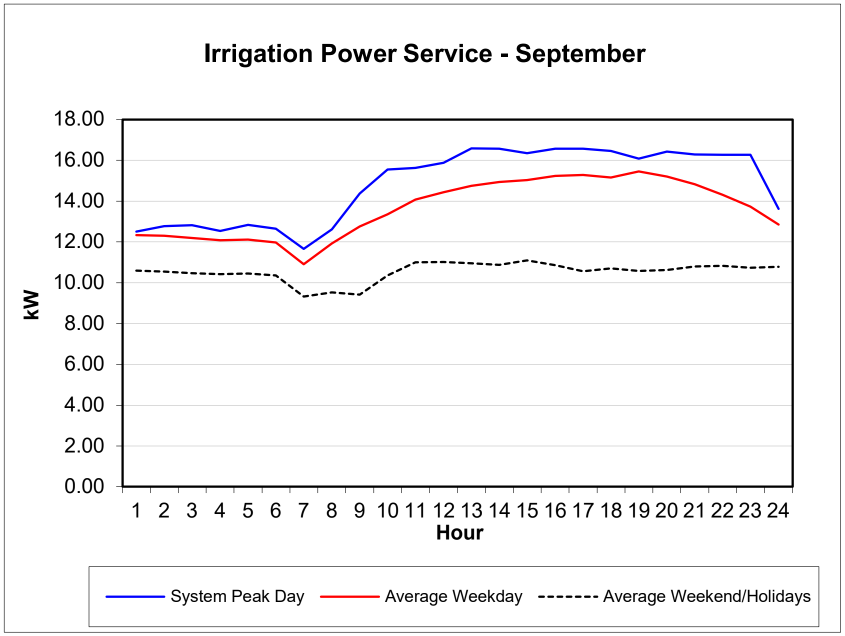
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	18.5379	14.4279	13.9240
2	18.5446	14.2246	13.6048
3	18.5485	14.2208	13.5919
4	18.5484	14.1038	13.5699
5	18.5280	13.9513	13.4714
6	18.3359	13.7365	13.4693
7	17.7789	12.8943	12.6358
8	18.0138	13.0751	12.3004
9	21.8628	13.6566	12.1343
10	21.1098	14.2562	12.6993
11	19.7783	15.0264	13.1403
12	20.1690	15.2938	13.5251
13	20.0046	15.6037	13.6349
14	19.9421	15.7113	13.3339
15	19.9775	15.7460	13.3431
16	19.6964	16.1177	13.3074
17	20.0428	16.4305	13.2463
18	19.3366	16.4671	12.8250
19	19.1290	16.3861	12.5847
20	19.3270	16.1819	12.5110
21	19.2163	15.8959	12.5097
22	18.6421	15.4300	12.4815
23	18.6459	15.0890	12.5063
24	18.1635	14.8529	12.3848



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.9

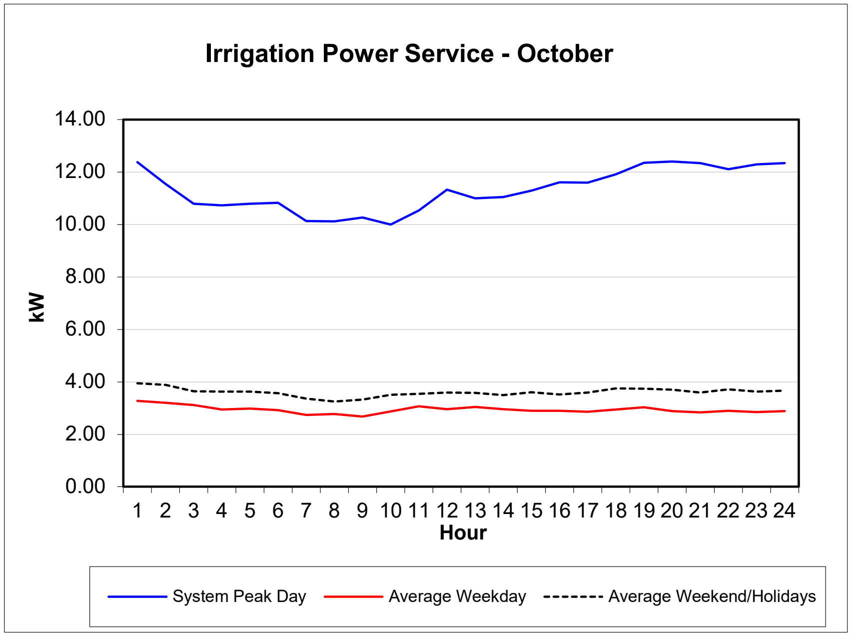
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	12.5012	12.3321	10.5987
2	12.7744	12.3023	10.5546
3	12.8177	12.1879	10.4657
4	12.5424	12.0864	10.4275
5	12.8296	12.1078	10.4469
6	12.6480	11.9817	10.3567
7	11.6650	10.9073	9.3249
8	12.6194	11.9255	9.5251
9	14.3721	12.7549	9.4147
10	15.5458	13.3611	10.3642
11	15.6208	14.0785	10.9962
12	15.8745	14.4357	11.0152
13	16.5861	14.7443	10.9487
14	16.5709	14.9452	10.8751
15	16.3464	15.0312	11.0976
16	16.5674	15.2325	10.8640
17	16.5758	15.2771	10.5617
18	16.4509	15.1605	10.6982
19	16.0896	15.4555	10.5777
20	16.4304	15.2098	10.6307
21	16.2847	14.8314	10.8005
22	16.2706	14.3158	10.8305
23	16.2673	13.7276	10.7398
24	13.6247	12.8560	10.7892



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.10

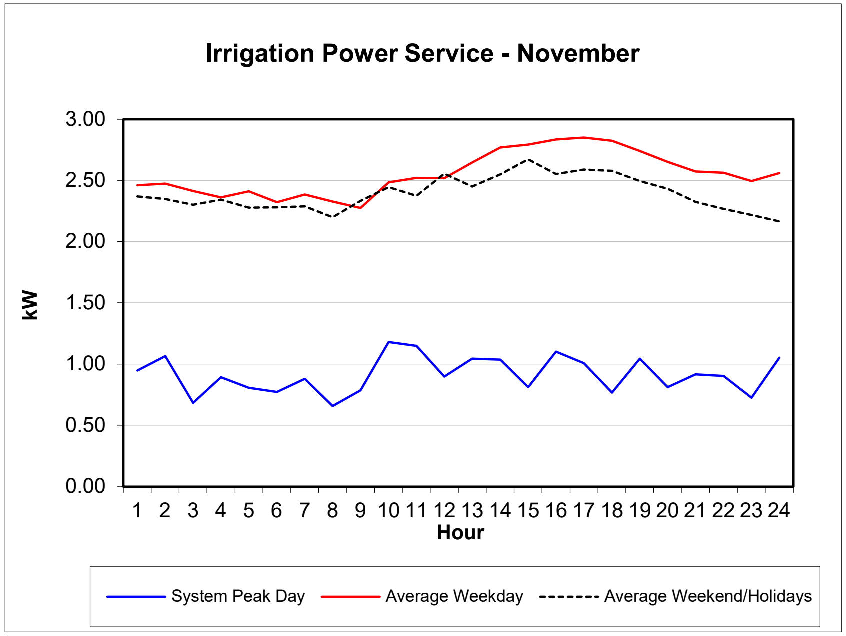
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	12.3789	3.2684	3.9392
2	11.5508	3.2018	3.8916
3	10.7925	3.1240	3.6380
4	10.7314	2.9506	3.6259
5	10.7928	2.9870	3.6369
6	10.8260	2.9261	3.5671
7	10.1300	2.7425	3.3602
8	10.1226	2.7837	3.2475
9	10.2607	2.6711	3.3243
10	9.9948	2.8808	3.5158
11	10.5328	3.0751	3.5493
12	11.3291	2.9565	3.5981
13	10.9930	3.0440	3.5777
14	11.0432	2.9639	3.5034
15	11.2945	2.8967	3.6083
16	11.6029	2.9012	3.5204
17	11.5964	2.8629	3.5942
18	11.9170	2.9501	3.7557
19	12.3539	3.0284	3.7461
20	12.3967	2.8822	3.7012
21	12.3427	2.8425	3.5956
22	12.1056	2.8944	3.7144
23	12.2857	2.8526	3.6287
24	12.3375	2.8898	3.6707



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.11

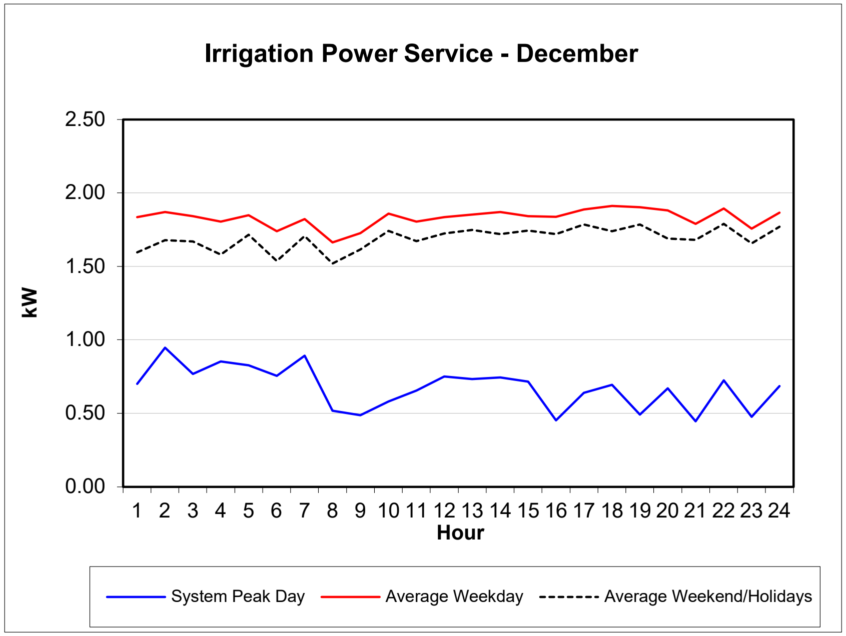
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.9464	2.4590	2.3695
2	1.0657	2.4744	2.3481
3	0.6827	2.4128	2.3008
4	0.8929	2.3611	2.3422
5	0.8069	2.4105	2.2761
6	0.7721	2.3222	2.2798
7	0.8785	2.3832	2.2878
8	0.6580	2.3281	2.1991
9	0.7837	2.2746	2.3317
10	1.1814	2.4839	2.4433
11	1.1491	2.5205	2.3750
12	0.8978	2.5172	2.5534
13	1.0433	2.6459	2.4498
14	1.0347	2.7687	2.5485
15	0.8099	2.7924	2.6740
16	1.1022	2.8350	2.5527
17	1.0075	2.8517	2.5886
18	0.7679	2.8225	2.5767
19	1.0447	2.7408	2.4945
20	0.8108	2.6511	2.4318
21	0.9160	2.5730	2.3251
22	0.9038	2.5622	2.2671
23	0.7240	2.4951	2.2158
24	1.0521	2.5591	2.1661



Southwestern Public Service Company
Hourly Load Profiles

Table E - 1.12

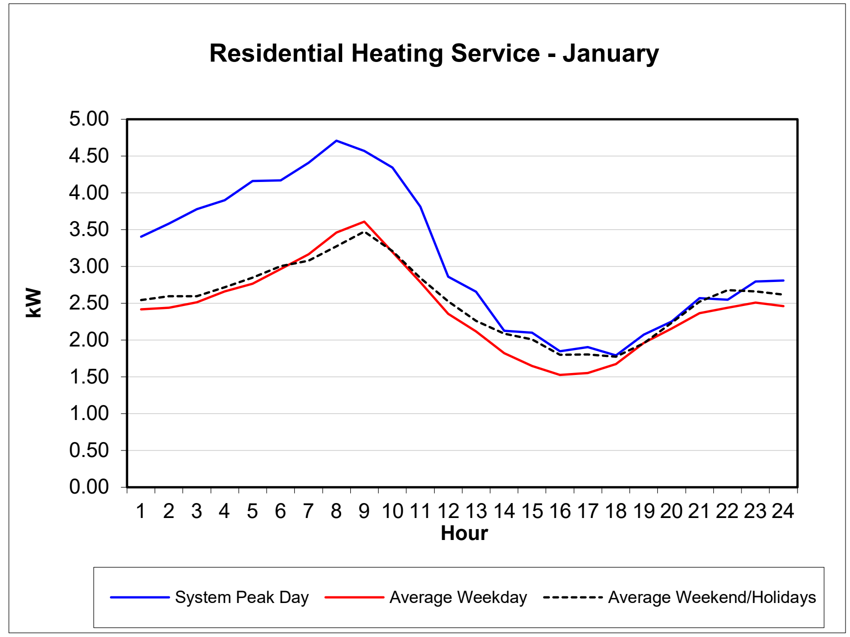
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.7009	1.8342	1.5947
2	0.9461	1.8708	1.6789
3	0.7680	1.8422	1.6688
4	0.8528	1.8042	1.5810
5	0.8260	1.8483	1.7158
6	0.7558	1.7401	1.5355
7	0.8908	1.8228	1.7053
8	0.5164	1.6635	1.5205
9	0.4865	1.7264	1.6153
10	0.5803	1.8587	1.7421
11	0.6550	1.8050	1.6725
12	0.7493	1.8338	1.7244
13	0.7338	1.8525	1.7476
14	0.7435	1.8690	1.7186
15	0.7149	1.8407	1.7440
16	0.4514	1.8371	1.7202
17	0.6382	1.8865	1.7855
18	0.6942	1.9114	1.7387
19	0.4901	1.9017	1.7843
20	0.6701	1.8797	1.6885
21	0.4466	1.7881	1.6799
22	0.7244	1.8937	1.7907
23	0.4757	1.7566	1.6571
24	0.6846	1.8657	1.7698



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.1

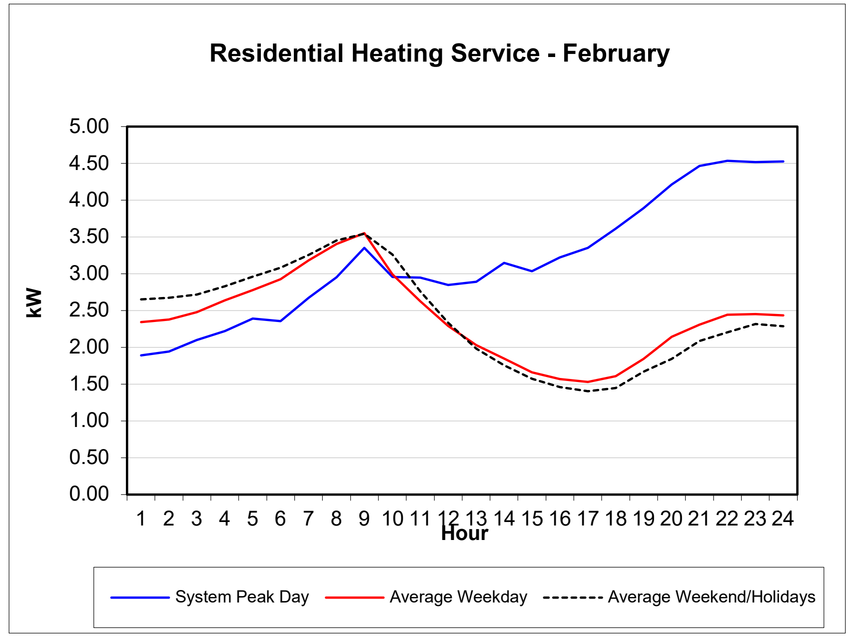
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3.4035	2.4171	2.5441
2	3.5828	2.4382	2.5975
3	3.7790	2.5134	2.5946
4	3.9005	2.6620	2.7195
5	4.1630	2.7650	2.8488
6	4.1708	2.9653	3.0050
7	4.4107	3.1644	3.0805
8	4.7110	3.4630	3.2737
9	4.5708	3.6091	3.4745
10	4.3432	3.1943	3.2082
11	3.8116	2.7856	2.8457
12	2.8611	2.3579	2.5279
13	2.6555	2.1179	2.2623
14	2.1271	1.8225	2.0885
15	2.0993	1.6476	2.0094
16	1.8468	1.5269	1.8015
17	1.9024	1.5524	1.8042
18	1.7906	1.6723	1.7741
19	2.0718	1.9604	1.9585
20	2.2530	2.1557	2.2344
21	2.5716	2.3637	2.5234
22	2.5458	2.4409	2.6798
23	2.7947	2.5074	2.6595
24	2.8100	2.4607	2.6159



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.2

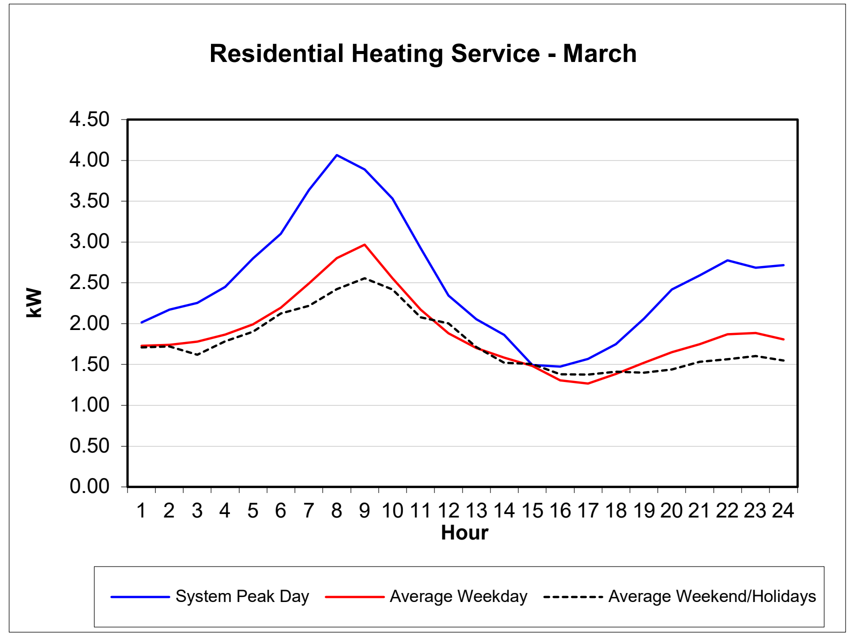
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.8883	2.3410	2.6527
2	1.9446	2.3775	2.6750
3	2.0993	2.4764	2.7175
4	2.2222	2.6383	2.8290
5	2.3922	2.7797	2.9587
6	2.3542	2.9261	3.0806
7	2.6753	3.1819	3.2559
8	2.9512	3.4053	3.4539
9	3.3514	3.5495	3.5409
10	2.9541	2.9911	3.2619
11	2.9457	2.6273	2.7618
12	2.8481	2.2890	2.3324
13	2.8908	2.0279	1.9800
14	3.1470	1.8454	1.7576
15	3.0338	1.6614	1.5717
16	3.2230	1.5683	1.4603
17	3.3510	1.5299	1.4048
18	3.6122	1.6078	1.4465
19	3.8920	1.8414	1.6705
20	4.2121	2.1410	1.8446
21	4.4645	2.3063	2.0872
22	4.5364	2.4420	2.2056
23	4.5188	2.4520	2.3158
24	4.5268	2.4356	2.2851



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.3

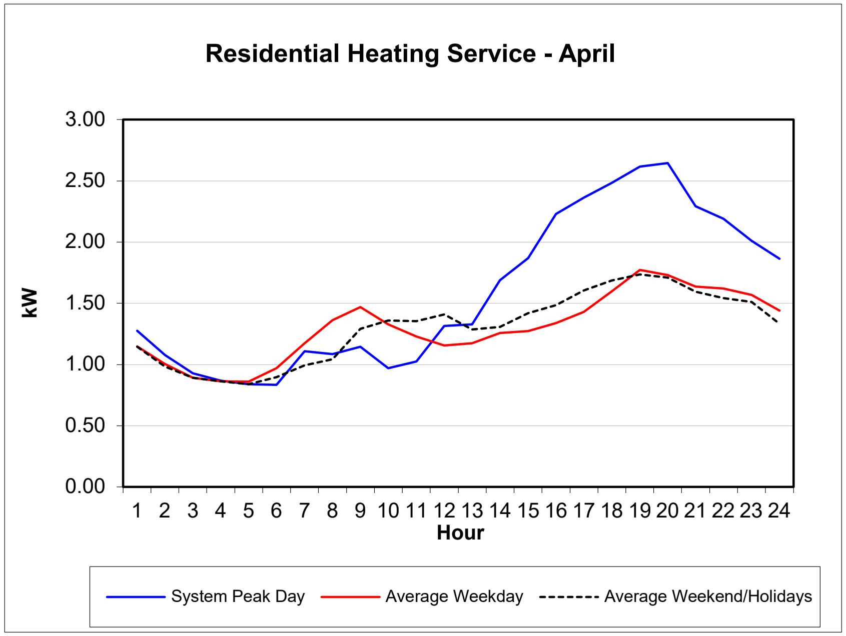
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.0142	1.7306	1.7083
2	2.1732	1.7421	1.7220
3	2.2562	1.7785	1.6204
4	2.4486	1.8661	1.7823
5	2.8008	1.9911	1.9007
6	3.1010	2.1970	2.1250
7	3.6376	2.4940	2.2195
8	4.0633	2.8033	2.4246
9	3.8891	2.9673	2.5569
10	3.5338	2.5581	2.4197
11	2.9235	2.1722	2.0791
12	2.3464	1.8821	2.0023
13	2.0553	1.7023	1.7150
14	1.8609	1.5850	1.5208
15	1.4927	1.4820	1.5061
16	1.4741	1.3043	1.3815
17	1.5702	1.2636	1.3752
18	1.7483	1.3841	1.4108
19	2.0631	1.5199	1.4014
20	2.4204	1.6506	1.4404
21	2.5921	1.7470	1.5342
22	2.7759	1.8716	1.5638
23	2.6854	1.8845	1.6041
24	2.7158	1.8059	1.5489



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.4

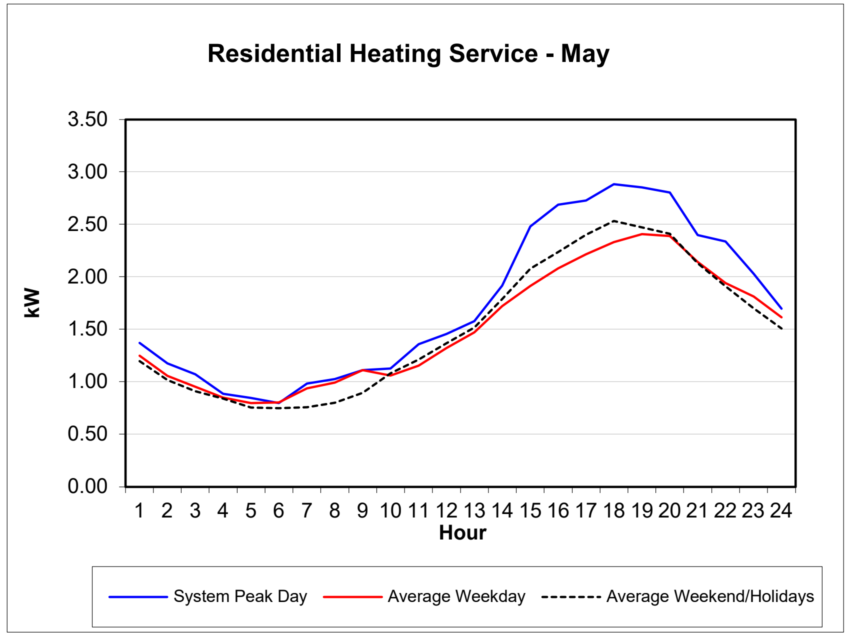
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.2767	1.1485	1.1445
2	1.0779	1.0054	0.9824
3	0.9271	0.8913	0.8923
4	0.8679	0.8631	0.8623
5	0.8400	0.8605	0.8373
6	0.8329	0.9694	0.8981
7	1.1099	1.1728	0.9938
8	1.0862	1.3619	1.0425
9	1.1450	1.4697	1.2912
10	0.9710	1.3286	1.3585
11	1.0262	1.2286	1.3531
12	1.3143	1.1545	1.4085
13	1.3279	1.1737	1.2873
14	1.6895	1.2576	1.3068
15	1.8686	1.2731	1.4201
16	2.2292	1.3383	1.4860
17	2.3630	1.4295	1.6061
18	2.4830	1.5970	1.6851
19	2.6158	1.7704	1.7351
20	2.6440	1.7313	1.7102
21	2.2923	1.6370	1.5940
22	2.1898	1.6215	1.5414
23	2.0115	1.5688	1.5115
24	1.8637	1.4418	1.3338



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.5

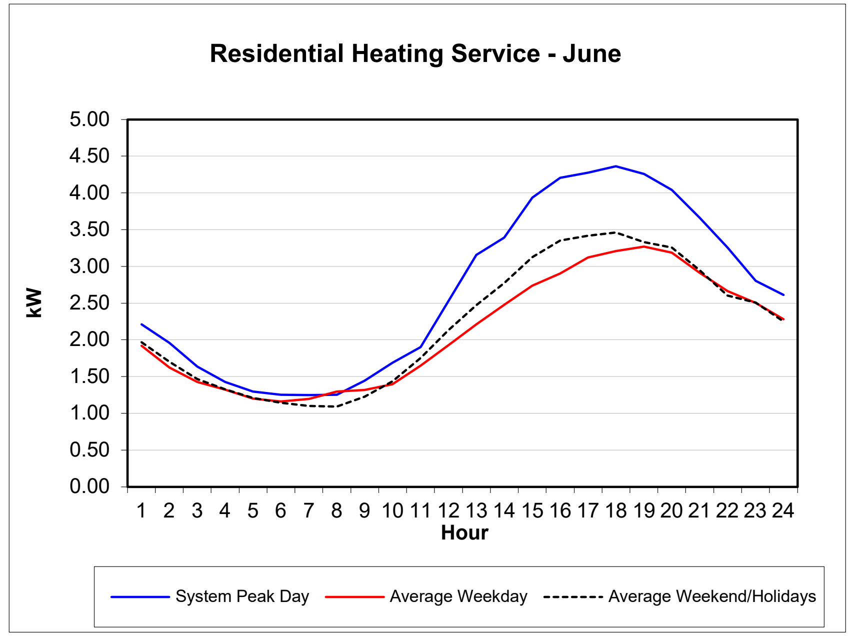
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.3690	1.2494	1.1968
2	1.1762	1.0577	1.0160
3	1.0724	0.9514	0.9110
4	0.8854	0.8480	0.8404
5	0.8449	0.7989	0.7557
6	0.7995	0.8019	0.7486
7	0.9840	0.9363	0.7580
8	1.0253	0.9908	0.8013
9	1.1115	1.1114	0.8946
10	1.1277	1.0587	1.0820
11	1.3571	1.1530	1.2118
12	1.4560	1.3223	1.3673
13	1.5778	1.4720	1.5163
14	1.9156	1.7213	1.7872
15	2.4786	1.9118	2.0769
16	2.6866	2.0811	2.2349
17	2.7280	2.2151	2.3997
18	2.8830	2.3297	2.5318
19	2.8506	2.4089	2.4717
20	2.8026	2.3875	2.4100
21	2.3971	2.1421	2.1295
22	2.3371	1.9413	1.9093
23	2.0302	1.8110	1.6991
24	1.6963	1.6141	1.5071



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.6

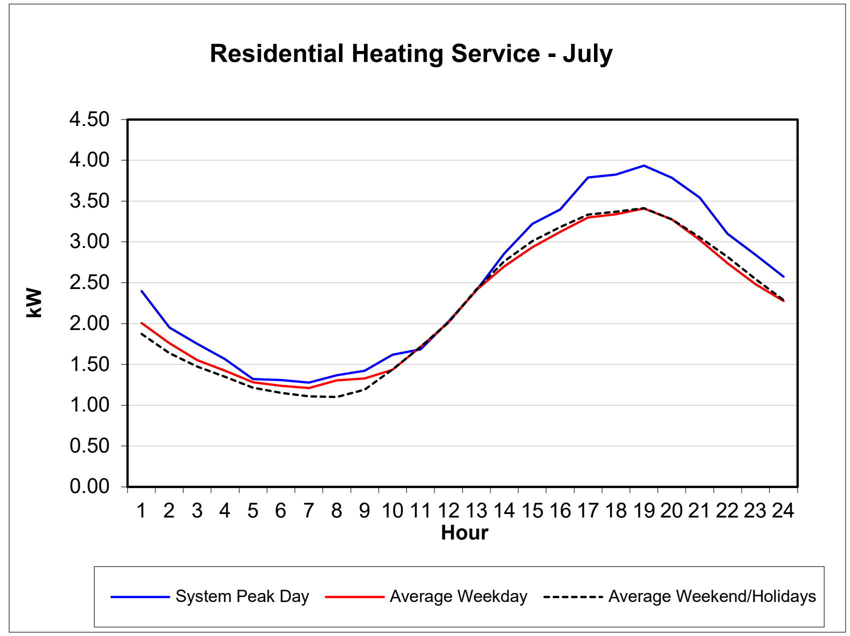
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.2120	1.9173	1.9650
2	1.9604	1.6214	1.6992
3	1.6363	1.4281	1.4642
4	1.4270	1.3213	1.3262
5	1.2949	1.2017	1.2103
6	1.2523	1.1630	1.1458
7	1.2497	1.1955	1.0986
8	1.2523	1.2953	1.0909
9	1.4460	1.3181	1.2275
10	1.6902	1.3975	1.4343
11	1.8997	1.6509	1.7528
12	2.5296	1.9280	2.1311
13	3.1567	2.2105	2.4732
14	3.3908	2.4759	2.7739
15	3.9371	2.7365	3.1239
16	4.2079	2.9045	3.3539
17	4.2752	3.1195	3.4183
18	4.3645	3.2090	3.4626
19	4.2570	3.2717	3.3295
20	4.0396	3.1877	3.2554
21	3.6595	2.9125	2.9460
22	3.2565	2.6632	2.6044
23	2.8011	2.5014	2.5051
24	2.6124	2.2802	2.2490



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.7

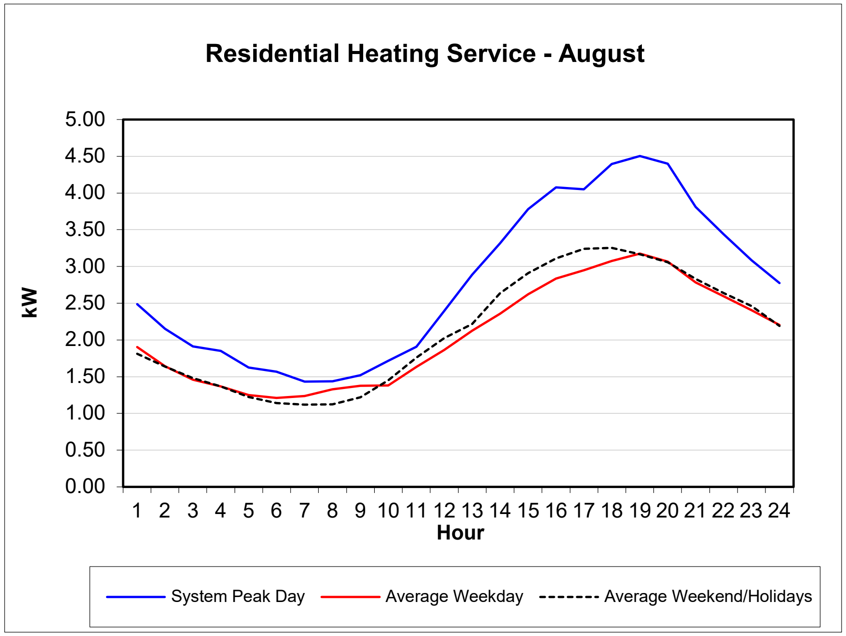
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.3965	2.0073	1.8726
2	1.9506	1.7577	1.6396
3	1.7526	1.5500	1.4718
4	1.5632	1.4208	1.3483
5	1.3190	1.2827	1.2135
6	1.3090	1.2389	1.1525
7	1.2788	1.2117	1.1095
8	1.3687	1.3053	1.0990
9	1.4229	1.3276	1.1923
10	1.6164	1.4354	1.4378
11	1.6837	1.7174	1.7169
12	2.0250	2.0153	2.0140
13	2.4062	2.4103	2.4172
14	2.8572	2.7005	2.7645
15	3.2208	2.9368	3.0093
16	3.3970	3.1230	3.1834
17	3.7894	3.3000	3.3356
18	3.8255	3.3374	3.3685
19	3.9354	3.4082	3.4124
20	3.7870	3.2775	3.2776
21	3.5442	3.0249	3.0568
22	3.0988	2.7386	2.8188
23	2.8427	2.4817	2.5433
24	2.5760	2.2762	2.2890



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.8

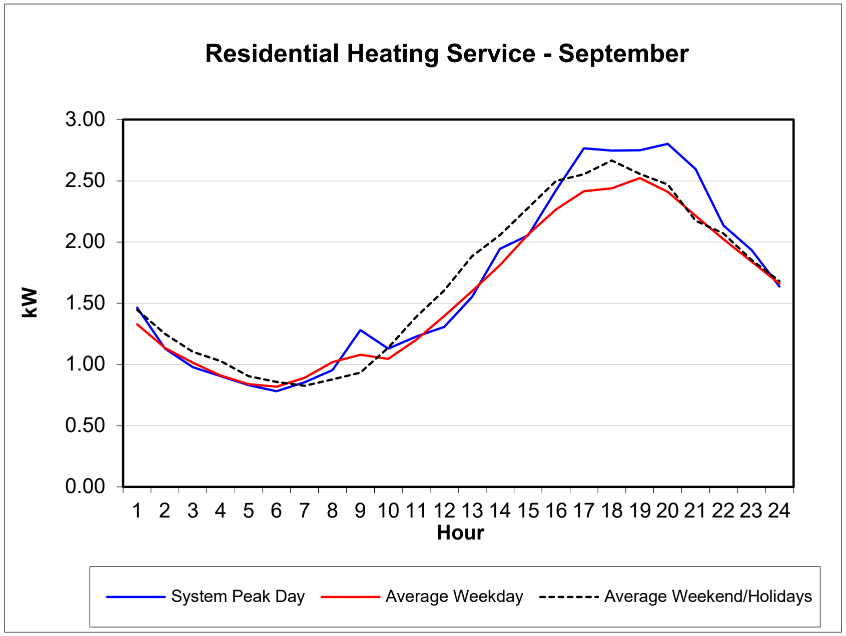
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.4871	1.9053	1.8101
2	2.1523	1.6437	1.6392
3	1.9125	1.4582	1.4817
4	1.8526	1.3659	1.3655
5	1.6239	1.2479	1.2244
6	1.5691	1.2079	1.1427
7	1.4339	1.2378	1.1174
8	1.4383	1.3264	1.1254
9	1.5214	1.3754	1.2200
10	1.7169	1.3818	1.4488
11	1.9092	1.6346	1.7606
12	2.3942	1.8635	2.0242
13	2.8862	2.1250	2.2168
14	3.3142	2.3563	2.6341
15	3.7789	2.6205	2.9076
16	4.0755	2.8332	3.1092
17	4.0516	2.9465	3.2398
18	4.3944	3.0742	3.2530
19	4.5046	3.1740	3.1665
20	4.4011	3.0664	3.0575
21	3.8097	2.7814	2.8309
22	3.4410	2.5957	2.6390
23	3.0828	2.4061	2.4613
24	2.7762	2.2040	2.1918



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.9

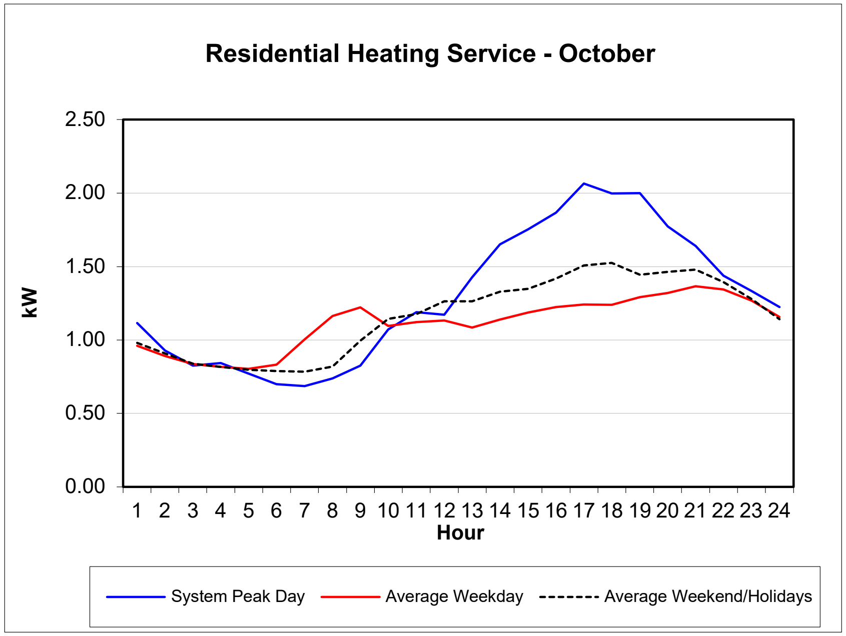
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.4648	1.3276	1.4453
2	1.1282	1.1342	1.2508
3	0.9775	1.0143	1.1035
4	0.9050	0.9090	1.0265
5	0.8312	0.8395	0.9049
6	0.7797	0.8164	0.8575
7	0.8538	0.8915	0.8262
8	0.9549	1.0190	0.8779
9	1.2811	1.0809	0.9337
10	1.1296	1.0459	1.1360
11	1.2282	1.2030	1.3914
12	1.3061	1.3950	1.6046
13	1.5529	1.5987	1.8853
14	1.9437	1.8118	2.0563
15	2.0549	2.0633	2.2804
16	2.4239	2.2669	2.4995
17	2.7664	2.4145	2.5542
18	2.7474	2.4377	2.6643
19	2.7505	2.5226	2.5570
20	2.8010	2.4093	2.4699
21	2.5953	2.2143	2.1750
22	2.1363	2.0230	2.0692
23	1.9344	1.8411	1.8521
24	1.6371	1.6609	1.6815



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.10

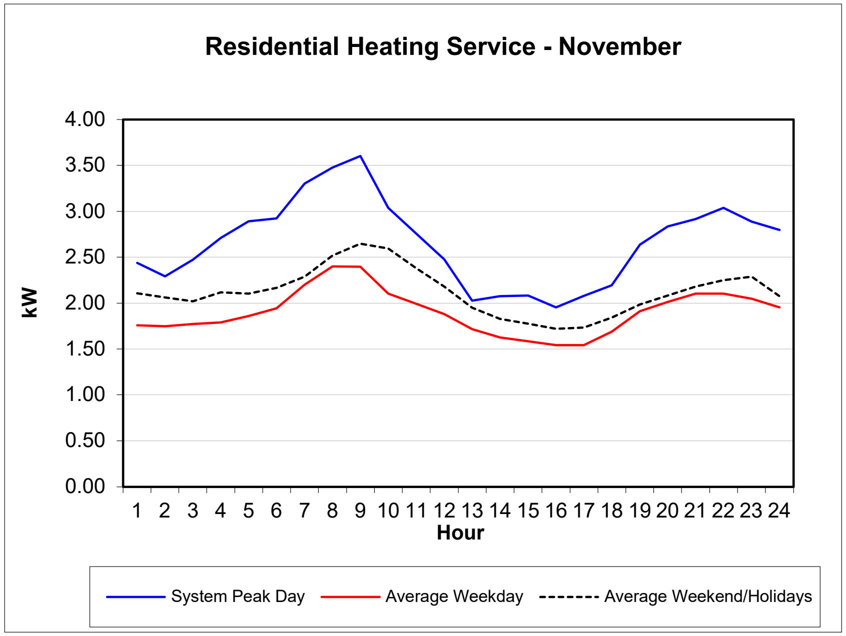
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1154	0.9620	0.9816
2	0.9280	0.8913	0.9089
3	0.8257	0.8362	0.8384
4	0.8444	0.8172	0.8166
5	0.7720	0.8029	0.7975
6	0.6966	0.8315	0.7890
7	0.6845	1.0055	0.7831
8	0.7357	1.1629	0.8186
9	0.8261	1.2231	0.9957
10	1.0720	1.0963	1.1442
11	1.1902	1.1225	1.1772
12	1.1726	1.1331	1.2639
13	1.4264	1.0857	1.2629
14	1.6514	1.1391	1.3291
15	1.7548	1.1865	1.3493
16	1.8673	1.2253	1.4193
17	2.0652	1.2410	1.5067
18	1.9969	1.2405	1.5234
19	1.9998	1.2930	1.4456
20	1.7740	1.3201	1.4633
21	1.6407	1.3652	1.4788
22	1.4381	1.3443	1.3945
23	1.3335	1.2690	1.2787
24	1.2252	1.1560	1.1408



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.11

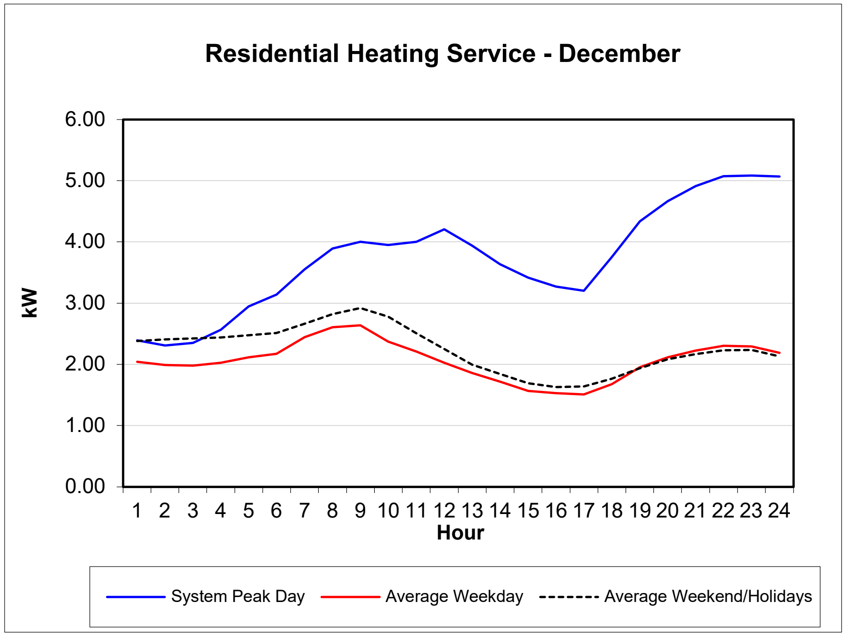
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.4360	1.7593	2.1073
2	2.2925	1.7485	2.0606
3	2.4719	1.7707	2.0193
4	2.7093	1.7902	2.1177
5	2.8920	1.8574	2.1037
6	2.9230	1.9425	2.1655
7	3.3000	2.2005	2.2872
8	3.4764	2.4015	2.5172
9	3.6039	2.3967	2.6460
10	3.0373	2.1042	2.5951
11	2.7556	1.9902	2.3795
12	2.4769	1.8801	2.1805
13	2.0266	1.7145	1.9499
14	2.0740	1.6247	1.8266
15	2.0809	1.5834	1.7770
16	1.9530	1.5427	1.7204
17	2.0775	1.5422	1.7349
18	2.1924	1.6896	1.8402
19	2.6358	1.9115	1.9848
20	2.8342	2.0107	2.0829
21	2.9149	2.1038	2.1796
22	3.0378	2.1042	2.2497
23	2.8863	2.0465	2.2860
24	2.7978	1.9528	2.0762



Southwestern Public Service Company
Hourly Load Profiles

Table E - 2.12

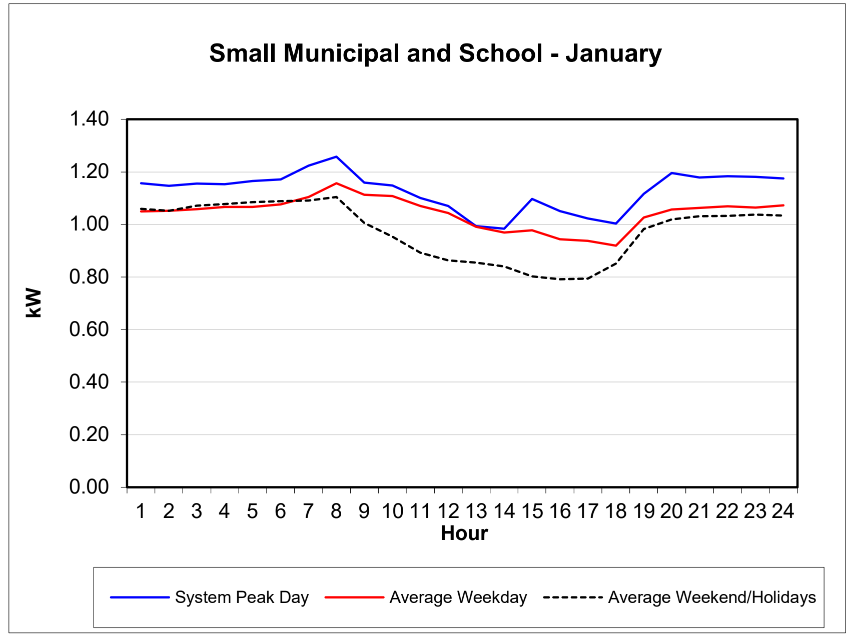
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.3896	2.0401	2.3809
2	2.3116	1.9882	2.4087
3	2.3492	1.9781	2.4231
4	2.5663	2.0280	2.4399
5	2.9484	2.1139	2.4754
6	3.1401	2.1711	2.5110
7	3.5500	2.4443	2.6653
8	3.8906	2.6056	2.8181
9	4.0004	2.6375	2.9198
10	3.9515	2.3696	2.7797
11	4.0026	2.2075	2.5083
12	4.2055	2.0257	2.2508
13	3.9415	1.8586	1.9974
14	3.6382	1.7200	1.8445
15	3.4143	1.5664	1.6893
16	3.2685	1.5321	1.6297
17	3.2031	1.5103	1.6383
18	3.7531	1.6735	1.7630
19	4.3380	1.9514	1.9381
20	4.6655	2.1171	2.0843
21	4.9131	2.2259	2.1682
22	5.0724	2.3039	2.2286
23	5.0872	2.2927	2.2349
24	5.0702	2.1868	2.1283



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.1

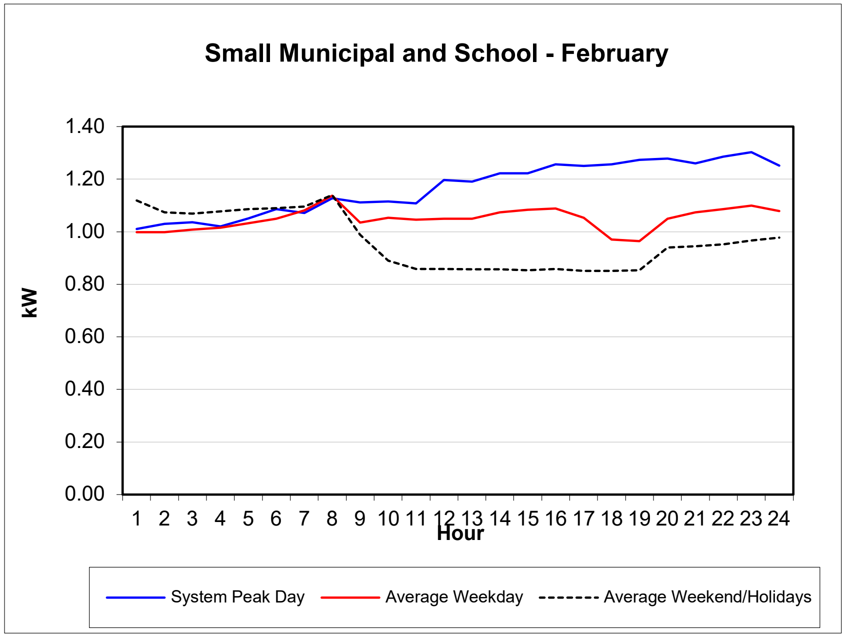
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1568	1.0491	1.0588
2	1.1476	1.0520	1.0517
3	1.1560	1.0583	1.0713
4	1.1530	1.0663	1.0781
5	1.1649	1.0666	1.0849
6	1.1709	1.0764	1.0885
7	1.2240	1.1046	1.0906
8	1.2575	1.1572	1.1048
9	1.1590	1.1128	1.0057
10	1.1479	1.1082	0.9534
11	1.1011	1.0707	0.8921
12	1.0701	1.0438	0.8639
13	0.9935	0.9913	0.8547
14	0.9838	0.9697	0.8402
15	1.0966	0.9776	0.8020
16	1.0507	0.9433	0.7915
17	1.0223	0.9382	0.7937
18	1.0034	0.9199	0.8506
19	1.1167	1.0262	0.9827
20	1.1954	1.0565	1.0189
21	1.1791	1.0632	1.0315
22	1.1836	1.0695	1.0327
23	1.1813	1.0637	1.0375
24	1.1751	1.0727	1.0335



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.2

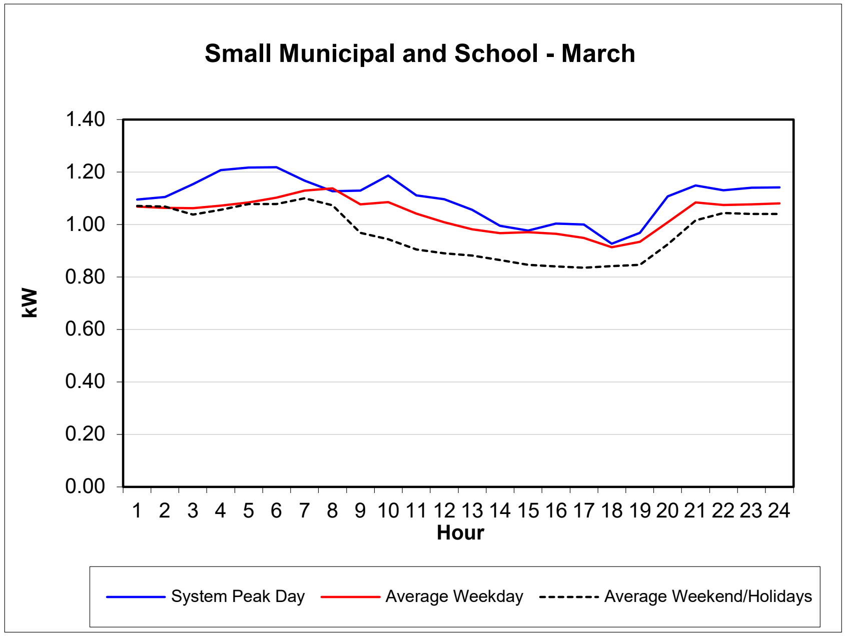
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0100	0.9978	1.1186
2	1.0296	0.9985	1.0738
3	1.0360	1.0084	1.0690
4	1.0207	1.0148	1.0775
5	1.0505	1.0326	1.0861
6	1.0855	1.0496	1.0899
7	1.0708	1.0815	1.0956
8	1.1269	1.1365	1.1391
9	1.1113	1.0344	0.9881
10	1.1146	1.0534	0.8893
11	1.1073	1.0454	0.8587
12	1.1965	1.0498	0.8581
13	1.1907	1.0491	0.8566
14	1.2222	1.0743	0.8573
15	1.2229	1.0830	0.8531
16	1.2561	1.0881	0.8577
17	1.2498	1.0532	0.8513
18	1.2565	0.9699	0.8513
19	1.2737	0.9636	0.8530
20	1.2788	1.0490	0.9399
21	1.2604	1.0732	0.9441
22	1.2855	1.0865	0.9516
23	1.3020	1.0996	0.9671
24	1.2517	1.0785	0.9780



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.3

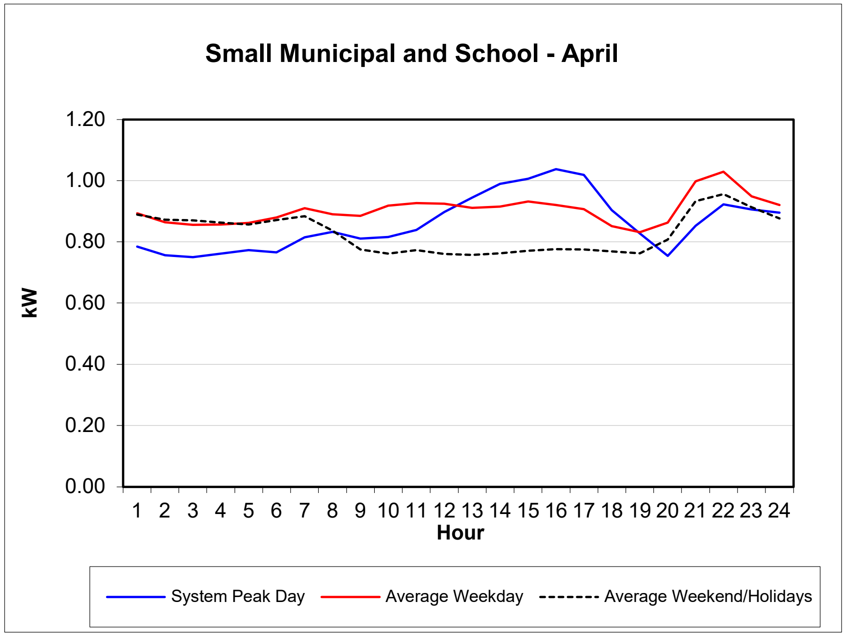
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0949	1.0682	1.0705
2	1.1057	1.0635	1.0688
3	1.1543	1.0630	1.0382
4	1.2072	1.0721	1.0565
5	1.2177	1.0846	1.0781
6	1.2185	1.1032	1.0781
7	1.1677	1.1294	1.1001
8	1.1272	1.1381	1.0731
9	1.1297	1.0766	0.9687
10	1.1873	1.0854	0.9446
11	1.1118	1.0417	0.9053
12	1.0965	1.0087	0.8901
13	1.0562	0.9825	0.8817
14	0.9951	0.9675	0.8648
15	0.9773	0.9713	0.8462
16	1.0035	0.9647	0.8403
17	1.0003	0.9493	0.8353
18	0.9262	0.9137	0.8417
19	0.9689	0.9346	0.8466
20	1.1072	1.0083	0.9242
21	1.1489	1.0849	1.0156
22	1.1313	1.0741	1.0438
23	1.1400	1.0772	1.0403
24	1.1417	1.0811	1.0408



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.4

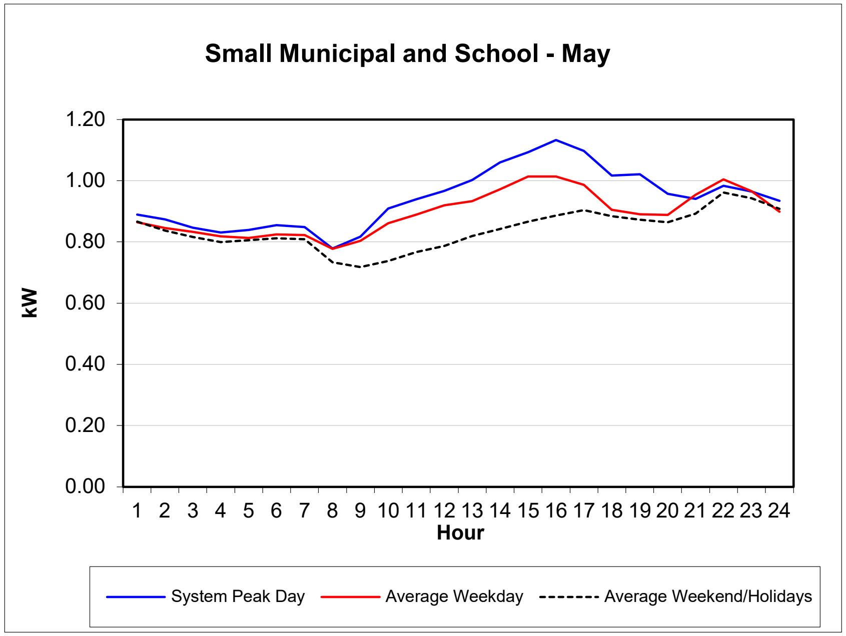
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.7841	0.8934	0.8886
2	0.7564	0.8640	0.8717
3	0.7502	0.8553	0.8702
4	0.7617	0.8565	0.8623
5	0.7725	0.8617	0.8562
6	0.7655	0.8798	0.8711
7	0.8145	0.9094	0.8837
8	0.8327	0.8903	0.8369
9	0.8101	0.8847	0.7749
10	0.8153	0.9180	0.7617
11	0.8392	0.9269	0.7732
12	0.8971	0.9248	0.7607
13	0.9441	0.9107	0.7572
14	0.9896	0.9155	0.7625
15	1.0056	0.9314	0.7711
16	1.0383	0.9198	0.7759
17	1.0191	0.9068	0.7747
18	0.9036	0.8518	0.7690
19	0.8273	0.8323	0.7627
20	0.7538	0.8626	0.8076
21	0.8522	0.9973	0.9333
22	0.9219	1.0300	0.9559
23	0.9056	0.9483	0.9134
24	0.8954	0.9208	0.8759



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.5

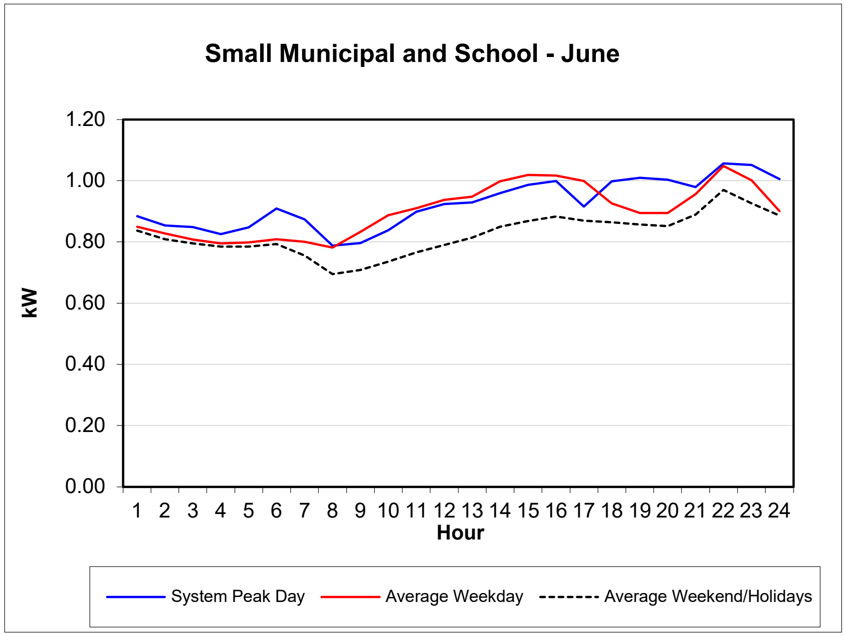
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8889	0.8645	0.8661
2	0.8731	0.8452	0.8370
3	0.8465	0.8330	0.8160
4	0.8304	0.8176	0.7991
5	0.8394	0.8132	0.8060
6	0.8548	0.8241	0.8113
7	0.8482	0.8223	0.8089
8	0.7791	0.7772	0.7337
9	0.8169	0.8038	0.7178
10	0.9089	0.8612	0.7371
11	0.9388	0.8891	0.7664
12	0.9670	0.9190	0.7863
13	1.0025	0.9329	0.8193
14	1.0596	0.9712	0.8416
15	1.0933	1.0134	0.8658
16	1.1332	1.0133	0.8856
17	1.0971	0.9866	0.9033
18	1.0168	0.9049	0.8837
19	1.0213	0.8901	0.8721
20	0.9570	0.8883	0.8638
21	0.9407	0.9541	0.8917
22	0.9833	1.0046	0.9620
23	0.9647	0.9659	0.9421
24	0.9337	0.8982	0.9076



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.6

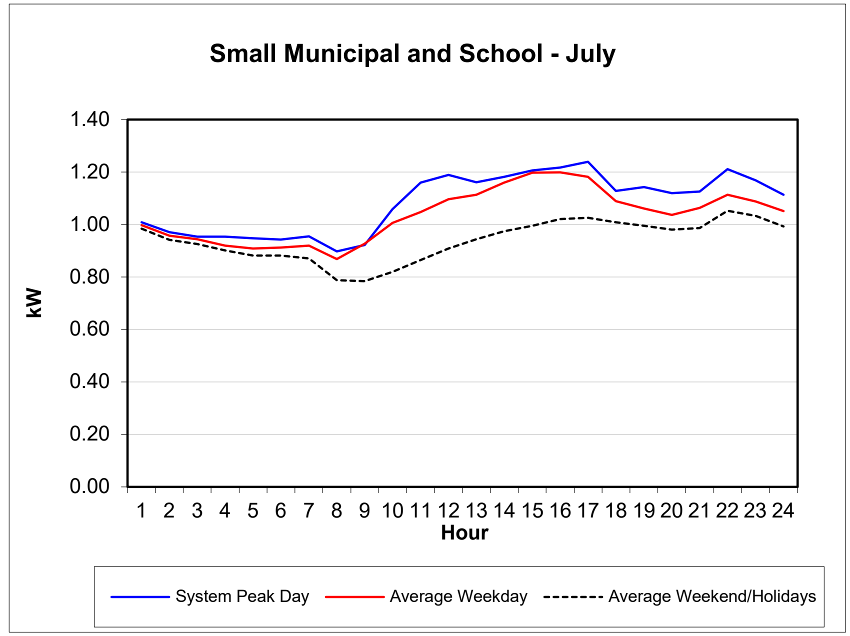
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8836	0.8496	0.8373
2	0.8534	0.8275	0.8092
3	0.8482	0.8079	0.7953
4	0.8252	0.7951	0.7851
5	0.8471	0.7986	0.7847
6	0.9093	0.8086	0.7928
7	0.8738	0.8003	0.7553
8	0.7885	0.7819	0.6947
9	0.7967	0.8326	0.7080
10	0.8381	0.8870	0.7360
11	0.8991	0.9105	0.7660
12	0.9237	0.9373	0.7902
13	0.9288	0.9475	0.8145
14	0.9595	0.9975	0.8496
15	0.9867	1.0194	0.8687
16	0.9995	1.0168	0.8832
17	0.9153	0.9986	0.8698
18	0.9978	0.9261	0.8641
19	1.0092	0.8950	0.8571
20	1.0028	0.8945	0.8518
21	0.9788	0.9560	0.8897
22	1.0566	1.0482	0.9699
23	1.0510	1.0006	0.9260
24	1.0054	0.9011	0.8860



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.7

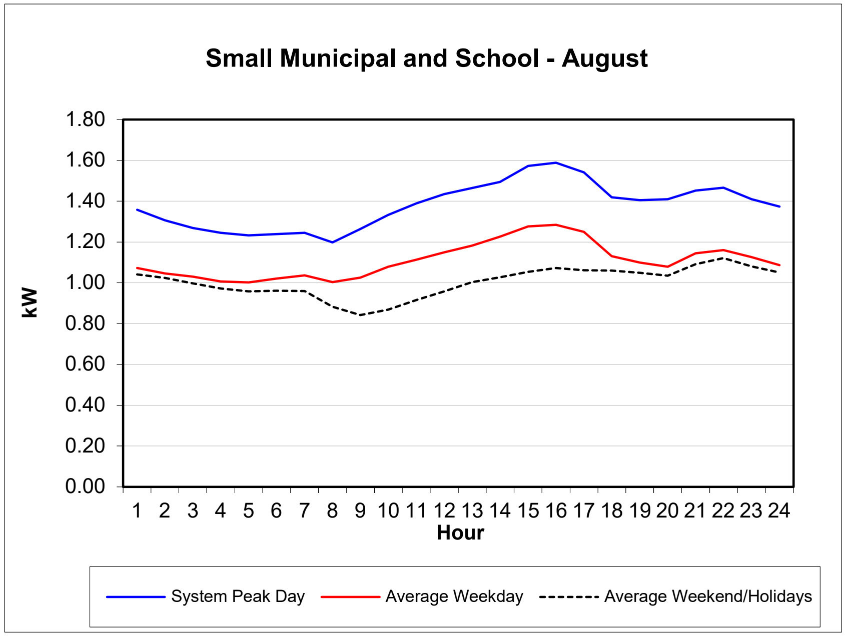
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0090	0.9980	0.9845
2	0.9706	0.9575	0.9417
3	0.9533	0.9437	0.9255
4	0.9536	0.9191	0.9006
5	0.9469	0.9079	0.8815
6	0.9422	0.9123	0.8811
7	0.9544	0.9191	0.8708
8	0.8978	0.8676	0.7878
9	0.9213	0.9269	0.7839
10	1.0579	1.0064	0.8193
11	1.1592	1.0469	0.8646
12	1.1888	1.0969	0.9086
13	1.1608	1.1139	0.9436
14	1.1813	1.1601	0.9742
15	1.2064	1.1971	0.9946
16	1.2169	1.1986	1.0202
17	1.2393	1.1813	1.0257
18	1.1282	1.0891	1.0083
19	1.1426	1.0612	0.9955
20	1.1188	1.0366	0.9805
21	1.1253	1.0634	0.9860
22	1.2104	1.1129	1.0529
23	1.1676	1.0882	1.0327
24	1.1137	1.0508	0.9929



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.8

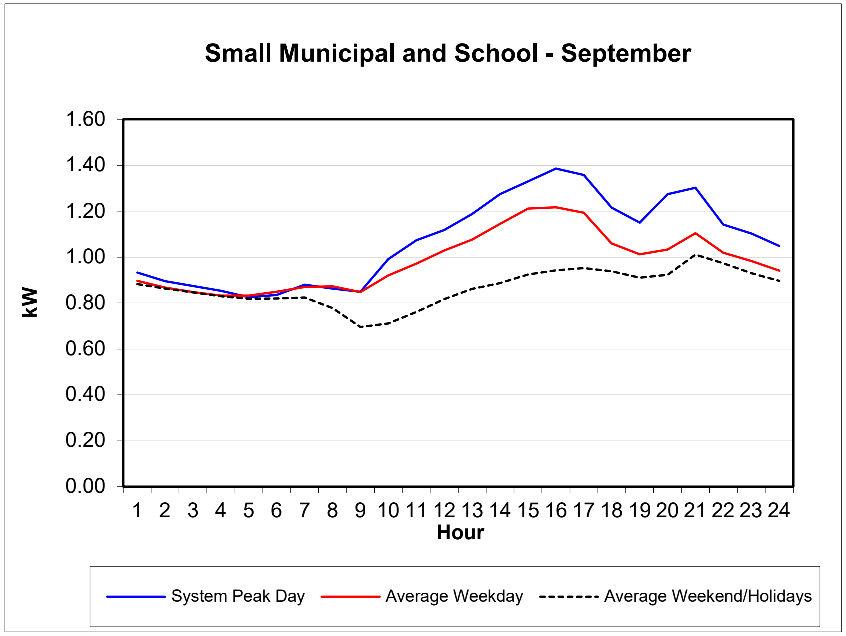
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.3573	1.0731	1.0412
2	1.3064	1.0467	1.0238
3	1.2690	1.0305	0.9968
4	1.2454	1.0072	0.9719
5	1.2327	1.0013	0.9588
6	1.2383	1.0207	0.9618
7	1.2451	1.0373	0.9590
8	1.1970	1.0029	0.8829
9	1.2645	1.0250	0.8419
10	1.3333	1.0789	0.8687
11	1.3896	1.1136	0.9160
12	1.4341	1.1489	0.9585
13	1.4649	1.1820	1.0042
14	1.4941	1.2259	1.0276
15	1.5723	1.2765	1.0545
16	1.5883	1.2844	1.0723
17	1.5421	1.2493	1.0615
18	1.4198	1.1309	1.0602
19	1.4043	1.0989	1.0487
20	1.4104	1.0781	1.0348
21	1.4522	1.1455	1.0910
22	1.4657	1.1606	1.1202
23	1.4092	1.1264	1.0810
24	1.3742	1.0861	1.0505



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.9

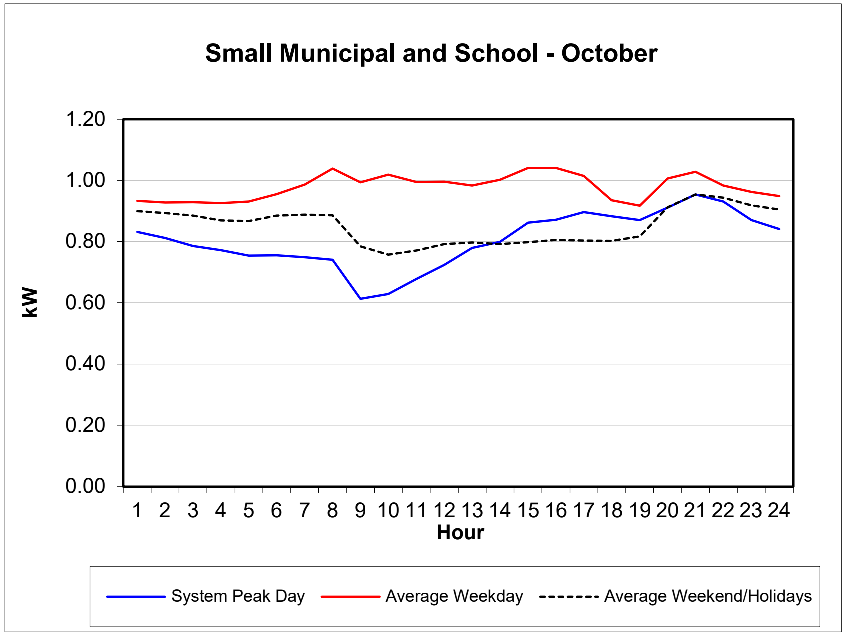
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.9333	0.8966	0.8822
2	0.8951	0.8680	0.8636
3	0.8748	0.8482	0.8458
4	0.8529	0.8330	0.8296
5	0.8242	0.8323	0.8185
6	0.8358	0.8490	0.8204
7	0.8802	0.8700	0.8235
8	0.8636	0.8734	0.7783
9	0.8495	0.8475	0.6950
10	0.9909	0.9200	0.7110
11	1.0733	0.9714	0.7615
12	1.1179	1.0285	0.8177
13	1.1884	1.0768	0.8618
14	1.2748	1.1442	0.8862
15	1.3301	1.2113	0.9241
16	1.3847	1.2167	0.9428
17	1.3580	1.1929	0.9517
18	1.2159	1.0592	0.9385
19	1.1503	1.0125	0.9103
20	1.2744	1.0325	0.9224
21	1.3021	1.1038	1.0105
22	1.1421	1.0193	0.9739
23	1.1034	0.9834	0.9298
24	1.0483	0.9410	0.8964



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.10

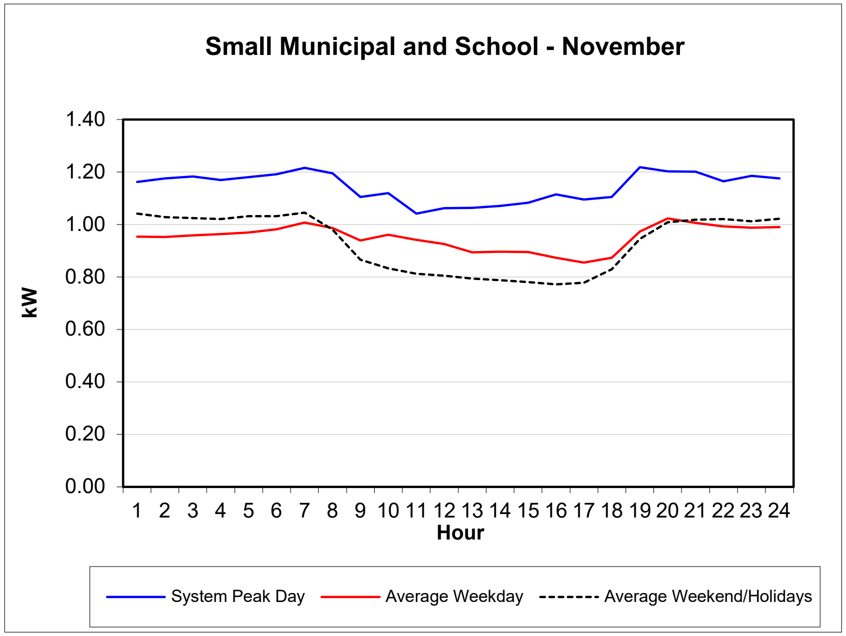
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8314	0.9328	0.8991
2	0.8117	0.9275	0.8928
3	0.7850	0.9286	0.8848
4	0.7720	0.9255	0.8695
5	0.7539	0.9308	0.8669
6	0.7547	0.9545	0.8843
7	0.7488	0.9863	0.8882
8	0.7406	1.0381	0.8855
9	0.6138	0.9934	0.7839
10	0.6282	1.0182	0.7572
11	0.6774	0.9943	0.7703
12	0.7241	0.9959	0.7923
13	0.7796	0.9832	0.7966
14	0.7995	1.0014	0.7921
15	0.8618	1.0407	0.7979
16	0.8713	1.0411	0.8051
17	0.8958	1.0144	0.8037
18	0.8827	0.9345	0.8025
19	0.8700	0.9176	0.8167
20	0.9111	1.0056	0.9125
21	0.9541	1.0279	0.9544
22	0.9309	0.9832	0.9430
23	0.8707	0.9619	0.9183
24	0.8407	0.9487	0.9046



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.11

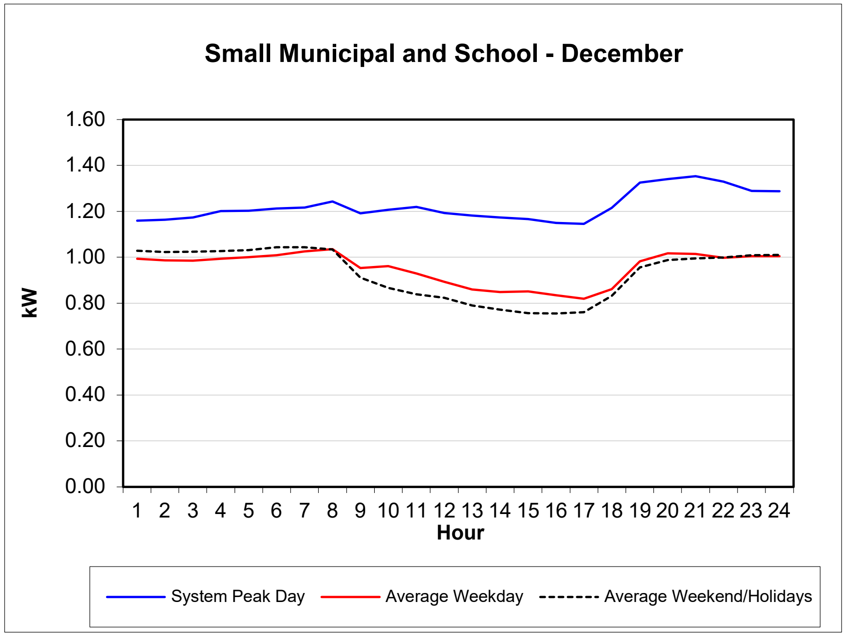
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1614	0.9534	1.0413
2	1.1748	0.9519	1.0278
3	1.1827	0.9578	1.0243
4	1.1687	0.9630	1.0203
5	1.1797	0.9694	1.0318
6	1.1909	0.9807	1.0316
7	1.2157	1.0072	1.0448
8	1.1943	0.9863	0.9805
9	1.1041	0.9388	0.8650
10	1.1189	0.9611	0.8319
11	1.0409	0.9405	0.8123
12	1.0620	0.9252	0.8038
13	1.0625	0.8938	0.7940
14	1.0699	0.8956	0.7870
15	1.0823	0.8950	0.7795
16	1.1146	0.8725	0.7721
17	1.0947	0.8547	0.7775
18	1.1038	0.8732	0.8287
19	1.2178	0.9727	0.9443
20	1.2015	1.0228	1.0077
21	1.2003	1.0055	1.0179
22	1.1640	0.9923	1.0200
23	1.1854	0.9875	1.0123
24	1.1747	0.9894	1.0218



Southwestern Public Service Company
Hourly Load Profiles

Table E - 3.12

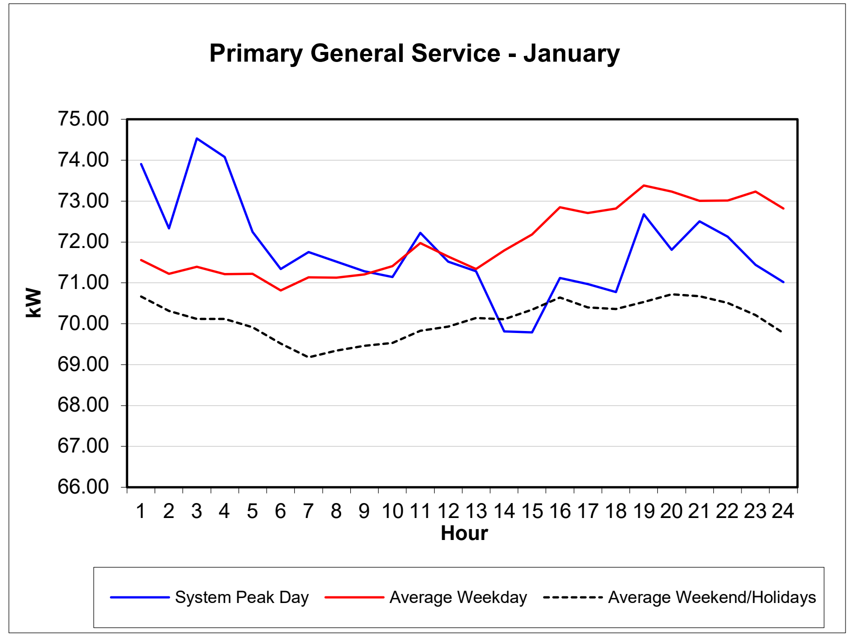
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1588	0.9935	1.0280
2	1.1640	0.9865	1.0234
3	1.1733	0.9852	1.0235
4	1.2014	0.9929	1.0274
5	1.2024	1.0011	1.0311
6	1.2120	1.0094	1.0439
7	1.2160	1.0256	1.0431
8	1.2435	1.0359	1.0342
9	1.1918	0.9535	0.9108
10	1.2073	0.9609	0.8662
11	1.2198	0.9292	0.8390
12	1.1921	0.8930	0.8236
13	1.1819	0.8595	0.7903
14	1.1735	0.8490	0.7724
15	1.1657	0.8511	0.7559
16	1.1493	0.8343	0.7546
17	1.1458	0.8198	0.7605
18	1.2151	0.8611	0.8312
19	1.3253	0.9828	0.9555
20	1.3411	1.0177	0.9879
21	1.3534	1.0148	0.9942
22	1.3295	0.9982	0.9989
23	1.2891	1.0044	1.0082
24	1.2881	1.0041	1.0106



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.1

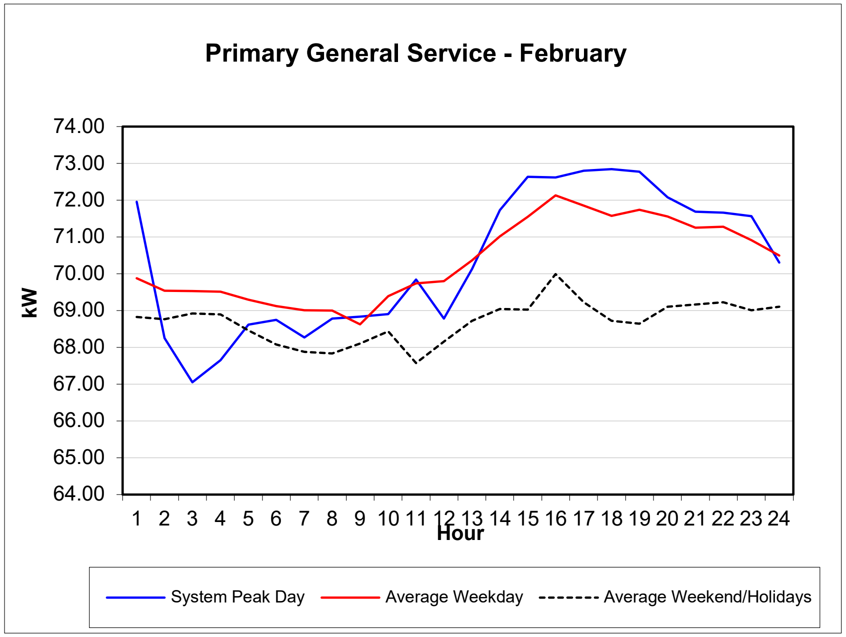
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	73.9050	71.5613	70.6648
2	72.3347	71.2231	70.3146
3	74.5304	71.3906	70.1214
4	74.0828	71.2148	70.1217
5	72.2443	71.2244	69.9172
6	71.3405	70.8130	69.5122
7	71.7509	71.1397	69.1778
8	71.5228	71.1261	69.3447
9	71.2816	71.2075	69.4585
10	71.1421	71.4091	69.5297
11	72.2238	71.9737	69.8272
12	71.5169	71.6469	69.9296
13	71.2810	71.3420	70.1408
14	69.8116	71.7897	70.1109
15	69.7873	72.1824	70.3432
16	71.1219	72.8520	70.6457
17	70.9721	72.7098	70.4020
18	70.7763	72.8162	70.3615
19	72.6789	73.3826	70.5351
20	71.8081	73.2344	70.7207
21	72.5072	73.0034	70.6766
22	72.1305	73.0163	70.5068
23	71.4399	73.2321	70.2122
24	71.0159	72.8214	69.7717



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.2

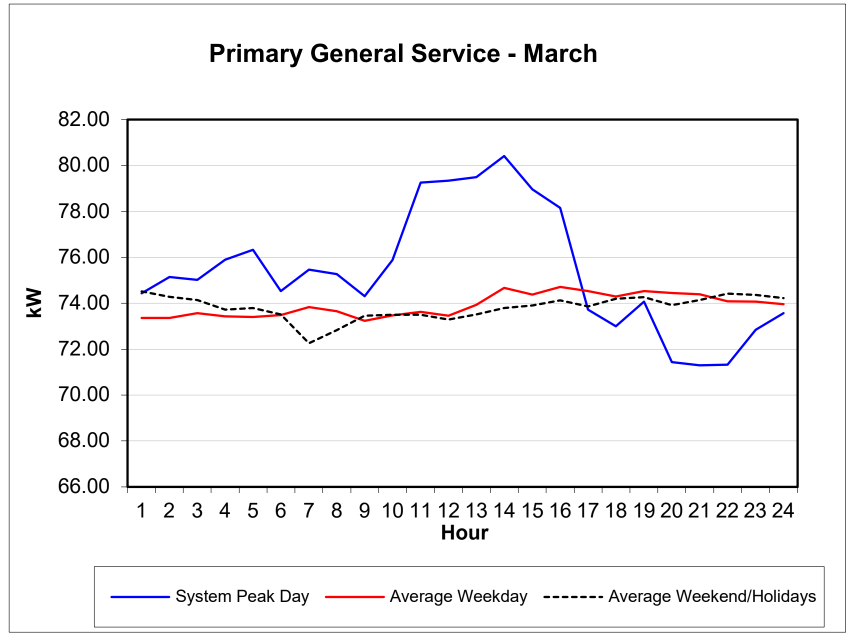
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	71.9598	69.8761	68.8249
2	68.2547	69.5430	68.7662
3	67.0460	69.5286	68.9263
4	67.6527	69.5166	68.8990
5	68.6169	69.2994	68.4639
6	68.7515	69.1194	68.0767
7	68.2720	69.0094	67.8741
8	68.7856	69.0026	67.8382
9	68.8313	68.6212	68.1003
10	68.9055	69.3939	68.4348
11	69.8405	69.7396	67.5737
12	68.7861	69.7998	68.1605
13	70.1338	70.3704	68.7214
14	71.7334	71.0209	69.0407
15	72.6351	71.5512	69.0284
16	72.6204	72.1299	69.9917
17	72.8020	71.8562	69.2306
18	72.8465	71.5760	68.7223
19	72.7738	71.7435	68.6442
20	72.0824	71.5621	69.1042
21	71.6925	71.2547	69.1677
22	71.6617	71.2753	69.2232
23	71.5693	70.9146	69.0078
24	70.3091	70.4968	69.1074



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.3

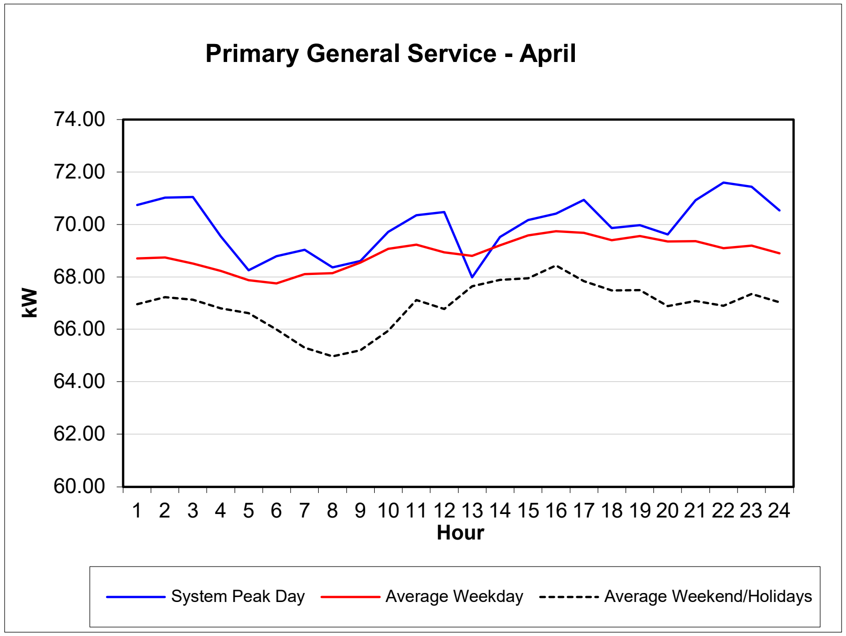
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	74.4424	73.3699	74.5138
2	75.1437	73.3678	74.2856
3	75.0241	73.5729	74.1501
4	75.9019	73.4391	73.7299
5	76.3304	73.4097	73.7910
6	74.5372	73.4845	73.5204
7	75.4652	73.8418	72.2573
8	75.2722	73.6613	72.8385
9	74.3140	73.2265	73.4662
10	75.8808	73.4718	73.5091
11	79.2589	73.6347	73.5010
12	79.3378	73.4631	73.2984
13	79.4912	73.9330	73.5195
14	80.4095	74.6690	73.7937
15	78.9675	74.3867	73.9048
16	78.1605	74.7151	74.1357
17	73.7227	74.5347	73.8698
18	73.0052	74.2976	74.1981
19	74.0768	74.5373	74.2748
20	71.4419	74.4545	73.9234
21	71.2946	74.3936	74.1390
22	71.3330	74.0941	74.4291
23	72.8436	74.0793	74.3672
24	73.5674	73.9617	74.2276



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.4

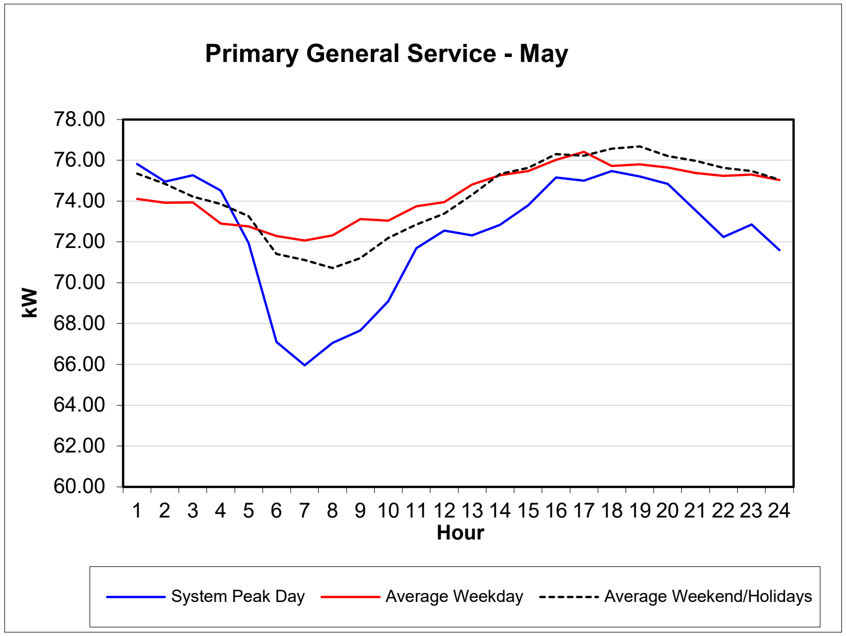
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	70.7329	68.6998	66.9558
2	71.0130	68.7391	67.2295
3	71.0370	68.5039	67.1262
4	69.5471	68.2221	66.7944
5	68.2477	67.8694	66.6211
6	68.7885	67.7493	65.9984
7	69.0277	68.1077	65.2937
8	68.3545	68.1438	64.9726
9	68.6015	68.5456	65.1977
10	69.7146	69.0731	65.9491
11	70.3467	69.2251	67.1116
12	70.4721	68.9333	66.7750
13	67.9855	68.7997	67.6410
14	69.5142	69.2040	67.8854
15	70.1685	69.5741	67.9409
16	70.4111	69.7442	68.4369
17	70.9354	69.6809	67.8293
18	69.8556	69.3956	67.4831
19	69.9664	69.5531	67.4892
20	69.6125	69.3503	66.8785
21	70.9221	69.3637	67.0751
22	71.5929	69.0924	66.9018
23	71.4387	69.1874	67.3505
24	70.5283	68.8992	67.0329



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.5

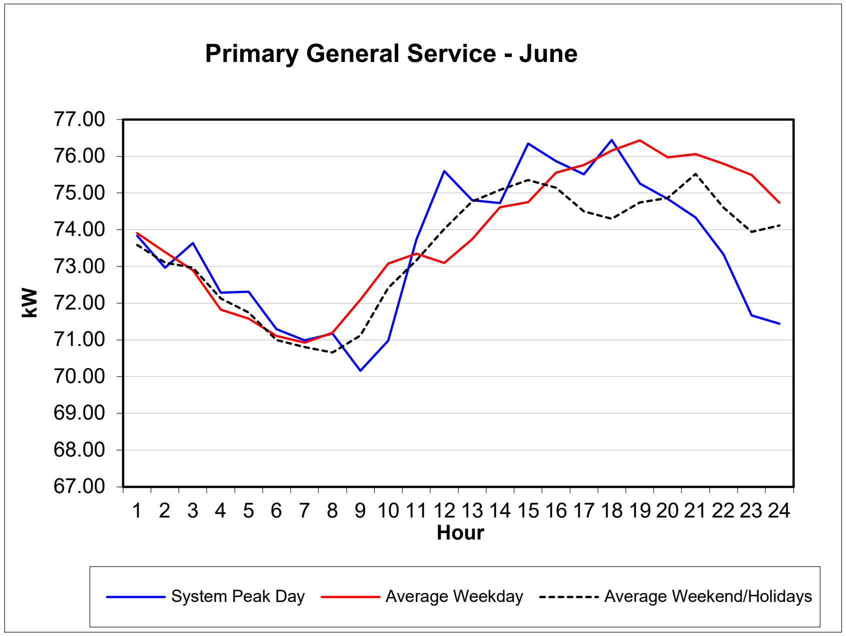
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	75.8258	74.1016	75.3418
2	74.9479	73.9230	74.8515
3	75.2682	73.9264	74.2142
4	74.5149	72.8963	73.8610
5	71.9484	72.7590	73.2637
6	67.0984	72.2925	71.4105
7	65.9572	72.0686	71.1108
8	67.0529	72.3220	70.7243
9	67.6561	73.1161	71.2134
10	69.0845	73.0349	72.1981
11	71.6903	73.7412	72.8496
12	72.5532	73.9435	73.3892
13	72.3227	74.8185	74.3054
14	72.8390	75.2740	75.3224
15	73.7939	75.4655	75.6262
16	75.1639	76.0188	76.3069
17	75.0025	76.4092	76.2273
18	75.4633	75.7187	76.5661
19	75.2070	75.8074	76.6742
20	74.8508	75.6419	76.2125
21	73.5380	75.3700	75.9703
22	72.2459	75.2303	75.6280
23	72.8543	75.3007	75.4670
24	71.5951	75.0248	75.0439



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.6

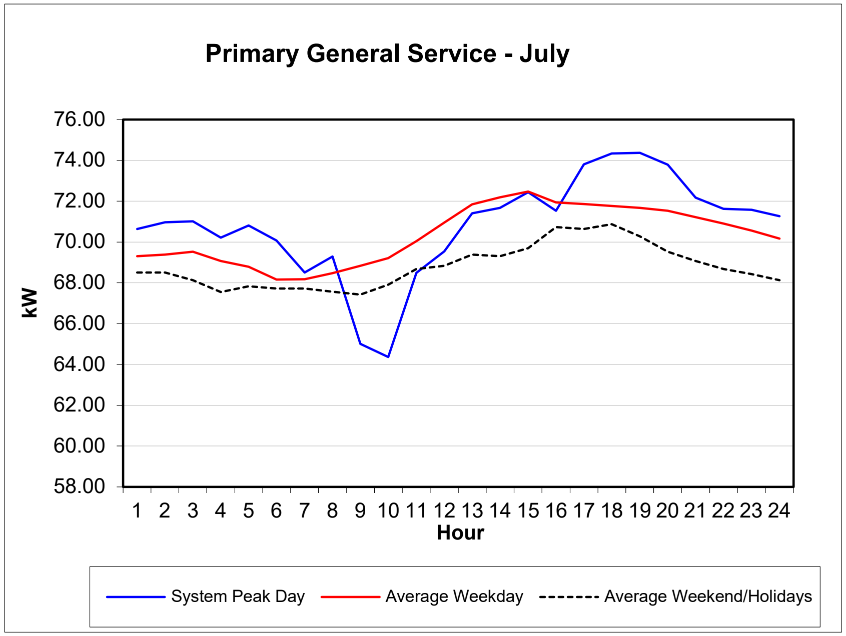
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	73.8397	73.9073	73.5835
2	72.9634	73.3885	73.1051
3	73.6330	72.8938	72.9678
4	72.2837	71.8203	72.1285
5	72.3129	71.5828	71.7445
6	71.2966	71.1060	71.0000
7	70.9906	70.9300	70.8025
8	71.1729	71.1957	70.6602
9	70.1561	72.0948	71.1192
10	70.9829	73.0803	72.4190
11	73.7296	73.3492	73.1678
12	75.5959	73.0987	74.0213
13	74.8039	73.7389	74.7717
14	74.7285	74.6128	75.0868
15	76.3429	74.7543	75.3553
16	75.8643	75.5534	75.1429
17	75.5066	75.7635	74.4979
18	76.4412	76.1511	74.3022
19	75.2526	76.4360	74.7414
20	74.8418	75.9710	74.8632
21	74.3358	76.0547	75.5185
22	73.3344	75.7959	74.5996
23	71.6685	75.4899	73.9428
24	71.4416	74.7338	74.1153



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.7

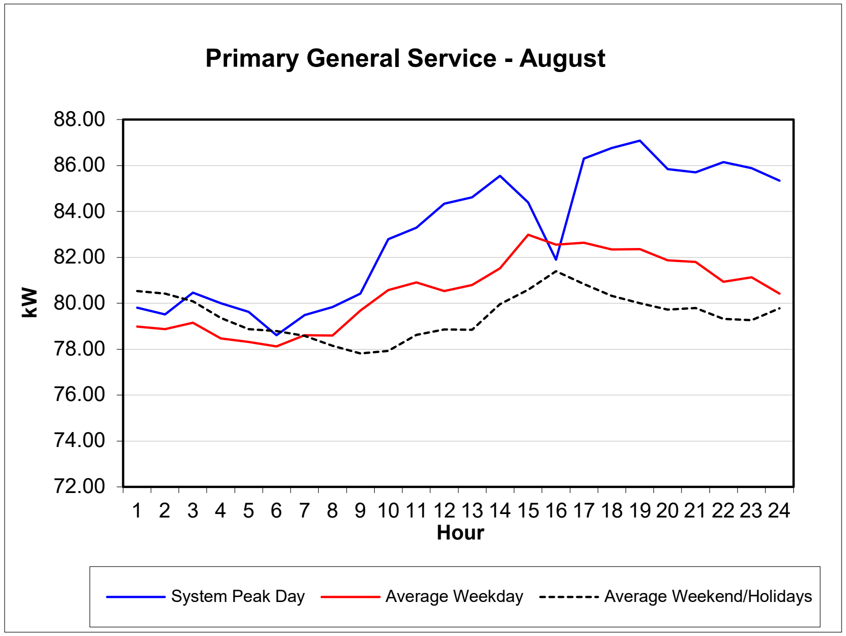
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	70.6413	69.3042	68.5100
2	70.9722	69.3806	68.4985
3	71.0072	69.5286	68.1357
4	70.2142	69.0727	67.5552
5	70.8086	68.7956	67.8326
6	70.0699	68.1534	67.7288
7	68.5002	68.1716	67.7293
8	69.2877	68.4782	67.5696
9	65.0034	68.8338	67.4131
10	64.3592	69.2144	67.9071
11	68.4902	70.0430	68.6840
12	69.5473	70.9440	68.8413
13	71.4078	71.8395	69.3876
14	71.6777	72.1848	69.3065
15	72.4422	72.4728	69.7043
16	71.5369	71.9359	70.7263
17	73.7986	71.8558	70.6334
18	74.3342	71.7719	70.8782
19	74.3676	71.6709	70.2823
20	73.7928	71.5377	69.5206
21	72.1808	71.2135	69.0702
22	71.6195	70.9059	68.6809
23	71.5798	70.5529	68.4287
24	71.2709	70.1627	68.1295



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.8

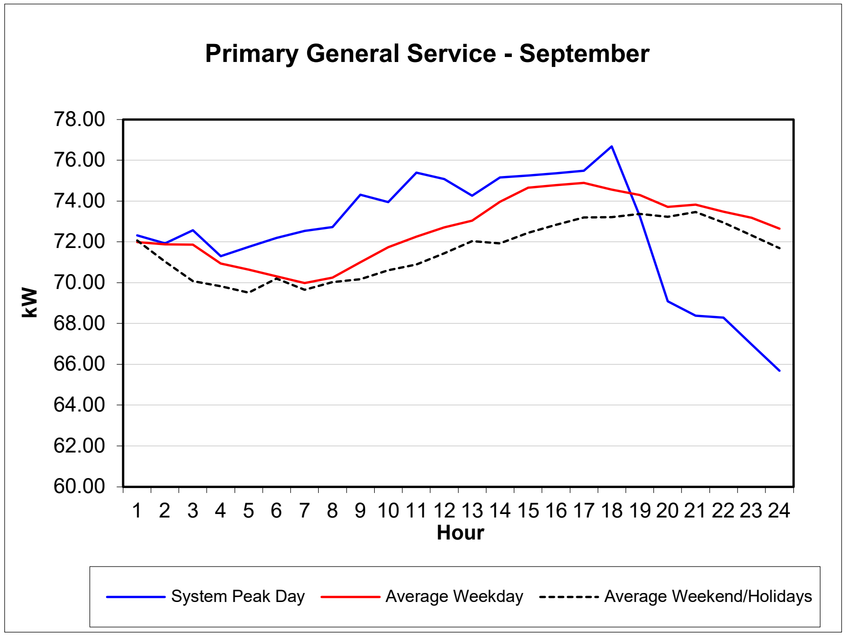
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	79.8022	78.9866	80.5384
2	79.5097	78.8684	80.4218
3	80.4645	79.1579	80.0908
4	79.9959	78.4741	79.3552
5	79.6238	78.3100	78.8761
6	78.6055	78.1114	78.7968
7	79.4848	78.6059	78.5794
8	79.8411	78.5892	78.1531
9	80.4168	79.6755	77.8100
10	82.7934	80.5747	77.9319
11	83.2967	80.9151	78.6260
12	84.3327	80.5255	78.8605
13	84.6190	80.7917	78.8474
14	85.5446	81.5241	79.9676
15	84.3930	82.9756	80.5856
16	81.8917	82.5505	81.3959
17	86.3027	82.6376	80.8335
18	86.7559	82.3444	80.3210
19	87.0813	82.3613	80.0068
20	85.8438	81.8740	79.7229
21	85.7030	81.7979	79.8003
22	86.1508	80.9371	79.3245
23	85.8896	81.1372	79.2588
24	85.3365	80.4220	79.7812



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.9

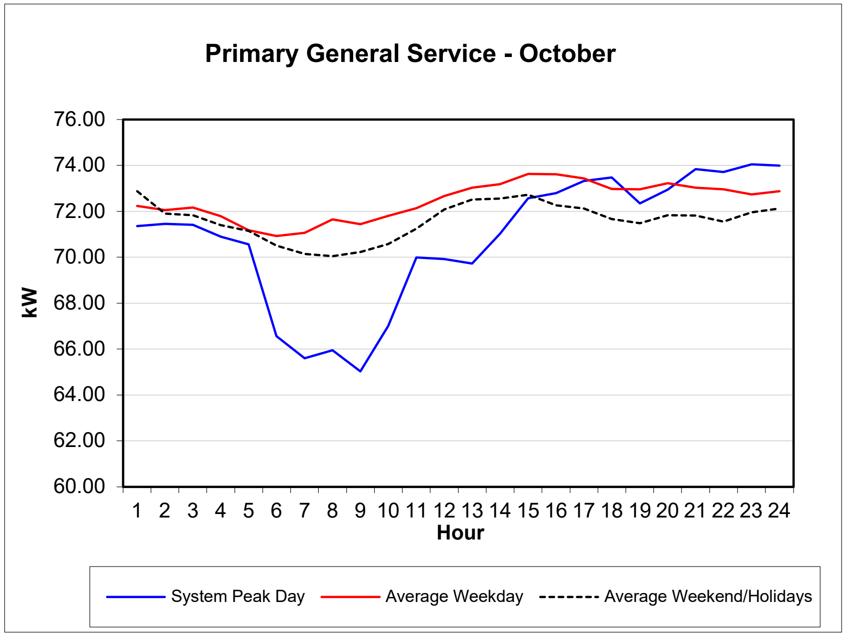
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	72.3154	71.9893	72.0580
2	71.9287	71.8784	71.0263
3	72.5619	71.8547	70.0720
4	71.2933	70.9415	69.8186
5	71.7452	70.6325	69.5219
6	72.1937	70.3067	70.2023
7	72.5282	69.9821	69.6551
8	72.7201	70.2368	70.0258
9	74.3112	70.9973	70.1724
10	73.9452	71.7413	70.6061
11	75.3872	72.2584	70.8863
12	75.0797	72.7103	71.4393
13	74.2532	73.0338	72.0317
14	75.1600	73.9686	71.9186
15	75.2517	74.6537	72.4431
16	75.3584	74.7781	72.8243
17	75.4883	74.8966	73.1901
18	76.6852	74.5526	73.2014
19	73.2431	74.2869	73.3656
20	69.0797	73.7033	73.2254
21	68.3759	73.8257	73.4718
22	68.2904	73.4817	72.9379
23	66.9674	73.1785	72.3136
24	65.6915	72.6363	71.6812



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.10

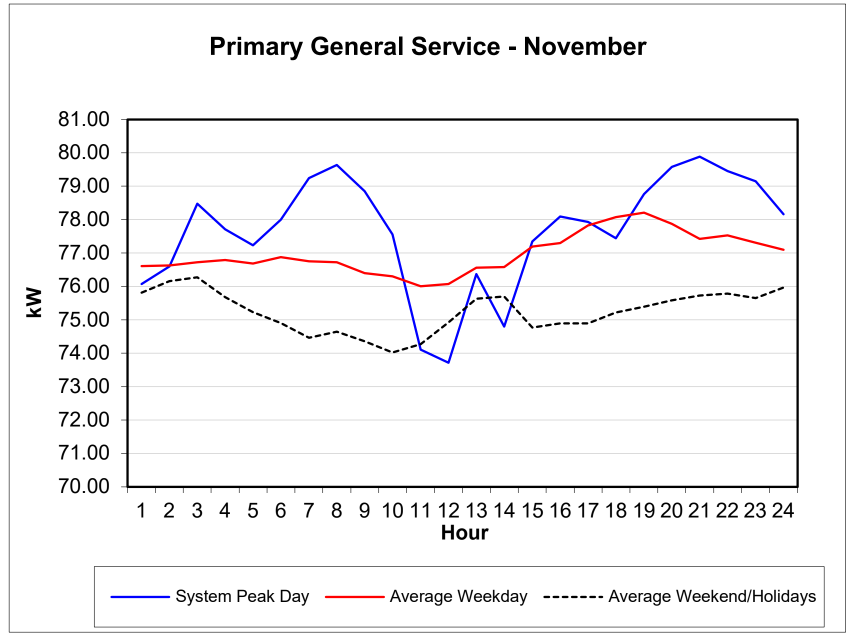
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	71.3499	72.2284	72.8752
2	71.4495	72.0433	71.9032
3	71.4070	72.1640	71.8242
4	70.8953	71.7913	71.3948
5	70.5556	71.1701	71.1486
6	66.5644	70.9271	70.4968
7	65.6024	71.0623	70.1415
8	65.9439	71.6488	70.0477
9	65.0284	71.4323	70.2224
10	67.0074	71.8009	70.5705
11	69.9878	72.1352	71.2389
12	69.9184	72.6595	72.0819
13	69.7160	73.0269	72.5162
14	71.0193	73.1821	72.5470
15	72.5684	73.6241	72.7211
16	72.7850	73.6156	72.2519
17	73.3222	73.4327	72.1190
18	73.4770	72.9764	71.6594
19	72.3354	72.9568	71.4732
20	72.9362	73.2205	71.8256
21	73.8381	73.0304	71.8094
22	73.7025	72.9618	71.5459
23	74.0492	72.7377	71.9533
24	73.9817	72.8738	72.1225



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.11

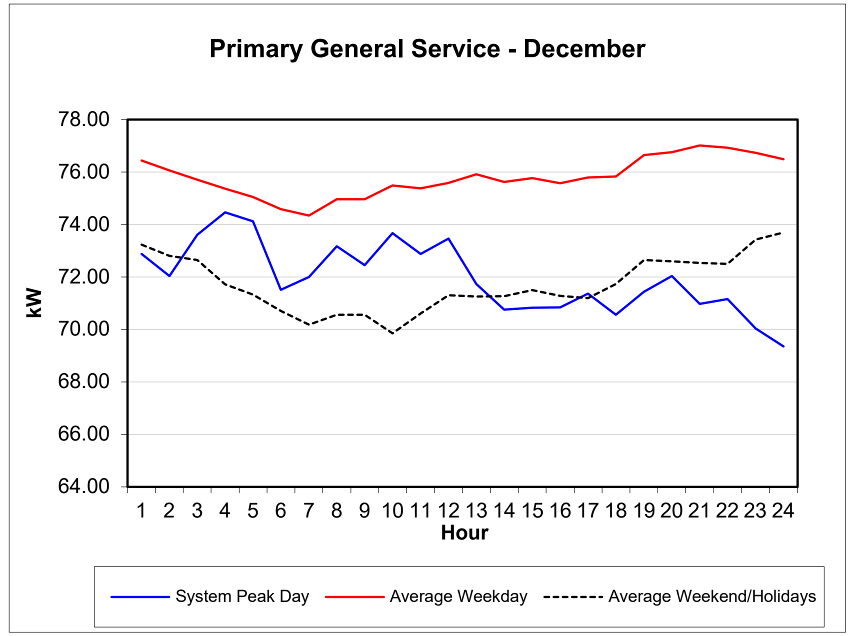
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	76.0727	76.6086	75.8141
2	76.6002	76.6325	76.1541
3	78.4741	76.7269	76.2775
4	77.7125	76.7870	75.6757
5	77.2308	76.6867	75.2253
6	77.9971	76.8725	74.9022
7	79.2396	76.7520	74.4660
8	79.6406	76.7194	74.6401
9	78.8530	76.3980	74.3552
10	77.5550	76.2984	74.0262
11	74.1046	76.0080	74.2675
12	73.7143	76.0751	74.9245
13	76.3736	76.5653	75.6336
14	74.8003	76.5762	75.6987
15	77.3491	77.1935	74.7661
16	78.0916	77.3011	74.8902
17	77.9285	77.8218	74.8960
18	77.4383	78.0795	75.2155
19	78.7668	78.2080	75.3943
20	79.5789	77.8729	75.5878
21	79.8844	77.4263	75.7260
22	79.4581	77.5294	75.7883
23	79.1444	77.3121	75.6492
24	78.1609	77.0932	75.9662



Southwestern Public Service Company
Hourly Load Profiles

Table E - 4.12

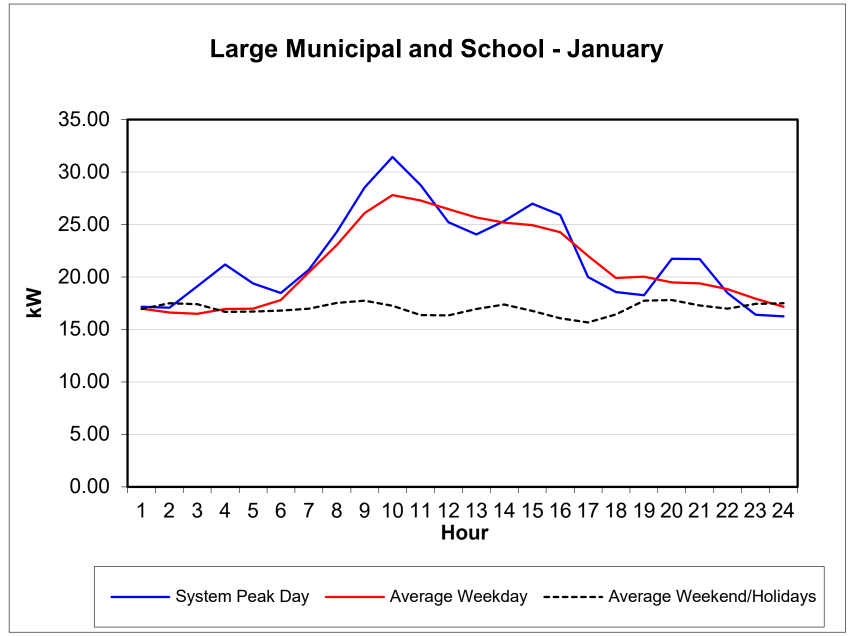
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	72.8726	76.4430	73.2355
2	72.0304	76.0599	72.8027
3	73.6063	75.7110	72.6480
4	74.4568	75.3622	71.7135
5	74.1183	75.0452	71.3252
6	71.5168	74.5844	70.7043
7	72.0004	74.3427	70.1843
8	73.1642	74.9577	70.5641
9	72.4557	74.9670	70.5590
10	73.6644	75.4898	69.8561
11	72.8759	75.3808	70.6029
12	73.4662	75.5787	71.3056
13	71.7355	75.9080	71.2594
14	70.7596	75.6234	71.2629
15	70.8291	75.7676	71.4954
16	70.8439	75.5707	71.2763
17	71.3627	75.7917	71.1921
18	70.5566	75.8229	71.7252
19	71.4352	76.6444	72.6434
20	72.0398	76.7586	72.5919
21	70.9684	77.0054	72.5327
22	71.1591	76.9269	72.4993
23	70.0370	76.7345	73.4305
24	69.3559	76.4835	73.6930



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.1

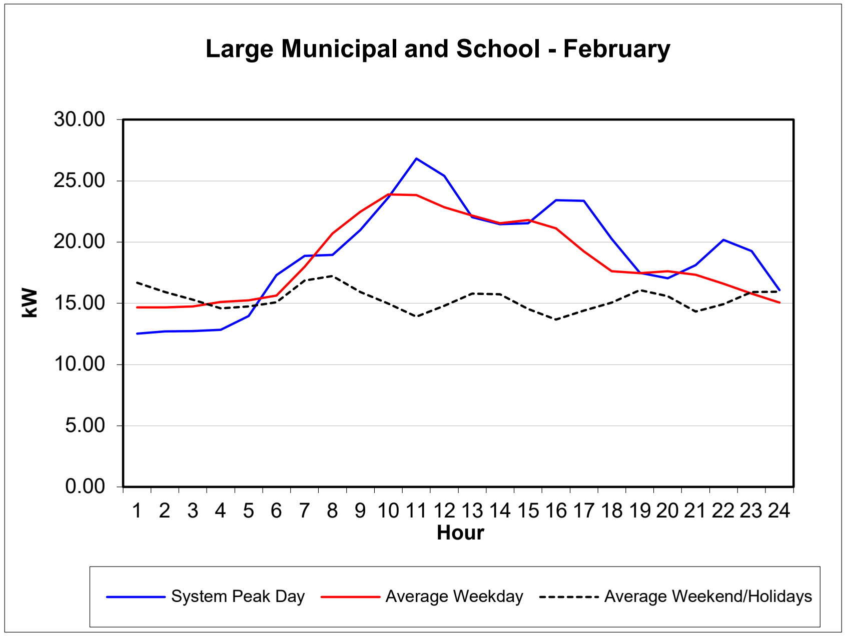
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.1769	16.9823	16.9514
2	17.0892	16.6079	17.5118
3	19.1094	16.4913	17.4251
4	21.1940	16.9513	16.6645
5	19.3908	16.9894	16.7131
6	18.4733	17.8065	16.8112
7	20.7189	20.4561	16.9921
8	24.3123	23.0437	17.5256
9	28.5416	26.1060	17.7371
10	31.4213	27.8107	17.2516
11	28.7540	27.2883	16.3612
12	25.2103	26.4525	16.3516
13	24.0715	25.6658	16.9608
14	25.3415	25.1787	17.3929
15	26.9910	24.9441	16.7656
16	25.9050	24.2671	16.0542
17	19.9914	22.0108	15.6802
18	18.5564	19.9188	16.4240
19	18.2751	20.0341	17.7372
20	21.7449	19.4694	17.8124
21	21.6951	19.3784	17.2903
22	18.4668	18.8500	16.9914
23	16.4032	17.9255	17.4313
24	16.2396	17.1550	17.4957



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.2

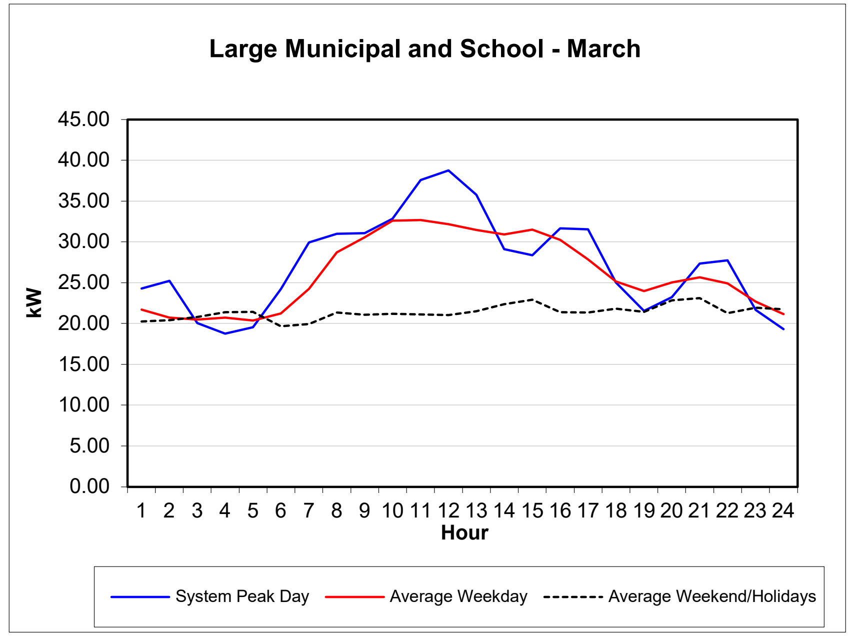
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	12.5173	14.6684	16.6752
2	12.6958	14.6481	15.9112
3	12.7345	14.7331	15.2979
4	12.8351	15.1126	14.5930
5	13.9622	15.2394	14.7565
6	17.3191	15.6452	15.0913
7	18.8684	17.9934	16.8634
8	18.9580	20.7078	17.2267
9	20.9837	22.4766	15.9234
10	23.6288	23.8834	14.9750
11	26.7995	23.8323	13.9125
12	25.4092	22.8397	14.7937
13	22.0443	22.1664	15.7916
14	21.4552	21.5394	15.7415
15	21.5421	21.8143	14.5484
16	23.4138	21.1238	13.6544
17	23.3690	19.2389	14.3990
18	20.2654	17.6145	15.0671
19	17.4848	17.4637	16.0730
20	17.0408	17.6329	15.5735
21	18.1208	17.3296	14.3311
22	20.1803	16.5918	14.9392
23	19.2552	15.7875	15.9099
24	16.0864	15.0682	15.9347



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.3

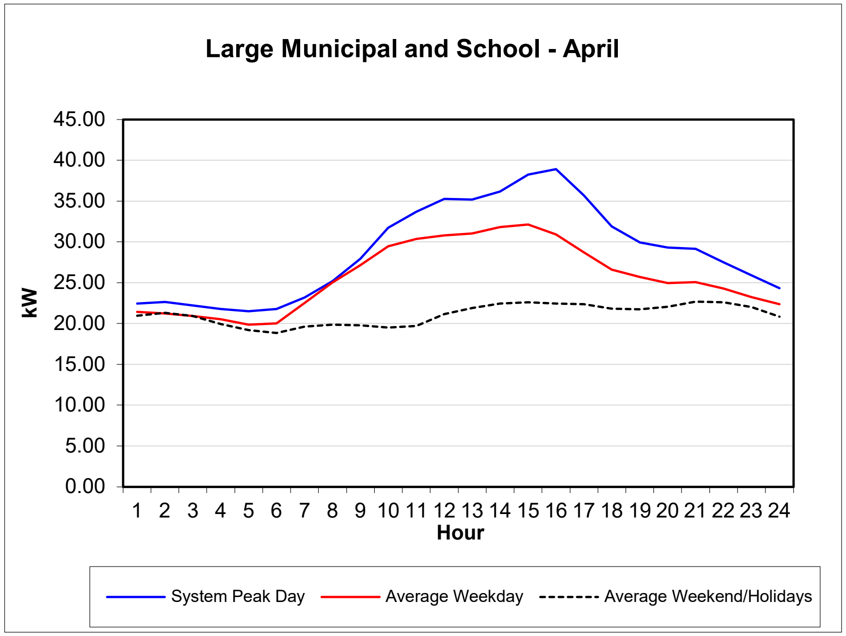
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	24.2931	21.7003	20.2327
2	25.2064	20.7291	20.4188
3	20.0595	20.4707	20.7987
4	18.7777	20.6946	21.3877
5	19.5240	20.3883	21.4054
6	24.1843	21.2280	19.6889
7	29.9433	24.2235	19.9160
8	30.9977	28.7210	21.3439
9	31.0790	30.5709	21.0530
10	32.8321	32.5724	21.2019
11	37.5722	32.6827	21.1088
12	38.7807	32.1748	21.0188
13	35.7748	31.4643	21.5166
14	29.1015	30.8999	22.3562
15	28.3644	31.4925	22.9274
16	31.6522	30.2240	21.3779
17	31.5207	27.8428	21.3337
18	25.0443	25.1330	21.8230
19	21.5522	23.9728	21.4199
20	23.2197	25.0283	22.8245
21	27.3228	25.6400	23.1084
22	27.7176	24.8994	21.2648
23	21.6423	22.6583	21.9134
24	19.3176	21.1269	21.7317



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.4

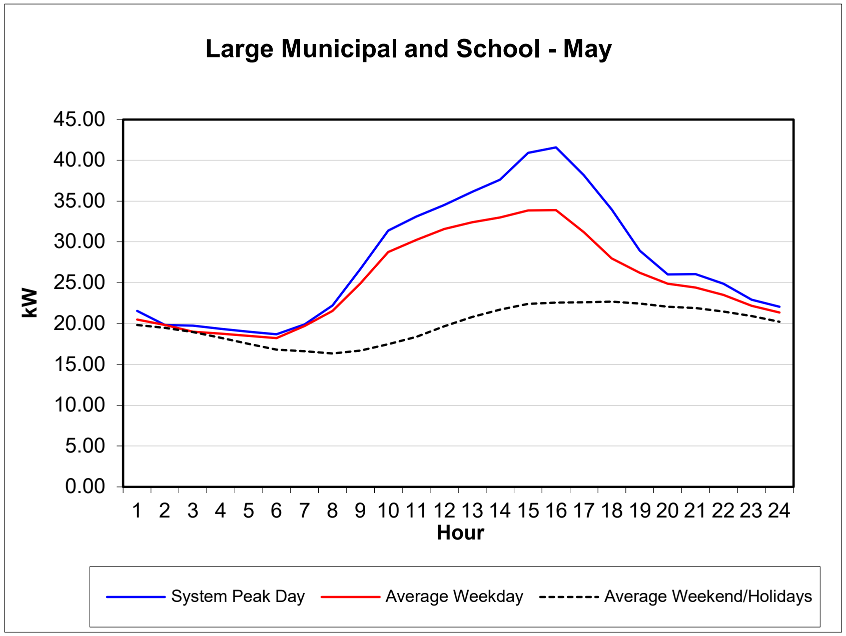
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	22.4334	21.4361	20.9713
2	22.6245	21.2453	21.3045
3	22.2258	20.9333	20.9043
4	21.7735	20.5318	19.9266
5	21.5006	19.8853	19.1814
6	21.7977	20.0120	18.8576
7	23.2081	22.5258	19.6157
8	25.1940	25.0207	19.8546
9	27.9375	27.1389	19.7754
10	31.7173	29.4658	19.5106
11	33.6999	30.3571	19.6960
12	35.2571	30.7891	21.1322
13	35.2044	31.0126	21.8818
14	36.1571	31.8250	22.4511
15	38.2367	32.1529	22.6066
16	38.9153	30.9187	22.4447
17	35.7113	28.7210	22.3494
18	31.8894	26.5956	21.8153
19	29.9417	25.7074	21.7327
20	29.3056	24.9552	22.0532
21	29.1593	25.0761	22.6710
22	27.4911	24.2781	22.5832
23	25.9089	23.2232	21.9959
24	24.3277	22.3711	20.8378



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.5

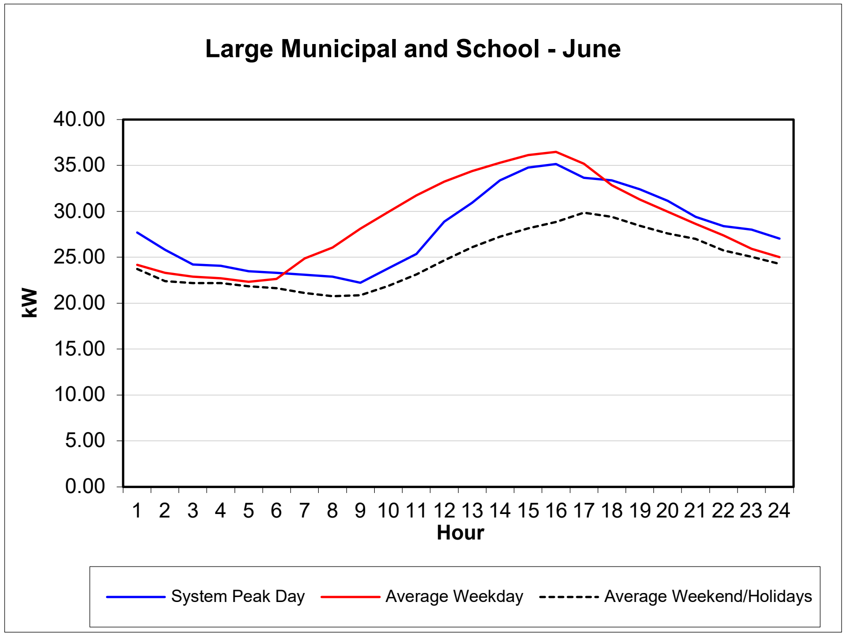
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	21.5566	20.4839	19.8112
2	19.8243	19.8401	19.4570
3	19.7583	18.9861	18.9704
4	19.3712	18.7852	18.2393
5	19.0215	18.5090	17.5002
6	18.6864	18.2022	16.7914
7	19.8857	19.7074	16.6024
8	22.2052	21.5391	16.3253
9	26.7021	24.9328	16.7079
10	31.3761	28.7557	17.4853
11	33.1149	30.2503	18.3734
12	34.5320	31.5831	19.6836
13	36.1187	32.4136	20.8110
14	37.6051	32.9887	21.7135
15	40.9197	33.8680	22.4257
16	41.5746	33.9182	22.5623
17	38.1865	31.1930	22.6258
18	33.9650	27.9739	22.6982
19	28.9370	26.2119	22.4430
20	26.0025	24.8962	22.0775
21	26.0483	24.3965	21.9084
22	24.9001	23.5081	21.4600
23	22.9243	22.1838	20.9423
24	22.0707	21.3685	20.2037



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.6

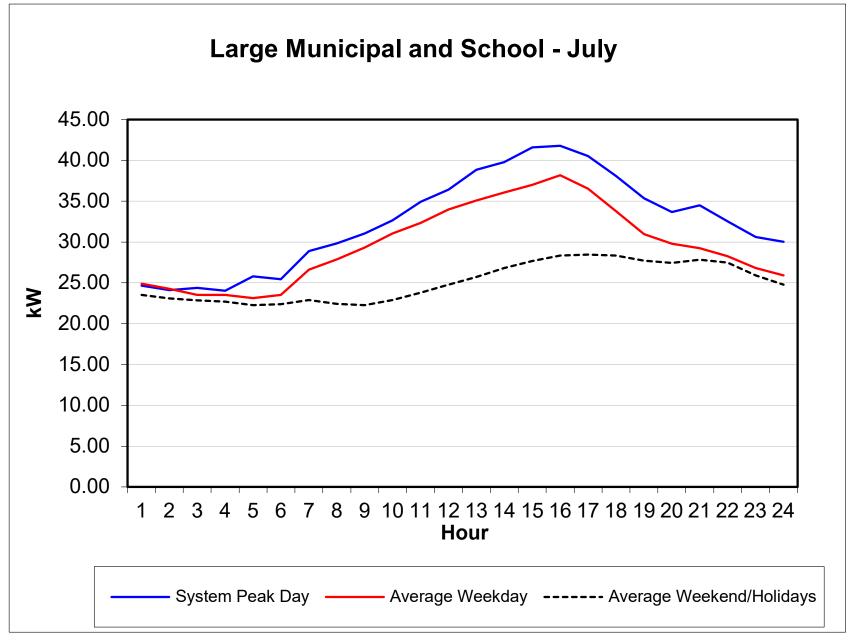
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	27.7163	24.1868	23.7407
2	25.8284	23.2921	22.4038
3	24.2291	22.8873	22.1820
4	24.0613	22.7160	22.1933
5	23.4883	22.3325	21.8486
6	23.3141	22.6514	21.6201
7	23.0958	24.8935	21.1066
8	22.8787	26.0738	20.7640
9	22.2302	28.1321	20.8647
10	23.7879	29.9293	21.8759
11	25.3609	31.7548	23.1178
12	28.8940	33.2504	24.6511
13	30.9399	34.3966	26.0908
14	33.3785	35.3120	27.2626
15	34.7795	36.1380	28.1373
16	35.1652	36.4767	28.8557
17	33.6458	35.1822	29.8444
18	33.3633	32.8630	29.4067
19	32.4170	31.2834	28.4253
20	31.1499	29.9525	27.5933
21	29.4031	28.6460	27.0192
22	28.3874	27.3834	25.7541
23	28.0002	25.9156	25.0621
24	27.0361	25.0200	24.2693



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.7

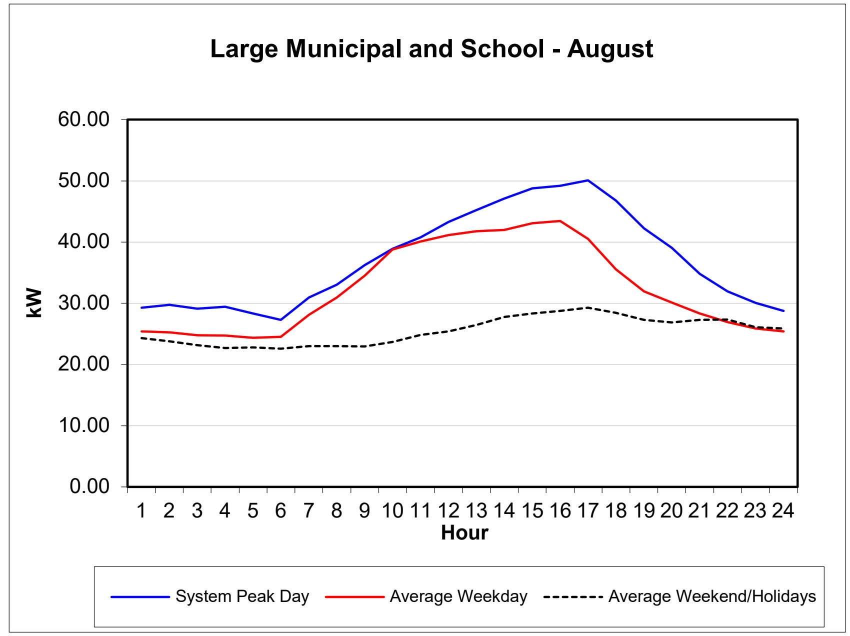
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	24.6590	24.8810	23.5352
2	24.0947	24.2772	23.0829
3	24.4029	23.5417	22.8563
4	24.0373	23.5211	22.7085
5	25.8137	23.1254	22.2587
6	25.4522	23.5432	22.3775
7	28.8812	26.6347	22.8912
8	29.8440	27.8944	22.4414
9	31.0595	29.3189	22.2515
10	32.6552	31.0639	22.9076
11	34.9296	32.3253	23.7814
12	36.4134	33.9958	24.7795
13	38.8693	35.0972	25.7203
14	39.7778	36.0564	26.8188
15	41.6156	37.0247	27.6814
16	41.7979	38.1603	28.3266
17	40.5429	36.5203	28.4662
18	38.1078	33.8122	28.3517
19	35.3526	30.9544	27.7362
20	33.6656	29.8045	27.4447
21	34.4941	29.2380	27.8470
22	32.5459	28.2806	27.4821
23	30.6176	26.8341	25.9196
24	30.0255	25.9333	24.7744



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.8

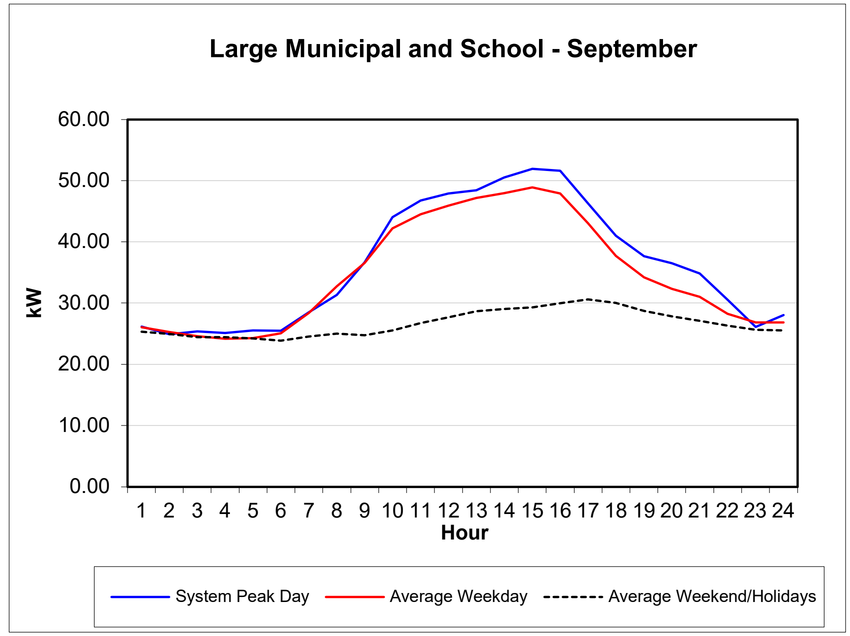
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	29.2814	25.4283	24.3092
2	29.7745	25.2397	23.7948
3	29.1164	24.8107	23.1843
4	29.4402	24.7263	22.6753
5	28.3285	24.3262	22.7901
6	27.2542	24.5195	22.5905
7	30.9496	28.1371	22.9881
8	33.0277	30.9356	23.0290
9	36.2386	34.5355	22.9359
10	38.9064	38.7790	23.6869
11	40.7747	40.0944	24.8612
12	43.2775	41.1533	25.4270
13	45.2499	41.7912	26.4374
14	47.0827	41.9724	27.7475
15	48.7561	43.1025	28.3423
16	49.2009	43.4062	28.7475
17	50.0525	40.5065	29.2670
18	46.7787	35.5489	28.4267
19	42.2416	31.9552	27.3107
20	39.0482	30.1069	26.8560
21	34.8024	28.3539	27.3016
22	31.9508	26.9460	27.3683
23	30.0536	25.8666	26.1159
24	28.7877	25.4160	25.8946



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.9

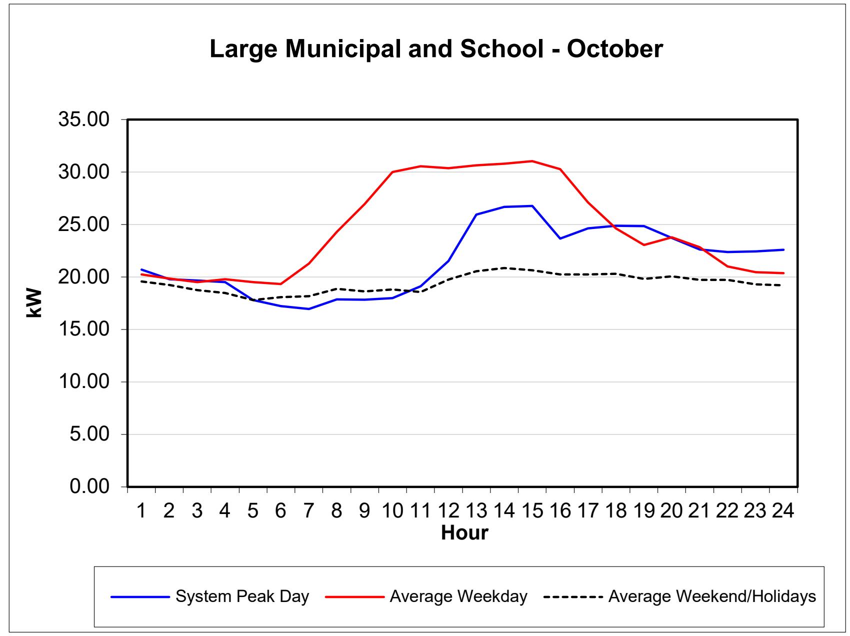
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	26.1567	26.0769	25.3158
2	24.8992	25.2817	24.9399
3	25.3604	24.5896	24.4217
4	25.1283	24.1865	24.4487
5	25.5388	24.2788	24.2096
6	25.4887	25.0421	23.8909
7	28.5027	28.3950	24.5628
8	31.3284	32.7270	24.9864
9	36.6600	36.5392	24.7443
10	44.0299	42.2070	25.5136
11	46.7594	44.4934	26.7434
12	47.9118	45.9405	27.6867
13	48.4079	47.1567	28.6722
14	50.5045	47.9793	29.0452
15	51.9450	48.9017	29.3006
16	51.5906	47.8922	29.9698
17	46.2855	43.0395	30.5952
18	41.0254	37.6946	30.0511
19	37.6722	34.2126	28.7328
20	36.5191	32.3260	27.8154
21	34.8106	31.0342	27.0738
22	30.5278	28.2718	26.3076
23	26.1277	26.8177	25.6550
24	28.0572	26.8306	25.5122



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.10

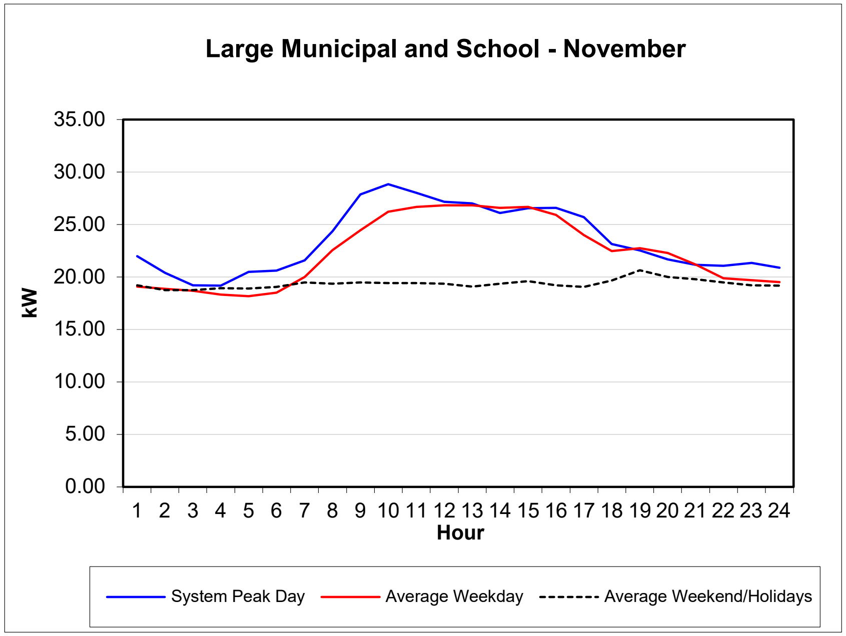
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	20.6930	20.2479	19.5566
2	19.7885	19.8431	19.2401
3	19.6446	19.4998	18.7368
4	19.5022	19.7745	18.4636
5	17.8000	19.4905	17.7984
6	17.2075	19.3348	18.0699
7	16.9448	21.2657	18.1631
8	17.8676	24.2760	18.8767
9	17.8198	26.9323	18.6048
10	17.9780	29.9881	18.8079
11	19.0939	30.5320	18.5691
12	21.5169	30.3601	19.7563
13	25.9359	30.6294	20.5368
14	26.6778	30.7794	20.8410
15	26.7522	31.0378	20.6264
16	23.6381	30.2633	20.2423
17	24.6126	27.0957	20.2230
18	24.8823	24.6102	20.2816
19	24.8303	23.0376	19.8153
20	23.7038	23.7650	20.0430
21	22.6003	22.8123	19.7259
22	22.3613	21.0035	19.7173
23	22.4251	20.4381	19.2925
24	22.5894	20.3598	19.2074



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.11

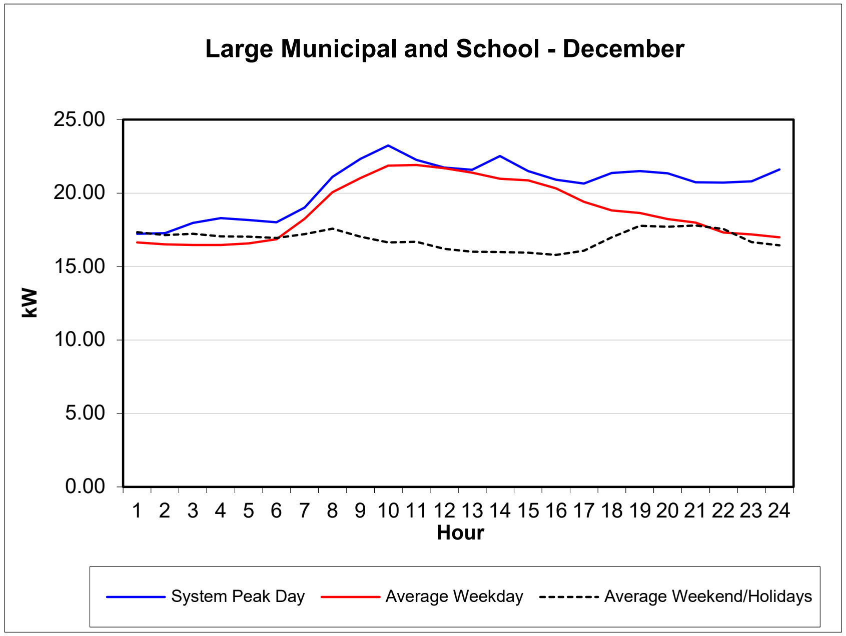
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	21.9749	19.0783	19.1962
2	20.3834	18.8728	18.7564
3	19.2066	18.6874	18.7444
4	19.1808	18.3165	18.9267
5	20.4740	18.1678	18.8938
6	20.6135	18.5158	19.0464
7	21.5868	20.0067	19.4629
8	24.3486	22.5626	19.3684
9	27.8530	24.4430	19.4753
10	28.8480	26.2135	19.4192
11	28.0272	26.6873	19.4055
12	27.1554	26.8202	19.3544
13	27.0007	26.8251	19.0819
14	26.0910	26.5951	19.3418
15	26.5371	26.6770	19.6012
16	26.5683	25.9174	19.2072
17	25.7107	23.9827	19.0498
18	23.1468	22.4766	19.6490
19	22.5144	22.7330	20.6220
20	21.6669	22.2790	20.0043
21	21.1559	21.1951	19.7673
22	21.0672	19.8644	19.4757
23	21.3442	19.6819	19.1947
24	20.8669	19.4970	19.1846



Southwestern Public Service Company
Hourly Load Profiles

Table E - 5.12

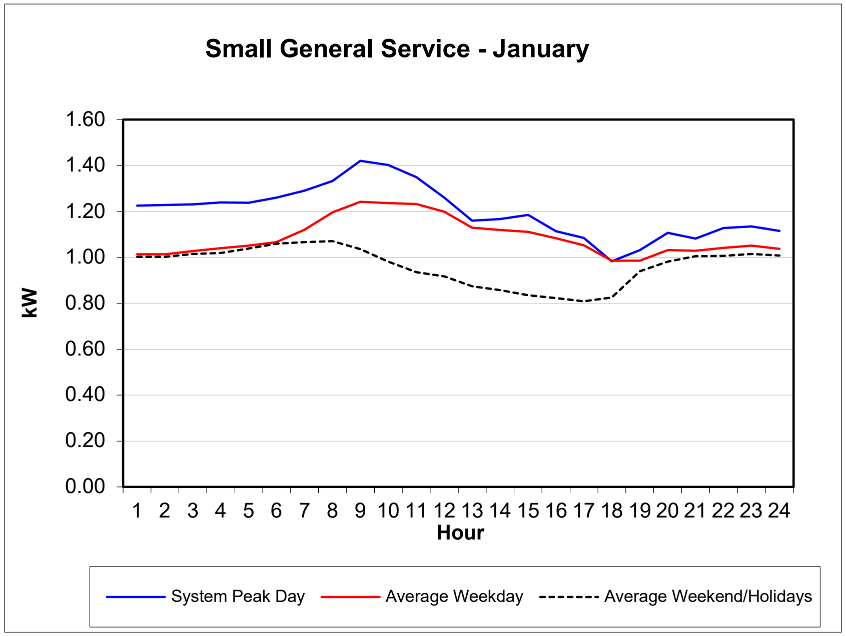
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.2240	16.6324	17.3330
2	17.2735	16.4984	17.1487
3	17.9733	16.4506	17.2215
4	18.2978	16.4634	17.0606
5	18.1598	16.5693	17.0252
6	18.0017	16.8579	16.9505
7	19.0170	18.2556	17.2072
8	21.1032	20.0537	17.5682
9	22.3300	21.0257	17.0230
10	23.2255	21.8564	16.6449
11	22.2626	21.9135	16.6825
12	21.7320	21.6934	16.1933
13	21.5869	21.3879	15.9977
14	22.5157	20.9733	15.9873
15	21.5019	20.8615	15.9515
16	20.9114	20.3085	15.7948
17	20.6363	19.4082	16.0820
18	21.3674	18.8137	16.9886
19	21.4900	18.6390	17.7605
20	21.3339	18.2249	17.7084
21	20.7253	17.9886	17.7952
22	20.7013	17.3193	17.5420
23	20.7938	17.1830	16.6661
24	21.5928	16.9861	16.4501



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.1

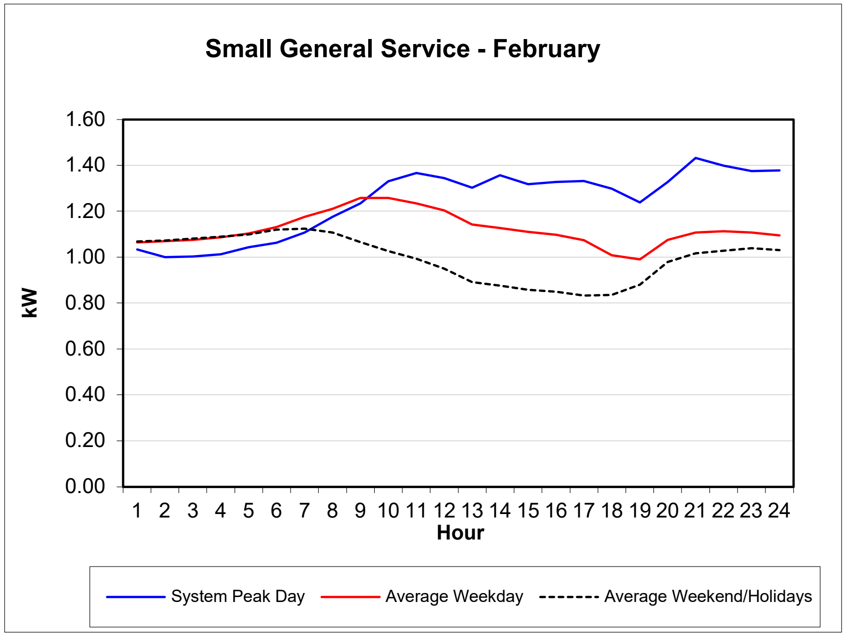
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.2249	1.0141	1.0017
2	1.2288	1.0135	1.0030
3	1.2307	1.0273	1.0143
4	1.2389	1.0397	1.0189
5	1.2377	1.0508	1.0386
6	1.2606	1.0667	1.0589
7	1.2907	1.1206	1.0669
8	1.3333	1.1959	1.0706
9	1.4202	1.2412	1.0352
10	1.4026	1.2359	0.9809
11	1.3496	1.2323	0.9361
12	1.2601	1.1986	0.9176
13	1.1592	1.1299	0.8748
14	1.1674	1.1189	0.8569
15	1.1853	1.1114	0.8346
16	1.1140	1.0838	0.8221
17	1.0841	1.0520	0.8086
18	0.9817	0.9857	0.8252
19	1.0322	0.9863	0.9396
20	1.1063	1.0318	0.9819
21	1.0818	1.0289	1.0057
22	1.1273	1.0411	1.0070
23	1.1342	1.0516	1.0154
24	1.1150	1.0378	1.0085



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.2

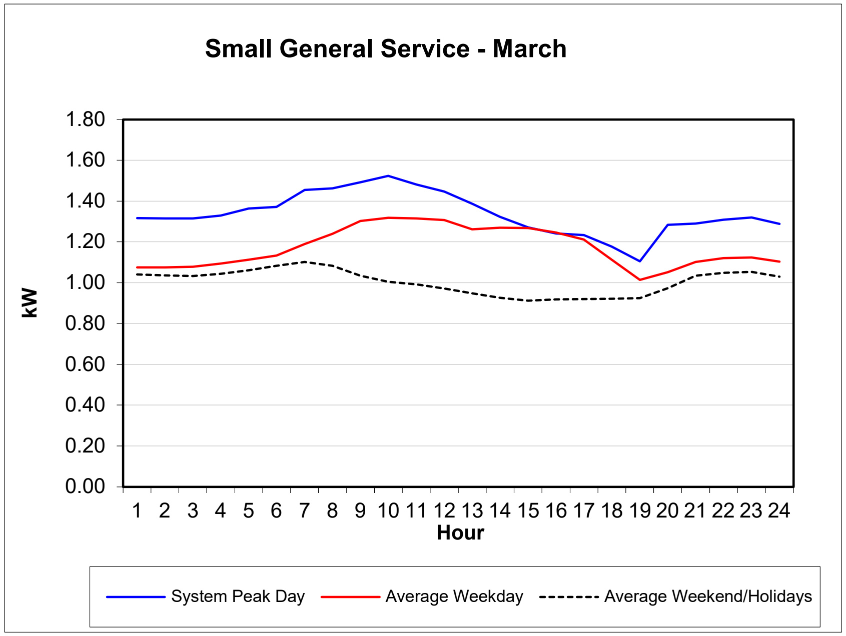
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0332	1.0642	1.0677
2	1.0002	1.0689	1.0723
3	1.0029	1.0754	1.0809
4	1.0128	1.0868	1.0893
5	1.0432	1.1028	1.0993
6	1.0623	1.1302	1.1199
7	1.1078	1.1748	1.1248
8	1.1755	1.2108	1.1066
9	1.2344	1.2573	1.0653
10	1.3297	1.2584	1.0262
11	1.3658	1.2336	0.9933
12	1.3441	1.2027	0.9493
13	1.3019	1.1427	0.8917
14	1.3563	1.1266	0.8751
15	1.3182	1.1098	0.8583
16	1.3274	1.0970	0.8487
17	1.3309	1.0738	0.8330
18	1.2982	1.0079	0.8359
19	1.2385	0.9902	0.8797
20	1.3272	1.0753	0.9792
21	1.4333	1.1069	1.0165
22	1.3978	1.1133	1.0279
23	1.3752	1.1073	1.0393
24	1.3773	1.0948	1.0302



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.3

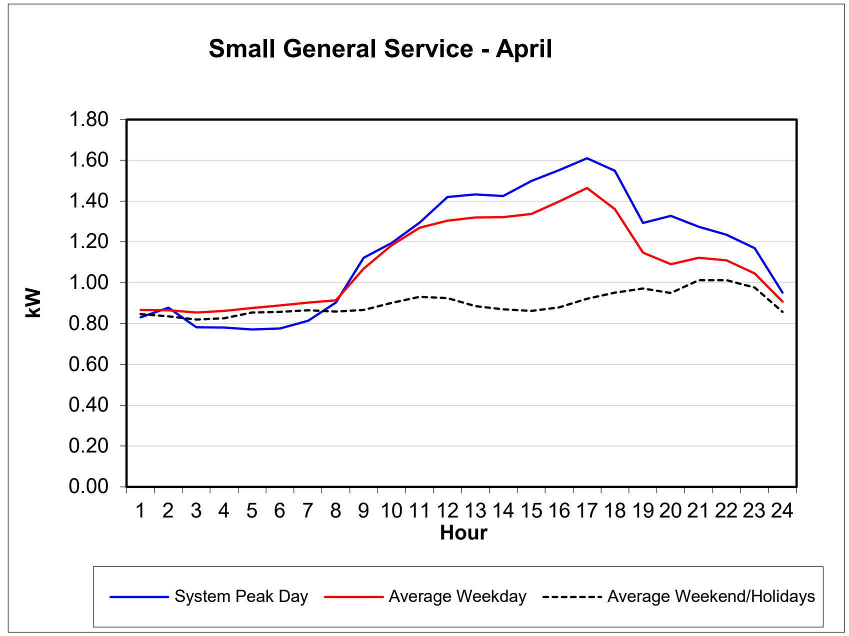
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.3159	1.0755	1.0397
2	1.3150	1.0742	1.0350
3	1.3146	1.0777	1.0321
4	1.3293	1.0934	1.0430
5	1.3632	1.1118	1.0615
6	1.3716	1.1328	1.0821
7	1.4544	1.1890	1.1022
8	1.4625	1.2393	1.0830
9	1.4913	1.3016	1.0343
10	1.5240	1.3188	1.0037
11	1.4803	1.3153	0.9917
12	1.4458	1.3074	0.9707
13	1.3866	1.2616	0.9486
14	1.3230	1.2700	0.9261
15	1.2709	1.2678	0.9117
16	1.2418	1.2458	0.9177
17	1.2327	1.2112	0.9203
18	1.1776	1.1129	0.9207
19	1.1053	1.0139	0.9240
20	1.2831	1.0507	0.9731
21	1.2894	1.1013	1.0334
22	1.3086	1.1211	1.0485
23	1.3200	1.1240	1.0534
24	1.2888	1.1037	1.0301



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.4

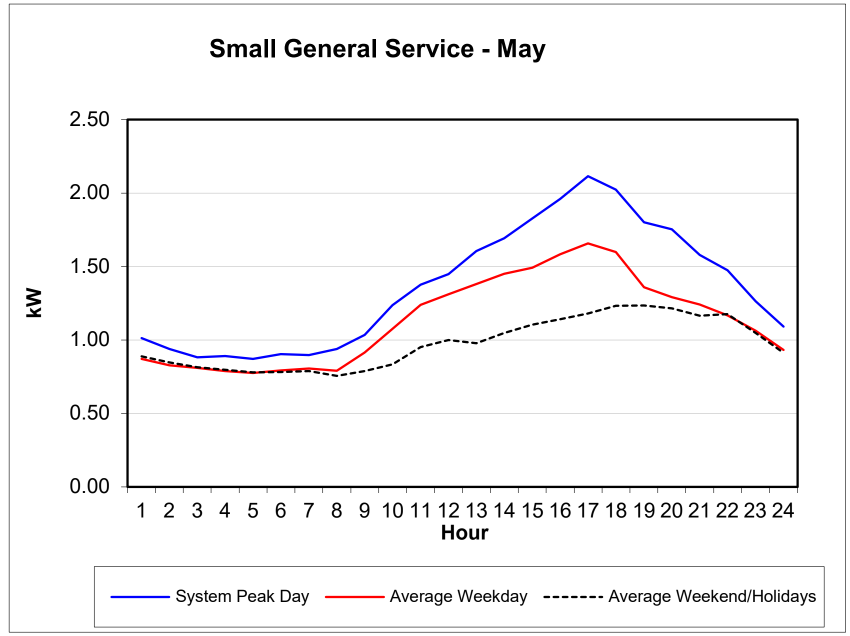
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8306	0.8673	0.8466
2	0.8776	0.8649	0.8356
3	0.7818	0.8547	0.8193
4	0.7803	0.8612	0.8253
5	0.7719	0.8761	0.8542
6	0.7753	0.8888	0.8574
7	0.8140	0.9034	0.8651
8	0.9024	0.9133	0.8582
9	1.1230	1.0684	0.8666
10	1.1941	1.1831	0.9011
11	1.2946	1.2697	0.9314
12	1.4197	1.3048	0.9242
13	1.4333	1.3195	0.8853
14	1.4256	1.3210	0.8698
15	1.4978	1.3376	0.8617
16	1.5514	1.3977	0.8794
17	1.6100	1.4645	0.9220
18	1.5485	1.3610	0.9511
19	1.2924	1.1478	0.9723
20	1.3271	1.0901	0.9505
21	1.2750	1.1227	1.0120
22	1.2358	1.1093	1.0124
23	1.1686	1.0454	0.9758
24	0.9520	0.9073	0.8570



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.5

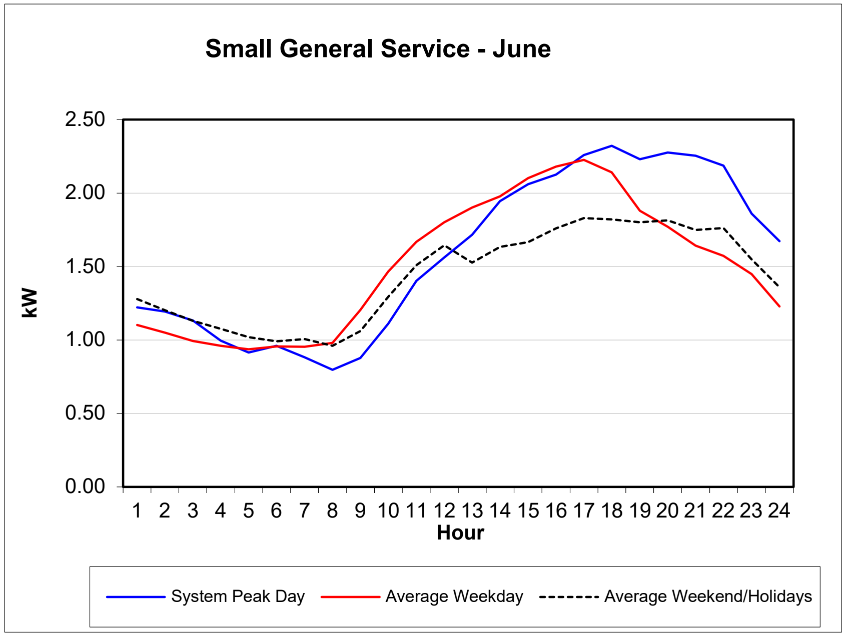
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0134	0.8710	0.8873
2	0.9375	0.8275	0.8465
3	0.8807	0.8093	0.8145
4	0.8901	0.7886	0.7976
5	0.8706	0.7750	0.7797
6	0.9040	0.7934	0.7815
7	0.8966	0.8056	0.7884
8	0.9387	0.7905	0.7549
9	1.0334	0.9136	0.7876
10	1.2367	1.0762	0.8341
11	1.3769	1.2384	0.9518
12	1.4483	1.3110	0.9997
13	1.6049	1.3806	0.9786
14	1.6925	1.4496	1.0465
15	1.8258	1.4924	1.1034
16	1.9604	1.5824	1.1406
17	2.1137	1.6567	1.1795
18	2.0221	1.5982	1.2318
19	1.8017	1.3591	1.2344
20	1.7530	1.2912	1.2154
21	1.5790	1.2411	1.1639
22	1.4750	1.1679	1.1767
23	1.2618	1.0627	1.0466
24	1.0914	0.9326	0.9124



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.6

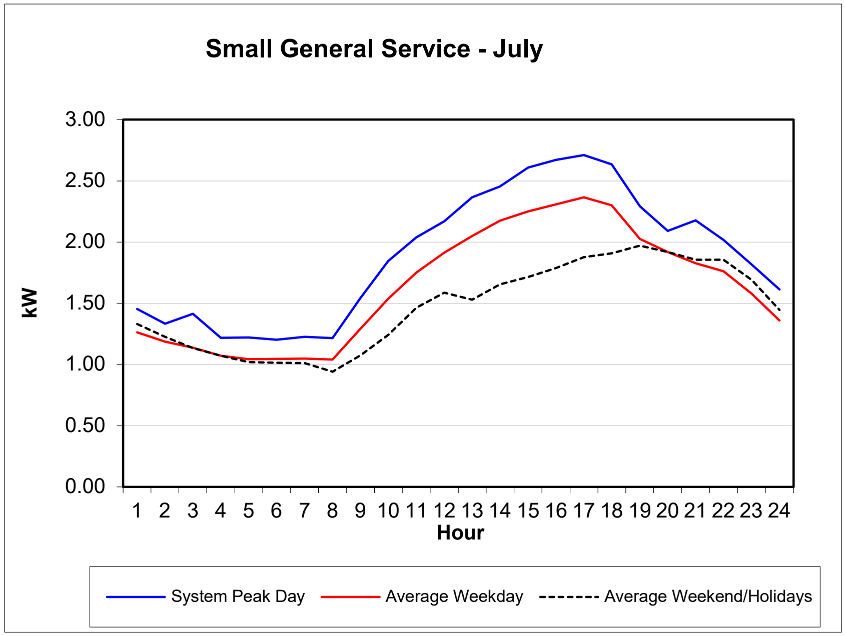
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.2212	1.1022	1.2777
2	1.1942	1.0492	1.2024
3	1.1318	0.9928	1.1309
4	0.9945	0.9612	1.0759
5	0.9141	0.9358	1.0202
6	0.9604	0.9558	0.9912
7	0.8824	0.9540	1.0054
8	0.7970	0.9800	0.9604
9	0.8770	1.2052	1.0602
10	1.1097	1.4667	1.2942
11	1.4036	1.6693	1.5096
12	1.5615	1.8018	1.6436
13	1.7157	1.9023	1.5259
14	1.9458	1.9771	1.6339
15	2.0601	2.1016	1.6663
16	2.1251	2.1811	1.7608
17	2.2590	2.2260	1.8289
18	2.3205	2.1405	1.8197
19	2.2292	1.8805	1.8009
20	2.2768	1.7696	1.8152
21	2.2547	1.6422	1.7497
22	2.1862	1.5722	1.7623
23	1.8609	1.4492	1.5481
24	1.6717	1.2289	1.3581



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.7

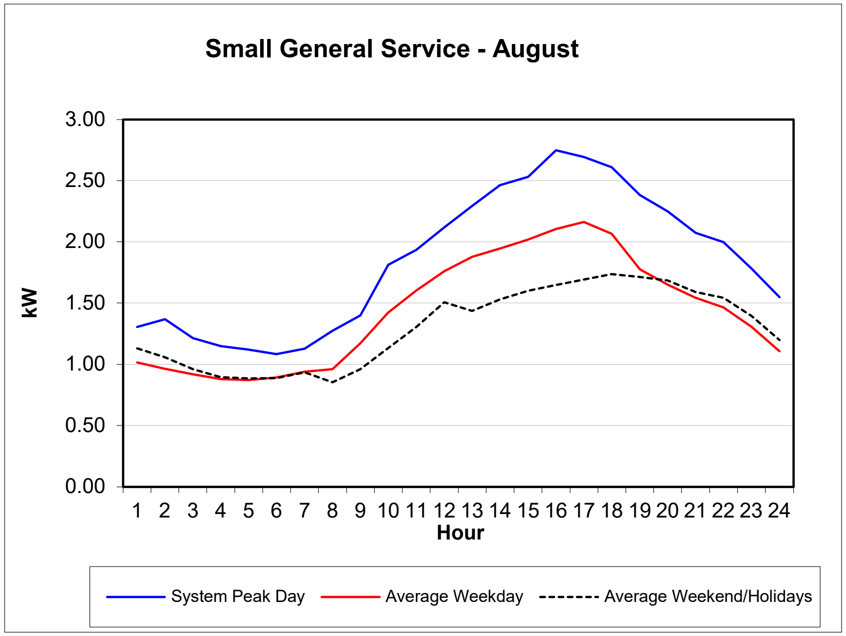
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.4544	1.2635	1.3306
2	1.3328	1.1860	1.2275
3	1.4151	1.1362	1.1338
4	1.2175	1.0711	1.0727
5	1.2218	1.0442	1.0191
6	1.2014	1.0457	1.0152
7	1.2265	1.0485	1.0113
8	1.2155	1.0400	0.9407
9	1.5435	1.2915	1.0733
10	1.8465	1.5367	1.2421
11	2.0401	1.7502	1.4644
12	2.1702	1.9143	1.5873
13	2.3653	2.0501	1.5298
14	2.4537	2.1742	1.6558
15	2.6098	2.2513	1.7153
16	2.6727	2.3087	1.7889
17	2.7108	2.3657	1.8772
18	2.6350	2.3003	1.9085
19	2.2914	2.0269	1.9698
20	2.0907	1.9199	1.9175
21	2.1768	1.8277	1.8561
22	2.0184	1.7633	1.8568
23	1.8173	1.5778	1.6913
24	1.6140	1.3587	1.4459



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.8

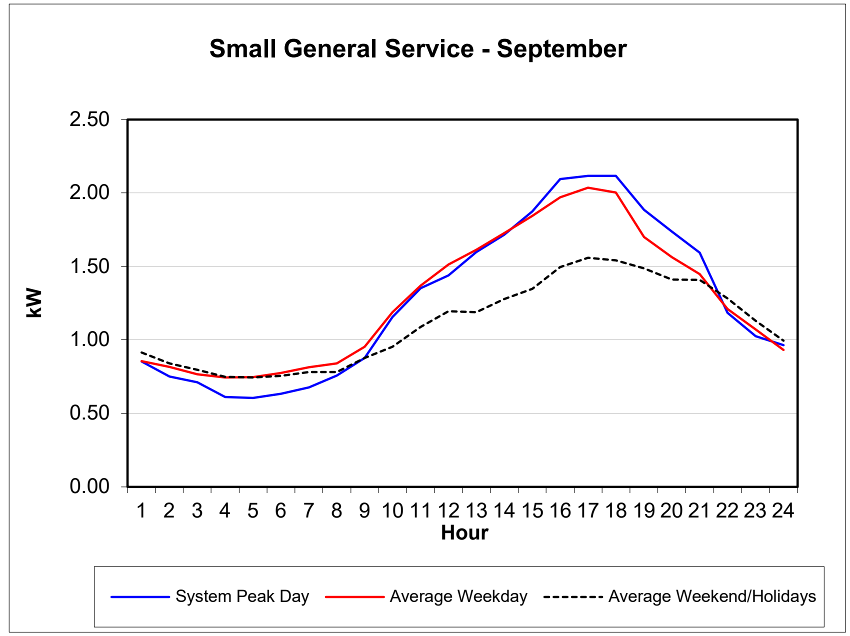
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.3056	1.0138	1.1290
2	1.3682	0.9614	1.0565
3	1.2135	0.9183	0.9610
4	1.1484	0.8795	0.8936
5	1.1188	0.8722	0.8849
6	1.0845	0.8927	0.8861
7	1.1277	0.9403	0.9340
8	1.2742	0.9604	0.8535
9	1.3992	1.1706	0.9593
10	1.8116	1.4237	1.1331
11	1.9352	1.6030	1.3053
12	2.1172	1.7601	1.5061
13	2.2941	1.8773	1.4351
14	2.4639	1.9443	1.5299
15	2.5297	2.0193	1.6013
16	2.7478	2.1035	1.6472
17	2.6941	2.1631	1.6923
18	2.6097	2.0659	1.7387
19	2.3817	1.7743	1.7127
20	2.2480	1.6495	1.6830
21	2.0724	1.5435	1.5896
22	1.9977	1.4632	1.5423
23	1.7804	1.3039	1.3950
24	1.5487	1.1067	1.1974



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.9

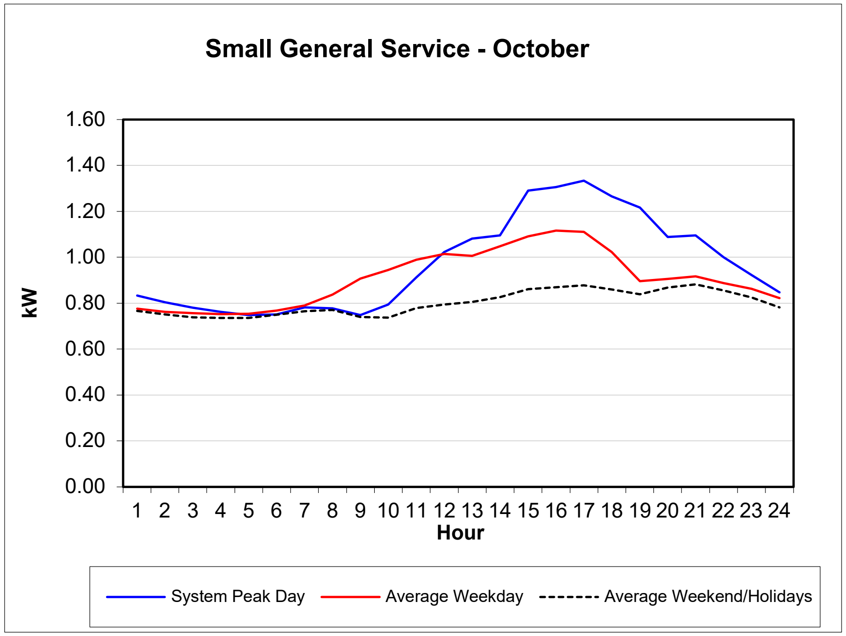
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8520	0.8545	0.9147
2	0.7503	0.8155	0.8404
3	0.7120	0.7663	0.7964
4	0.6115	0.7436	0.7474
5	0.6042	0.7453	0.7454
6	0.6322	0.7748	0.7544
7	0.6767	0.8126	0.7812
8	0.7561	0.8388	0.7813
9	0.8773	0.9538	0.8763
10	1.1546	1.1889	0.9532
11	1.3519	1.3689	1.0879
12	1.4386	1.5122	1.1952
13	1.5967	1.6137	1.1886
14	1.7156	1.7254	1.2776
15	1.8736	1.8439	1.3471
16	2.0939	1.9710	1.4959
17	2.1166	2.0369	1.5596
18	2.1173	2.0016	1.5416
19	1.8854	1.6990	1.4875
20	1.7377	1.5625	1.4098
21	1.5929	1.4464	1.4091
22	1.1836	1.2108	1.2818
23	1.0258	1.0712	1.1284
24	0.9648	0.9312	0.9940



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.10

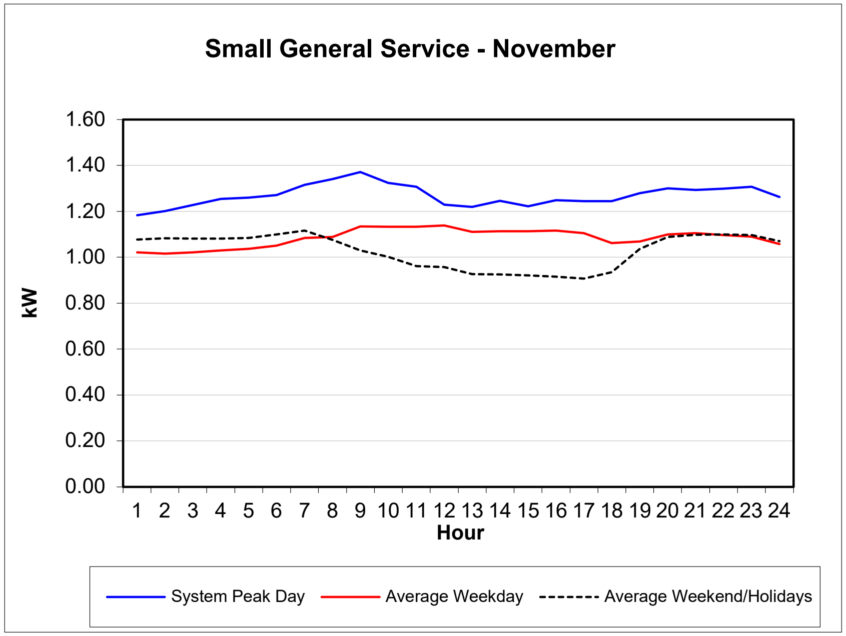
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8326	0.7761	0.7667
2	0.8042	0.7620	0.7512
3	0.7801	0.7561	0.7389
4	0.7619	0.7520	0.7353
5	0.7481	0.7539	0.7358
6	0.7503	0.7682	0.7495
7	0.7810	0.7900	0.7647
8	0.7773	0.8375	0.7701
9	0.7483	0.9066	0.7391
10	0.7946	0.9451	0.7367
11	0.9120	0.9886	0.7784
12	1.0228	1.0145	0.7943
13	1.0814	1.0057	0.8058
14	1.0957	1.0478	0.8267
15	1.2902	1.0915	0.8608
16	1.3057	1.1164	0.8694
17	1.3341	1.1112	0.8778
18	1.2655	1.0232	0.8592
19	1.2169	0.8955	0.8385
20	1.0889	0.9052	0.8678
21	1.0951	0.9168	0.8821
22	1.0011	0.8880	0.8559
23	0.9229	0.8619	0.8251
24	0.8474	0.8223	0.7818



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.11

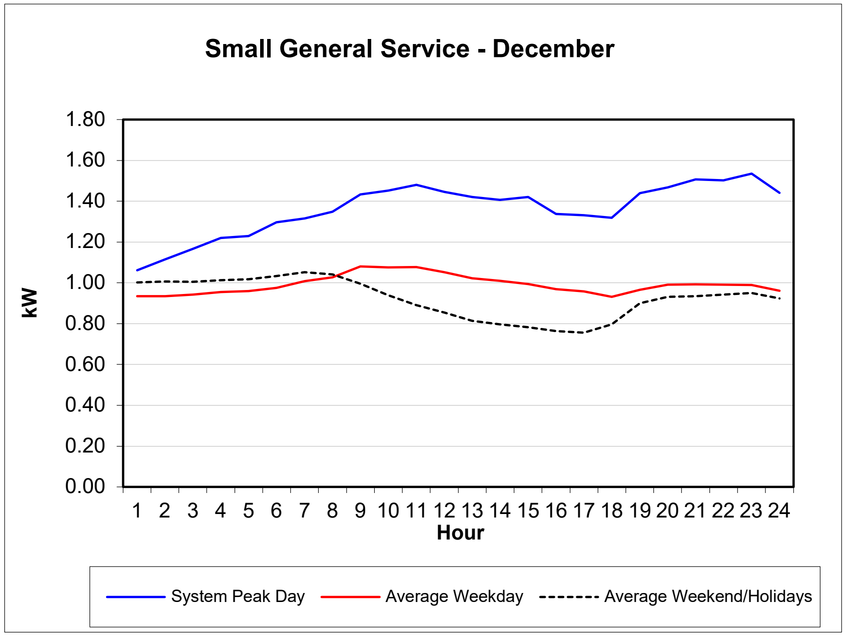
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1830	1.0222	1.0779
2	1.2012	1.0161	1.0828
3	1.2277	1.0217	1.0809
4	1.2545	1.0296	1.0821
5	1.2601	1.0373	1.0843
6	1.2712	1.0513	1.0989
7	1.3152	1.0838	1.1163
8	1.3407	1.0879	1.0761
9	1.3708	1.1343	1.0295
10	1.3243	1.1324	1.0021
11	1.3078	1.1328	0.9617
12	1.2291	1.1383	0.9581
13	1.2194	1.1101	0.9270
14	1.2464	1.1134	0.9250
15	1.2228	1.1141	0.9219
16	1.2491	1.1169	0.9161
17	1.2448	1.1048	0.9073
18	1.2447	1.0620	0.9348
19	1.2792	1.0693	1.0363
20	1.3002	1.0993	1.0889
21	1.2939	1.1054	1.0978
22	1.2994	1.0969	1.1000
23	1.3072	1.0893	1.0973
24	1.2633	1.0573	1.0705



Southwestern Public Service Company
Hourly Load Profiles

Table E - 6.12

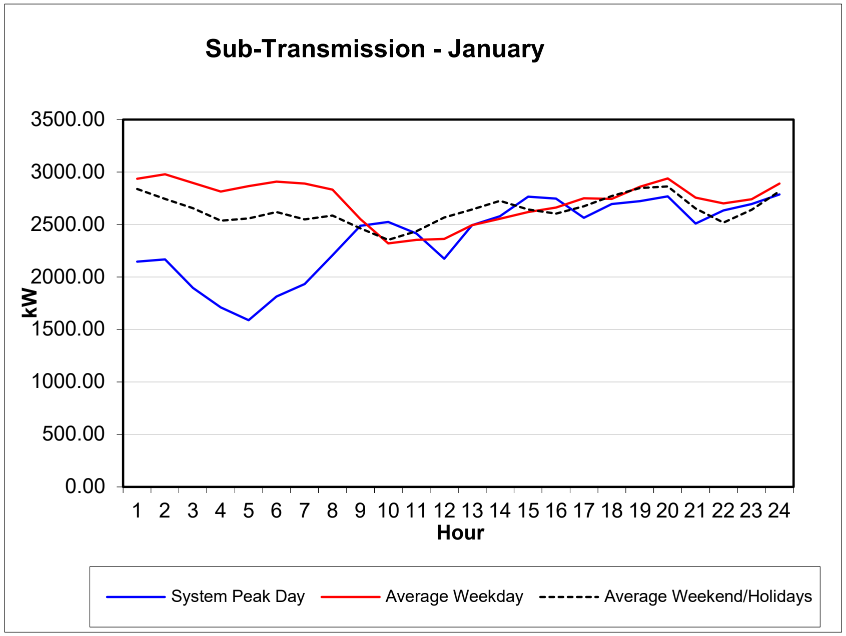
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.0606	0.9350	1.0023
2	1.1151	0.9347	1.0062
3	1.1670	0.9424	1.0059
4	1.2193	0.9545	1.0137
5	1.2302	0.9598	1.0184
6	1.2975	0.9751	1.0332
7	1.3165	1.0082	1.0513
8	1.3487	1.0272	1.0415
9	1.4327	1.0796	0.9961
10	1.4521	1.0754	0.9399
11	1.4800	1.0779	0.8901
12	1.4451	1.0524	0.8543
13	1.4201	1.0217	0.8143
14	1.4073	1.0093	0.7975
15	1.4206	0.9944	0.7823
16	1.3380	0.9688	0.7643
17	1.3317	0.9579	0.7558
18	1.3192	0.9306	0.7969
19	1.4402	0.9664	0.8997
20	1.4679	0.9916	0.9323
21	1.5063	0.9930	0.9346
22	1.5026	0.9910	0.9417
23	1.5346	0.9893	0.9509
24	1.4413	0.9607	0.9245



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.1

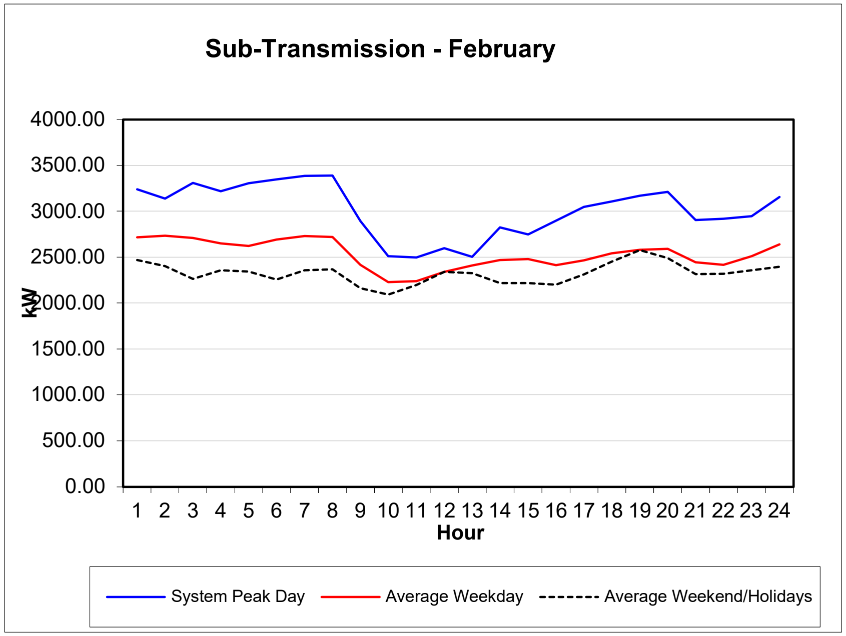
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2148.4458	2937.7956	2840.5885
2	2170.0179	2976.9621	2745.8478
3	1897.8881	2897.5019	2656.0252
4	1710.1762	2815.9495	2538.7274
5	1588.3346	2866.3696	2559.4963
6	1814.6485	2909.5970	2619.6278
7	1934.6554	2890.0482	2550.6207
8	2208.0947	2833.2992	2587.5416
9	2487.7802	2551.5136	2463.2903
10	2526.1018	2320.5271	2351.8884
11	2415.7737	2355.3649	2435.5049
12	2175.8972	2364.0285	2568.4468
13	2494.0166	2494.1150	2643.8703
14	2579.5633	2555.9102	2727.7153
15	2766.5716	2619.4418	2644.3533
16	2747.1476	2661.3910	2604.6308
17	2564.9624	2749.6498	2675.7491
18	2697.3120	2744.5819	2772.4501
19	2724.1801	2862.2120	2848.4328
20	2769.3913	2938.6182	2862.9509
21	2509.2239	2757.2290	2654.2068
22	2634.2683	2701.0012	2520.7632
23	2694.8612	2741.2344	2640.2741
24	2784.7749	2891.5929	2818.4286



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.2

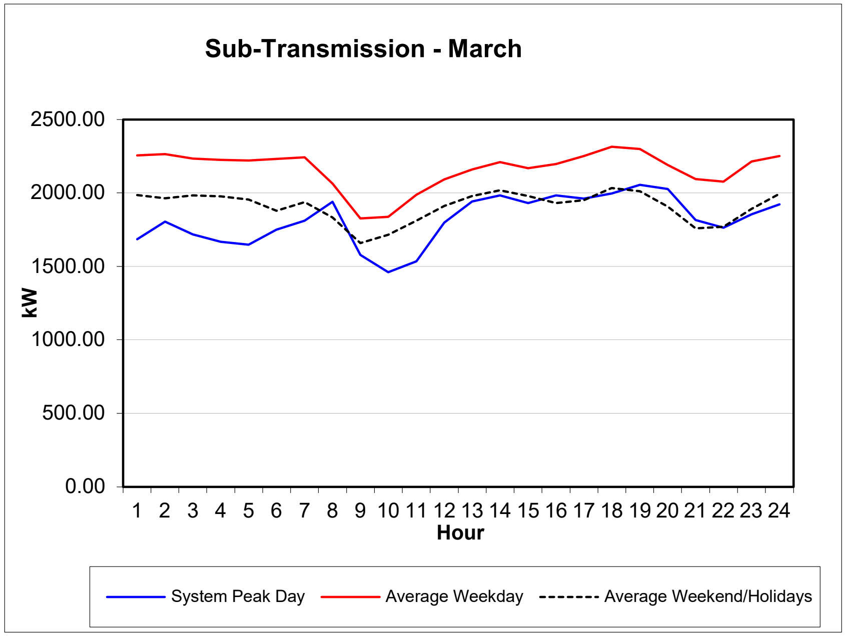
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3239.5041	2714.5564	2469.3521
2	3138.0925	2733.7450	2403.4894
3	3309.0731	2708.6381	2263.6509
4	3217.9948	2650.9605	2357.5814
5	3304.4661	2621.0369	2342.1024
6	3346.3079	2689.9934	2254.6851
7	3383.6432	2729.5471	2358.3050
8	3388.5284	2719.2357	2366.0994
9	2892.3497	2414.8626	2162.3558
10	2508.8926	2227.9039	2094.8577
11	2496.2931	2237.0643	2197.4126
12	2597.0336	2339.6942	2338.7115
13	2503.8348	2409.9817	2324.7937
14	2823.0022	2467.3970	2218.7681
15	2746.8492	2480.0959	2216.9596
16	2896.5425	2414.5220	2201.9519
17	3047.9368	2466.1815	2313.3325
18	3104.8835	2540.9546	2451.1468
19	3168.1979	2581.1237	2579.1657
20	3209.3400	2590.8721	2490.2590
21	2903.8228	2445.7039	2315.6159
22	2918.8548	2415.9710	2317.7676
23	2946.2221	2508.8631	2357.9682
24	3154.6499	2640.4766	2394.3156



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.3

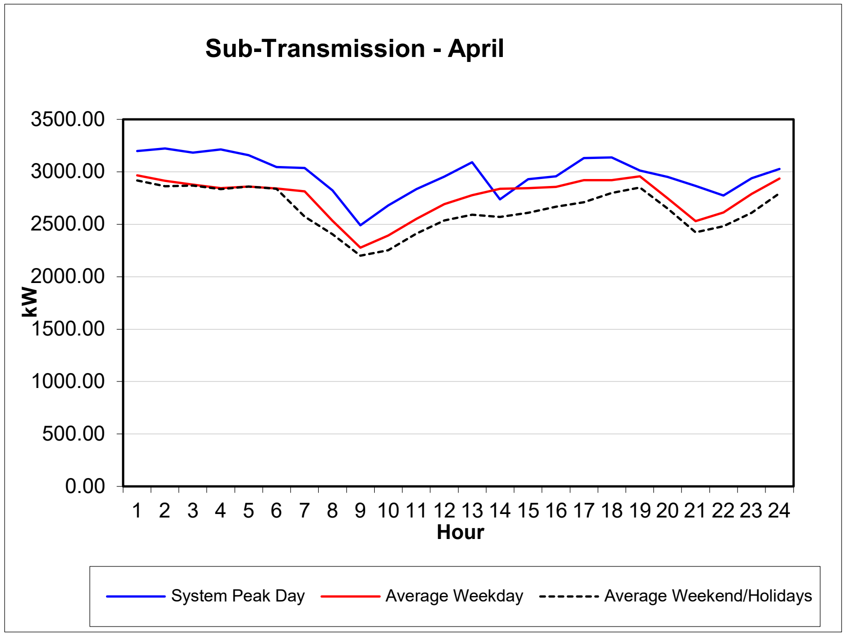
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1685.6700	2256.0420	1985.2083
2	1805.1692	2264.4869	1963.7435
3	1717.0894	2233.3791	1983.9120
4	1667.1334	2224.7166	1976.0684
5	1647.6007	2220.8752	1954.7991
6	1750.6802	2230.8385	1879.3179
7	1810.8093	2242.5963	1937.1346
8	1938.8512	2064.0878	1832.1368
9	1578.6617	1827.2634	1658.4410
10	1459.8939	1836.7195	1715.4451
11	1535.4730	1988.0426	1810.0888
12	1797.0189	2092.3992	1910.8803
13	1941.2470	2158.5893	1978.5900
14	1982.4371	2210.1312	2018.6236
15	1931.1985	2167.7236	1978.4024
16	1982.7498	2195.9206	1930.4465
17	1961.4796	2250.1235	1949.9194
18	1995.8733	2314.8274	2033.7801
19	2056.2687	2299.8409	2012.2299
20	2026.3337	2189.3027	1907.8806
21	1815.9264	2093.5919	1758.8425
22	1762.9445	2077.6530	1768.8432
23	1854.4847	2213.6515	1890.7169
24	1923.1858	2251.5744	1993.7924



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.4

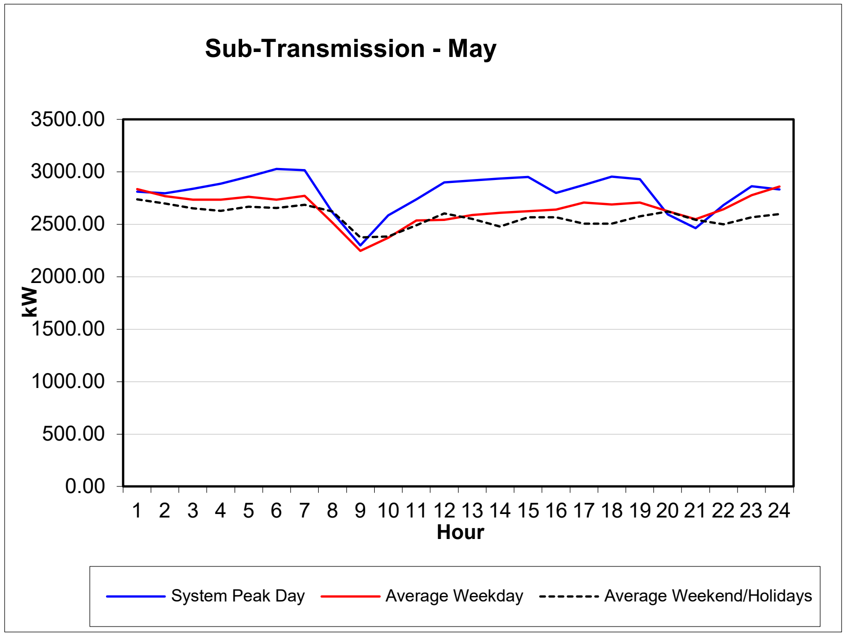
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3198.5634	2967.2613	2916.5890
2	3223.0766	2912.6039	2861.2753
3	3181.5293	2877.9420	2868.1043
4	3212.8242	2843.4216	2835.2353
5	3158.5376	2859.3714	2859.1655
6	3044.3664	2841.0894	2838.9927
7	3036.7706	2813.6163	2573.3966
8	2822.3888	2532.4439	2404.8035
9	2491.4503	2276.2845	2201.3284
10	2679.9892	2391.1743	2251.0736
11	2835.7853	2551.1137	2409.9048
12	2953.8982	2692.4116	2536.2442
13	3089.7090	2777.8081	2591.7263
14	2735.6167	2836.4872	2570.1340
15	2929.9152	2845.3292	2609.3632
16	2956.2606	2856.8830	2665.9986
17	3131.6094	2921.3110	2708.9160
18	3136.2201	2918.9712	2797.0843
19	3012.3739	2955.5451	2850.6150
20	2951.3767	2746.3479	2649.8520
21	2864.5927	2530.1795	2423.0211
22	2772.7202	2610.8665	2481.9970
23	2937.7754	2789.8009	2607.8223
24	3025.7548	2936.8379	2794.9172



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.5

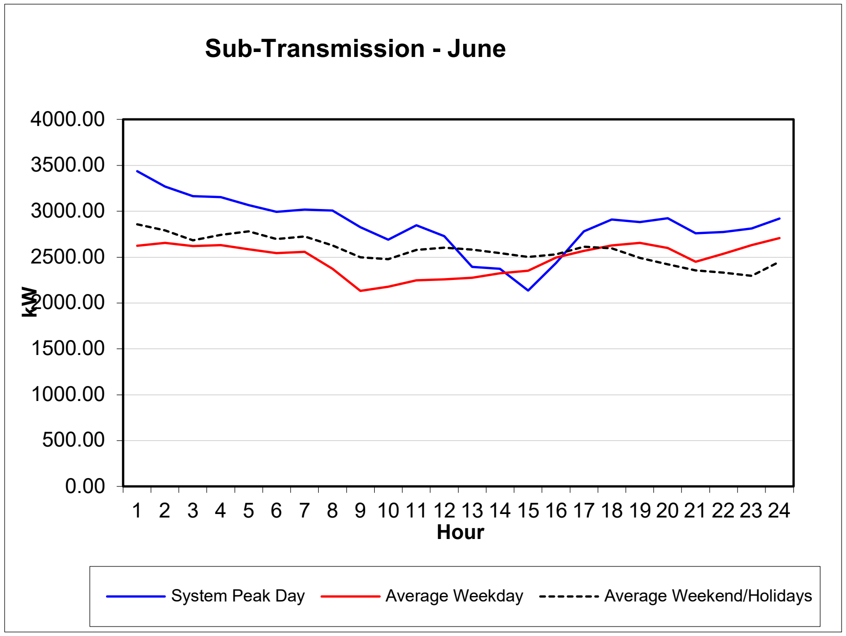
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2810.1208	2834.7263	2737.8035
2	2796.3985	2769.5341	2698.9093
3	2836.7901	2734.7323	2653.3919
4	2888.1008	2735.3060	2627.6868
5	2955.2361	2760.7073	2668.5410
6	3028.4208	2734.4039	2655.5612
7	3014.1434	2770.3448	2684.6649
8	2611.3849	2514.1528	2621.0660
9	2299.0700	2246.7434	2374.3653
10	2585.0994	2372.7037	2383.7304
11	2738.2911	2535.5218	2489.2445
12	2898.9365	2542.3760	2604.3271
13	2917.8182	2588.7804	2552.9937
14	2935.6536	2608.5314	2479.2433
15	2949.8986	2625.4126	2568.1473
16	2799.6617	2638.6574	2565.3182
17	2873.9504	2706.0522	2505.9647
18	2954.1411	2687.6878	2504.6002
19	2930.4046	2707.1186	2577.3949
20	2595.0044	2625.1561	2620.4456
21	2464.2424	2549.4294	2542.5571
22	2682.9323	2641.5578	2500.9812
23	2862.2348	2776.6823	2567.8959
24	2831.7496	2859.4550	2596.3215



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.6

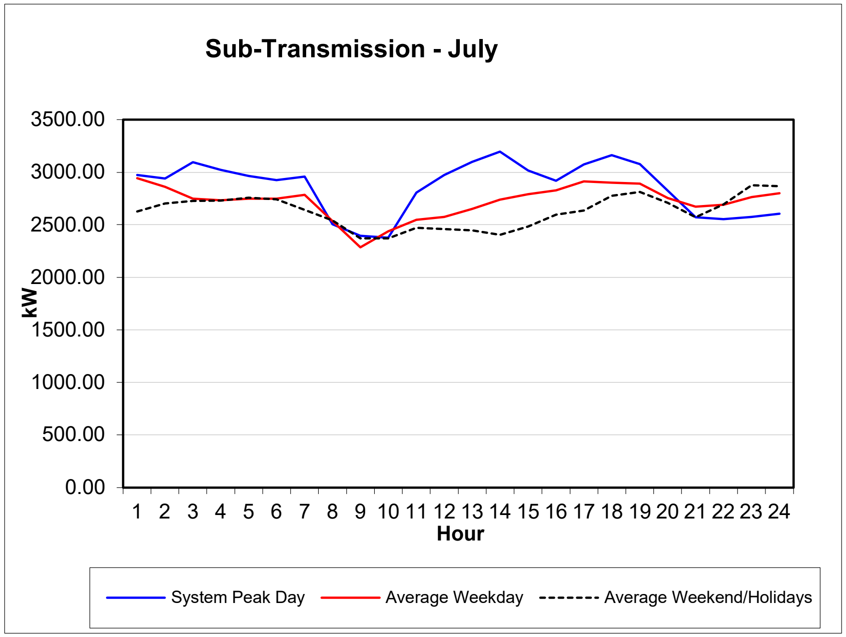
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3434.5105	2622.0954	2857.8584
2	3268.6635	2656.3041	2791.2513
3	3165.6164	2621.2696	2684.2041
4	3151.9978	2632.1945	2741.5190
5	3066.4660	2584.9363	2779.5670
6	2993.7367	2542.7260	2695.5953
7	3018.4942	2556.0747	2726.5676
8	3008.6684	2372.7444	2627.6322
9	2827.2765	2130.0683	2496.6904
10	2688.6566	2177.9452	2478.4539
11	2847.0777	2247.5275	2578.5490
12	2727.3951	2258.9260	2603.7406
13	2392.2678	2274.4819	2583.1326
14	2373.9756	2324.2067	2544.2003
15	2136.0703	2352.2305	2503.1292
16	2435.6777	2495.2299	2528.1787
17	2782.0739	2569.4865	2612.7442
18	2908.2986	2626.0788	2594.3977
19	2882.3898	2653.7902	2491.8829
20	2925.3077	2598.5217	2421.4871
21	2758.3837	2450.3426	2354.2270
22	2774.1990	2537.2361	2329.4366
23	2812.1156	2629.7669	2294.7407
24	2919.1309	2705.8036	2450.6264



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.7

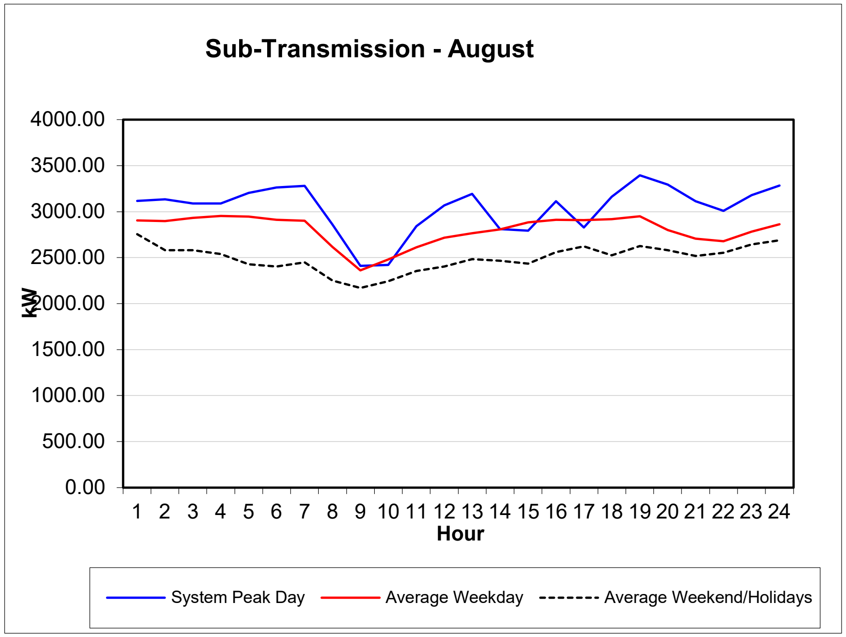
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2975.8703	2944.1927	2624.5653
2	2942.2716	2864.1817	2701.7809
3	3097.0851	2749.4654	2725.9813
4	3025.2966	2732.0977	2728.9551
5	2966.8912	2750.5238	2759.2573
6	2928.3185	2750.1685	2741.9039
7	2961.7364	2787.6937	2641.8668
8	2503.5269	2536.1798	2542.1293
9	2395.3203	2287.6888	2370.7265
10	2378.4261	2436.3273	2370.4704
11	2807.2170	2547.1088	2472.0665
12	2975.2854	2573.4886	2459.6070
13	3101.0082	2651.4421	2447.0621
14	3197.6627	2738.4064	2404.8755
15	3019.0957	2792.7362	2481.6573
16	2922.2645	2830.0674	2594.6255
17	3077.5927	2914.4088	2634.9320
18	3165.5358	2904.1586	2779.4680
19	3080.5612	2894.7745	2814.6117
20	2827.7997	2757.6808	2708.5100
21	2571.9848	2672.3196	2571.7745
22	2552.2657	2689.0087	2693.2824
23	2572.9278	2766.9032	2876.2709
24	2605.1274	2801.2595	2870.2962



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.8

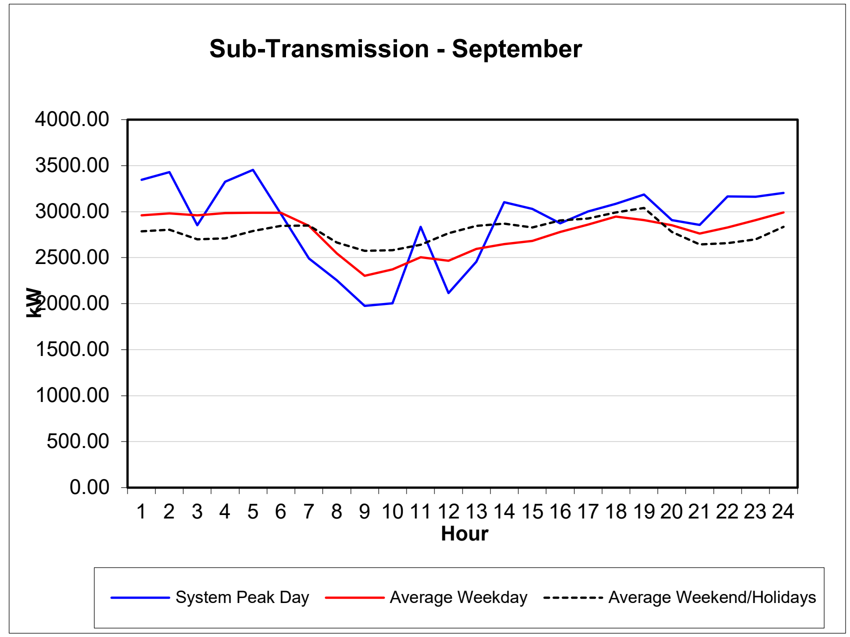
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3116.8416	2905.2744	2754.2135
2	3134.8846	2898.7426	2579.3537
3	3089.9632	2931.8360	2581.5994
4	3090.2484	2954.8201	2540.2627
5	3204.1030	2945.1082	2426.7023
6	3262.0256	2912.3022	2403.7287
7	3278.4742	2899.1714	2450.1195
8	2858.8276	2614.3169	2250.8281
9	2409.7286	2364.0736	2173.0362
10	2419.3771	2481.2668	2243.8715
11	2842.9456	2611.0335	2354.4481
12	3068.4724	2717.0956	2404.2948
13	3191.9225	2766.0810	2482.0362
14	2808.7480	2807.6584	2465.8443
15	2793.3592	2882.4775	2435.2208
16	3113.3301	2911.3918	2560.5949
17	2829.4981	2906.6122	2621.8254
18	3161.1222	2918.3901	2525.4927
19	3396.3205	2948.8846	2627.5401
20	3294.5121	2799.3533	2581.4079
21	3113.6258	2707.4970	2517.6015
22	3010.2604	2678.7107	2554.2456
23	3180.6451	2782.6749	2644.6227
24	3282.1744	2863.3233	2689.5553



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.9

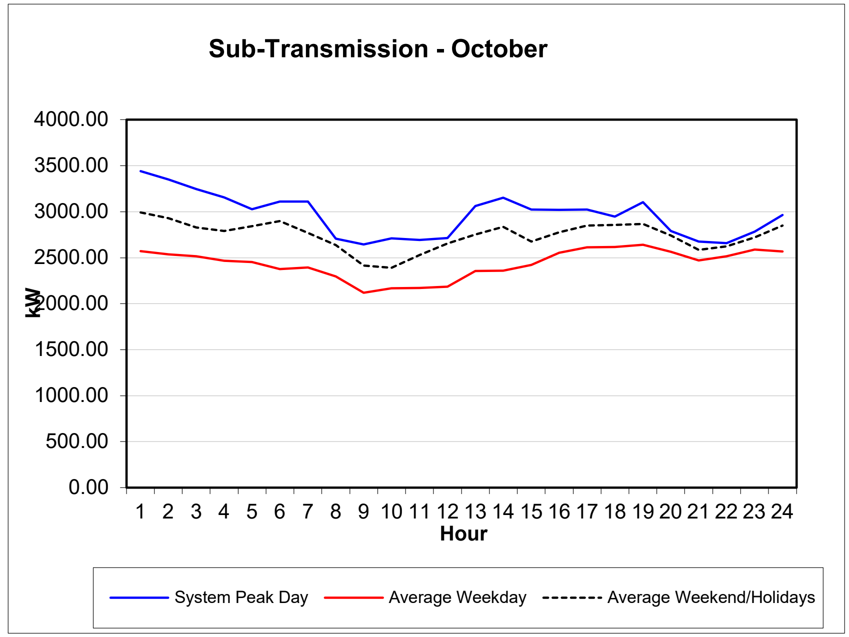
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3345.3434	2961.4093	2786.1424
2	3429.6063	2980.6112	2804.1820
3	2854.4502	2961.5218	2701.1519
4	3327.0325	2985.8742	2708.8625
5	3456.3323	2988.8390	2789.4409
6	2978.0382	2989.1659	2846.1890
7	2491.4661	2844.2295	2850.5908
8	2254.3618	2545.6679	2665.0158
9	1977.0794	2302.5128	2574.3443
10	2003.0474	2372.6716	2581.8211
11	2835.1906	2504.5188	2640.4997
12	2116.4370	2465.2643	2766.2855
13	2455.0041	2594.9732	2844.1893
14	3103.9771	2647.1882	2871.5620
15	3031.2499	2682.5144	2827.9110
16	2874.0885	2781.2409	2903.4917
17	3002.7727	2859.6600	2927.3873
18	3085.3069	2946.2226	2992.1167
19	3188.0987	2907.1229	3041.8987
20	2909.8412	2852.9419	2779.9820
21	2857.9556	2761.4275	2643.2843
22	3165.1220	2827.6798	2657.4677
23	3161.2881	2907.6757	2701.0704
24	3204.0903	2991.9558	2834.9417



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.10

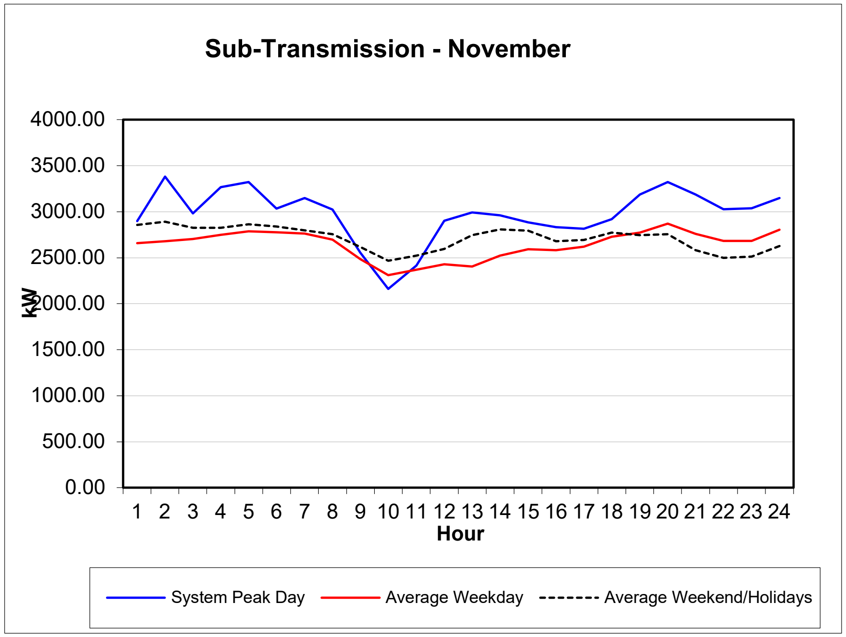
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3441.0726	2571.8885	2992.4635
2	3350.8326	2536.3466	2928.7390
3	3245.3980	2516.7684	2830.5418
4	3154.4978	2467.7271	2789.0917
5	3027.0141	2454.6148	2844.5555
6	3112.0708	2375.8400	2897.4695
7	3111.1067	2395.7404	2771.1968
8	2707.7229	2295.0394	2636.0130
9	2644.1070	2118.5566	2415.8399
10	2711.2231	2168.1258	2391.4493
11	2692.3311	2171.0119	2529.3355
12	2713.4816	2185.9935	2654.2218
13	3062.9709	2355.7526	2753.0710
14	3152.4109	2361.0576	2834.4783
15	3025.1310	2421.1476	2677.2701
16	3020.4698	2553.7091	2776.1600
17	3024.1945	2613.5396	2851.0913
18	2946.0639	2617.9559	2855.4739
19	3104.4637	2639.4094	2866.1718
20	2790.5924	2566.1897	2740.8674
21	2675.0010	2470.0360	2584.1364
22	2657.9500	2517.1594	2623.2331
23	2784.3808	2587.7710	2722.5973
24	2964.3914	2567.7761	2849.9875



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.11

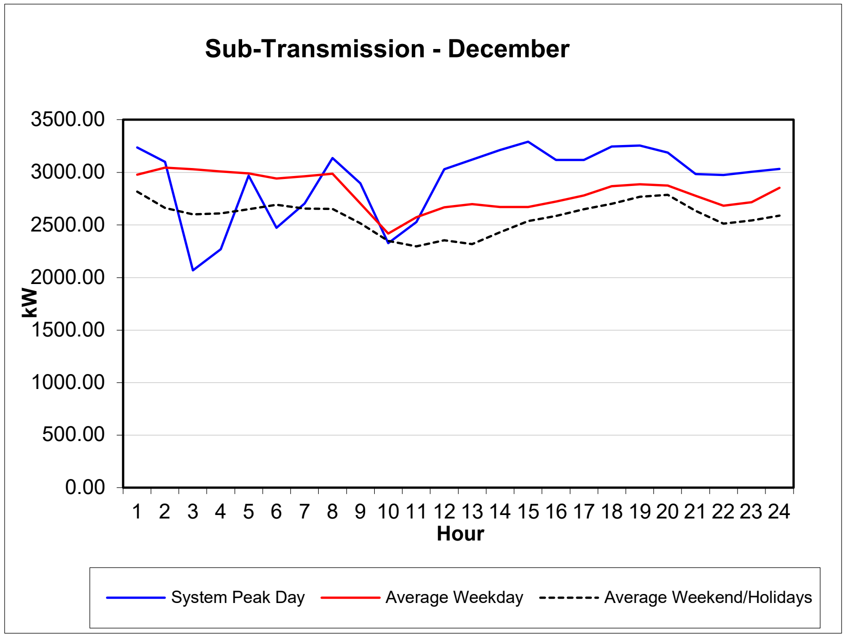
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2900.7967	2658.7612	2857.6796
2	3382.6266	2680.2314	2891.4270
3	2981.8271	2702.7233	2826.7038
4	3269.1243	2750.1904	2825.5043
5	3323.8834	2786.6649	2865.6049
6	3036.5156	2778.7087	2840.0972
7	3150.4488	2762.6719	2796.9008
8	3025.0265	2697.8345	2758.0674
9	2553.1349	2486.9247	2617.8741
10	2161.5211	2311.6619	2465.6995
11	2417.2758	2370.3226	2524.9064
12	2903.5714	2430.9338	2594.8539
13	2992.5469	2404.8064	2746.8151
14	2961.5944	2522.5145	2808.0501
15	2885.0069	2594.4013	2796.5418
16	2833.5034	2581.0854	2680.2092
17	2817.0896	2621.4666	2694.9942
18	2919.5840	2727.4721	2773.6413
19	3187.8778	2774.5077	2745.9934
20	3323.7597	2871.9115	2757.7912
21	3188.7772	2760.3268	2583.7505
22	3027.3533	2684.7479	2499.2178
23	3038.1439	2685.2636	2512.0314
24	3148.4482	2805.2854	2626.3198



Southwestern Public Service Company
Hourly Load Profiles

Table E - 7.12

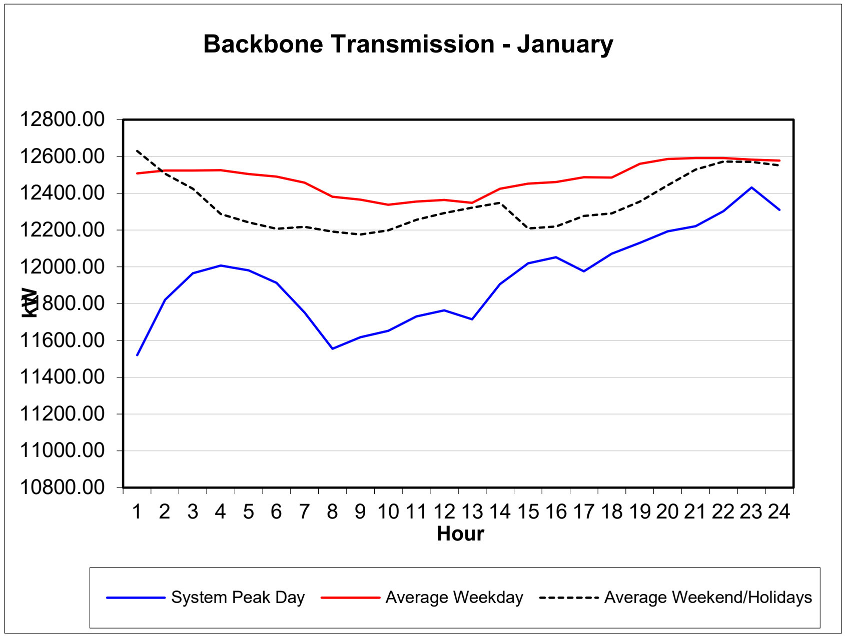
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	3237.4229	2978.9080	2815.4332
2	3101.1312	3045.3070	2661.7477
3	2067.0883	3032.0408	2602.3421
4	2269.6339	3010.7685	2609.6469
5	2971.0394	2991.0377	2649.0554
6	2472.5808	2941.8129	2691.7609
7	2706.2006	2962.4017	2654.6888
8	3138.2579	2989.3566	2653.6123
9	2897.4585	2704.7581	2515.2456
10	2326.4856	2417.5941	2349.0765
11	2529.1551	2572.5050	2296.7516
12	3029.2677	2668.0727	2354.5761
13	3120.6548	2698.9877	2317.6157
14	3214.7497	2671.7858	2430.5050
15	3292.0952	2671.7301	2537.9865
16	3119.7525	2721.8582	2587.1886
17	3118.8931	2781.7555	2650.9356
18	3245.9204	2870.1482	2700.6944
19	3256.2516	2888.8857	2769.4567
20	3189.2688	2876.1906	2788.0462
21	2983.9047	2779.0217	2633.4704
22	2976.7988	2684.7147	2513.7132
23	3006.1016	2716.5644	2544.9489
24	3033.1019	2854.9296	2588.1068



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.1

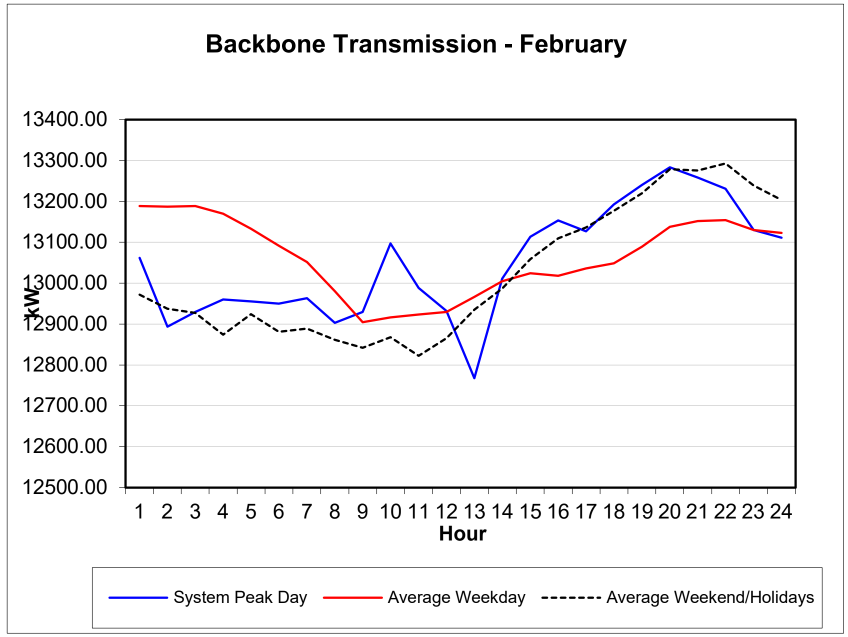
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	11520.3733	12506.9506	12630.9991
2	11820.7093	12523.7684	12505.4294
3	11964.6508	12523.0750	12423.3922
4	12007.0175	12525.1049	12287.1253
5	11980.2184	12503.4027	12241.6922
6	11913.2604	12490.0230	12206.5509
7	11750.4565	12457.9364	12216.8812
8	11554.8811	12380.4442	12190.6638
9	11616.4451	12364.7963	12176.1142
10	11651.5014	12338.8604	12197.6444
11	11730.3119	12355.4366	12255.0785
12	11762.7542	12363.3771	12291.2657
13	11714.8208	12346.9755	12322.3376
14	11906.6030	12424.7834	12346.8717
15	12019.3088	12452.6714	12208.6235
16	12051.7783	12459.9639	12218.4859
17	11976.1334	12486.4920	12277.0535
18	12070.2715	12484.3366	12290.7733
19	12129.4191	12560.6446	12355.0759
20	12192.0039	12585.5484	12442.7780
21	12220.7096	12590.4935	12528.3284
22	12302.3302	12591.9401	12571.5424
23	12431.9335	12583.0034	12570.9014
24	12309.6905	12577.4502	12550.8847



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.2

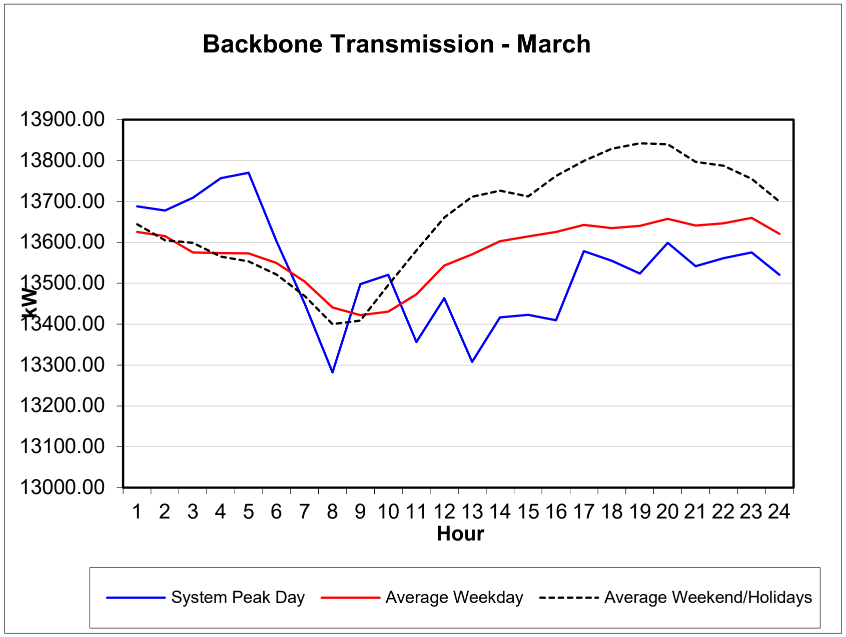
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13062.3058	13188.8798	12971.8631
2	12893.4476	13187.0580	12937.3180
3	12929.9560	13188.9477	12927.4821
4	12960.1245	13170.3458	12874.0126
5	12955.1273	13133.2356	12924.3986
6	12950.3369	13091.4686	12880.9271
7	12963.5924	13051.7149	12888.9081
8	12902.8884	12980.6440	12861.1911
9	12929.8092	12904.6385	12841.8070
10	13097.1061	12916.4508	12868.0629
11	12988.6981	12923.5806	12822.6089
12	12931.9049	12929.7241	12865.4258
13	12767.6451	12966.7503	12934.9908
14	13010.7892	13005.0470	12986.4704
15	13113.4714	13024.0334	13058.6801
16	13153.1858	13018.1337	13109.4875
17	13126.6102	13036.2569	13136.6161
18	13192.8133	13048.3896	13176.7441
19	13240.5924	13089.3775	13220.2467
20	13283.5840	13137.5359	13279.1013
21	13258.4753	13151.7955	13275.3816
22	13231.0032	13154.0590	13293.4090
23	13130.3943	13130.0372	13238.7527
24	13111.4725	13123.3660	13203.8725



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.3

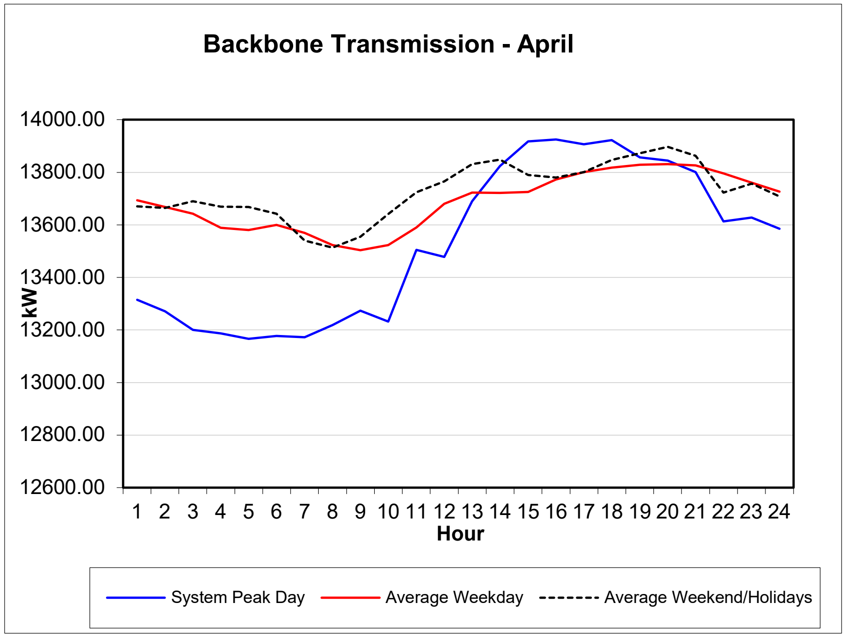
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13688.2765	13625.7089	13644.2793
2	13678.1754	13615.1979	13605.3723
3	13709.1847	13575.3363	13598.8882
4	13756.8579	13573.8044	13564.9695
5	13770.3722	13573.2935	13553.7325
6	13602.8430	13549.4879	13521.1957
7	13450.0704	13504.3358	13468.5420
8	13281.6318	13440.4171	13399.7207
9	13498.2501	13421.7806	13408.7939
10	13520.7691	13430.8142	13495.8469
11	13356.3050	13473.0891	13580.4180
12	13463.3200	13543.0619	13660.5434
13	13307.3812	13570.3922	13711.5873
14	13416.5723	13602.8321	13726.1605
15	13422.5270	13614.6333	13712.4346
16	13409.6588	13625.3946	13762.6194
17	13578.3254	13642.6359	13798.8972
18	13555.1910	13635.0057	13829.2669
19	13523.9388	13640.2384	13842.4988
20	13598.6850	13657.2098	13840.1360
21	13541.9663	13641.2110	13796.7191
22	13561.4554	13646.4098	13787.4375
23	13575.5191	13660.0237	13755.2711
24	13520.9476	13620.7007	13699.9658



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.4

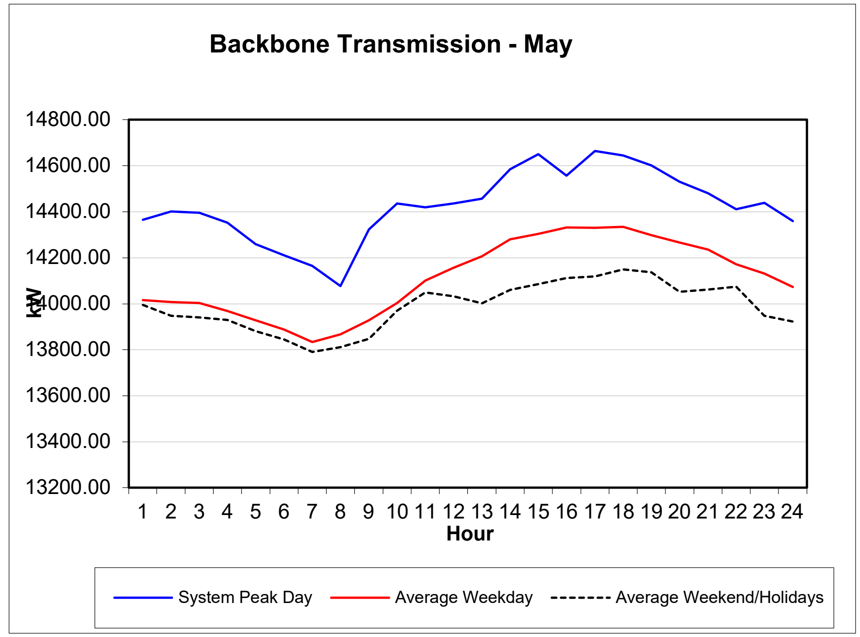
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13314.9887	13693.7642	13670.8767
2	13270.9196	13668.3714	13664.8221
3	13200.9194	13642.7610	13690.4072
4	13187.3640	13588.6988	13669.3187
5	13166.5765	13581.0790	13667.7031
6	13177.1943	13600.0177	13642.2768
7	13172.8823	13569.3481	13540.1731
8	13218.9006	13522.8226	13513.9411
9	13273.4847	13503.0809	13554.7304
10	13231.8829	13522.7419	13641.8825
11	13505.1710	13590.4712	13724.4241
12	13477.6289	13680.0806	13765.9671
13	13690.5271	13722.9421	13831.6834
14	13824.4215	13722.2761	13848.0596
15	13917.2963	13726.0117	13790.2979
16	13925.1429	13772.3255	13779.9838
17	13906.9742	13801.0298	13800.8395
18	13922.6172	13817.8845	13847.7257
19	13856.4459	13829.2123	13873.2416
20	13844.2806	13831.5188	13897.0091
21	13800.6770	13826.0494	13863.0500
22	13613.7144	13795.7135	13722.5430
23	13628.0290	13760.6873	13756.5473
24	13585.5039	13727.1122	13708.0835



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.5

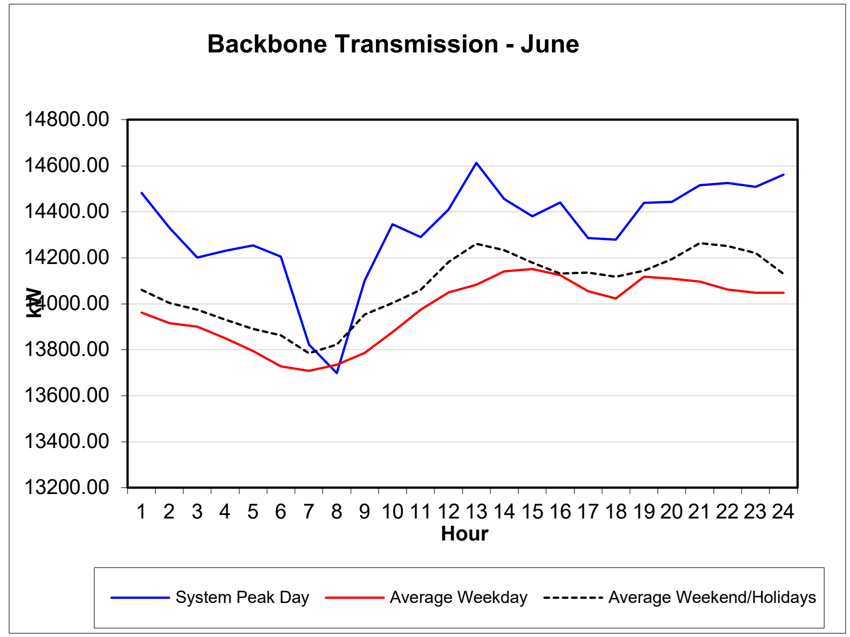
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14,365.65	14,015.79	13,994.89
2	14,401.82	14,007.84	13,948.19
3	14,396.18	14,004.20	13,941.29
4	14,353.50	13,969.34	13,929.71
5	14,259.77	13,928.54	13,881.48
6	14,210.19	13,887.42	13,844.58
7	14,165.54	13,832.81	13,790.28
8	14,076.73	13,867.76	13,811.54
9	14,323.24	13,927.82	13,847.70
10	14,436.24	14,003.52	13,969.44
11	14,420.28	14,100.52	14,049.39
12	14,436.26	14,156.54	14,032.79
13	14,457.64	14,207.37	14,002.46
14	14,585.22	14,279.87	14,059.95
15	14,650.14	14,303.63	14,086.26
16	14,556.93	14,331.78	14,112.22
17	14,664.27	14,331.03	14,118.66
18	14,645.71	14,334.22	14,148.83
19	14,602.11	14,299.05	14,137.51
20	14,531.52	14,266.43	14,051.81
21	14,480.71	14,235.98	14,061.98
22	14,411.61	14,172.55	14,074.69
23	14,439.07	14,132.18	13,947.77
24	14,360.18	14,072.51	13,923.24



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.6

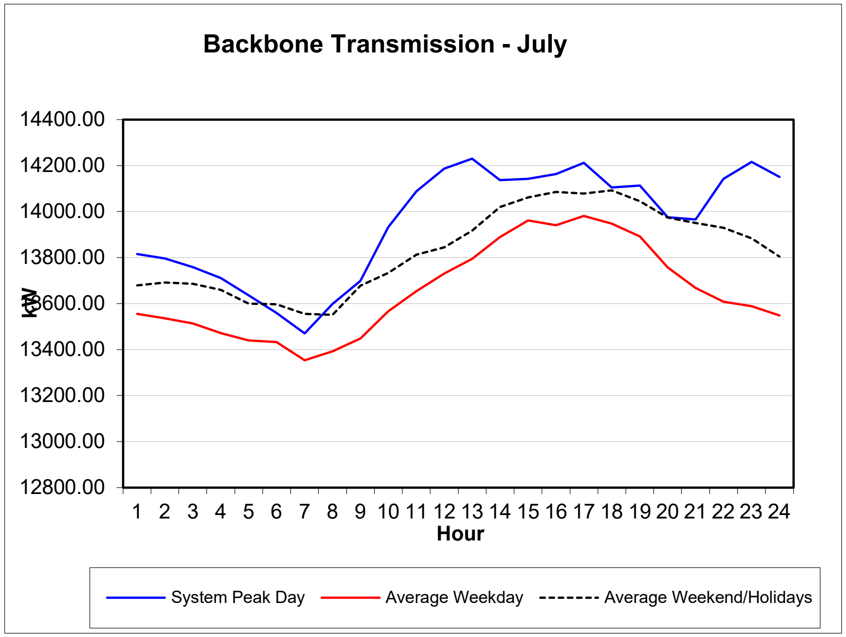
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14482.0885	13962.3635	14060.9852
2	14330.8456	13916.7253	14003.6531
3	14201.8437	13900.7725	13974.7918
4	14231.2026	13850.6540	13931.2139
5	14254.9416	13794.5843	13890.5944
6	14205.5590	13728.2002	13863.1279
7	13822.2862	13708.6709	13785.1543
8	13698.1782	13734.9095	13822.6252
9	14101.6335	13786.3100	13953.0011
10	14345.9947	13877.5135	14003.7124
11	14289.8586	13974.2255	14060.4636
12	14410.1942	14049.6261	14182.3076
13	14612.8343	14083.7235	14261.4599
14	14455.6260	14141.8546	14232.9888
15	14381.2605	14150.0863	14179.0937
16	14440.5131	14125.1069	14131.1594
17	14286.0145	14054.6684	14136.5266
18	14279.5511	14022.6432	14117.6926
19	14438.9276	14118.4579	14143.9932
20	14443.1191	14109.4237	14194.0735
21	14516.5327	14096.7841	14263.4907
22	14525.3422	14062.3378	14252.0371
23	14508.5710	14048.5056	14220.7531
24	14561.8998	14048.0565	14130.1586



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.7

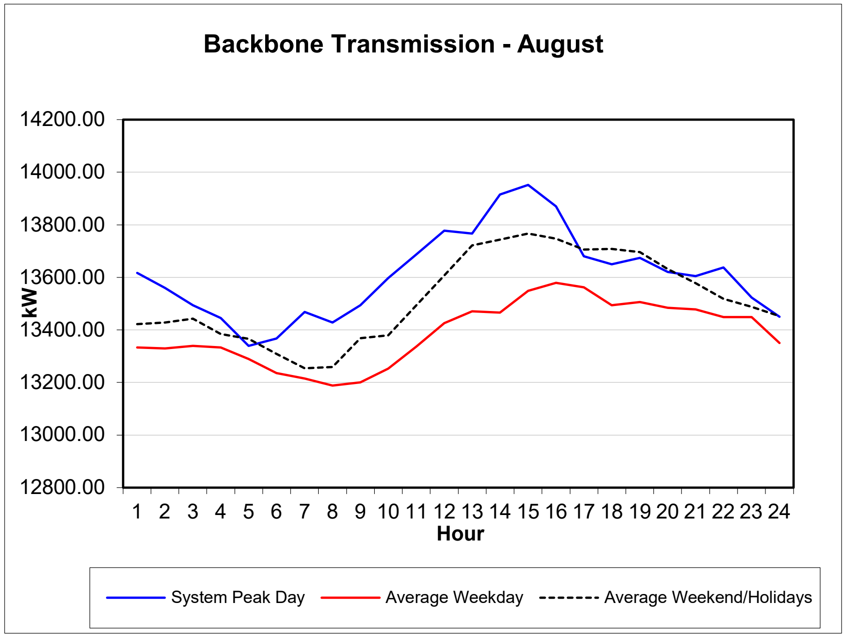
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13815.9163	13554.9147	13679.5355
2	13795.9274	13535.4626	13691.3996
3	13757.9555	13514.1721	13686.0812
4	13710.8133	13471.5585	13659.6239
5	13635.7260	13439.3734	13600.4437
6	13559.7578	13432.7999	13596.5215
7	13470.2366	13353.7129	13554.8744
8	13599.0630	13392.1599	13551.4785
9	13698.8458	13448.4667	13677.6810
10	13932.5184	13565.8720	13733.3202
11	14087.9559	13653.5102	13812.1996
12	14187.2379	13730.8842	13844.7494
13	14230.5721	13794.5251	13917.4692
14	14136.3800	13889.1349	14020.3987
15	14142.2094	13961.9425	14061.2859
16	14163.1187	13940.4553	14085.6875
17	14211.6944	13981.6424	14078.8831
18	14105.3240	13948.2322	14092.6913
19	14113.1997	13892.0750	14044.8938
20	13975.0580	13757.2344	13974.1669
21	13965.6155	13668.1673	13950.7133
22	14142.9762	13608.6842	13930.3315
23	14216.0127	13589.1136	13884.0934
24	14150.2666	13548.1527	13804.5018



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.8

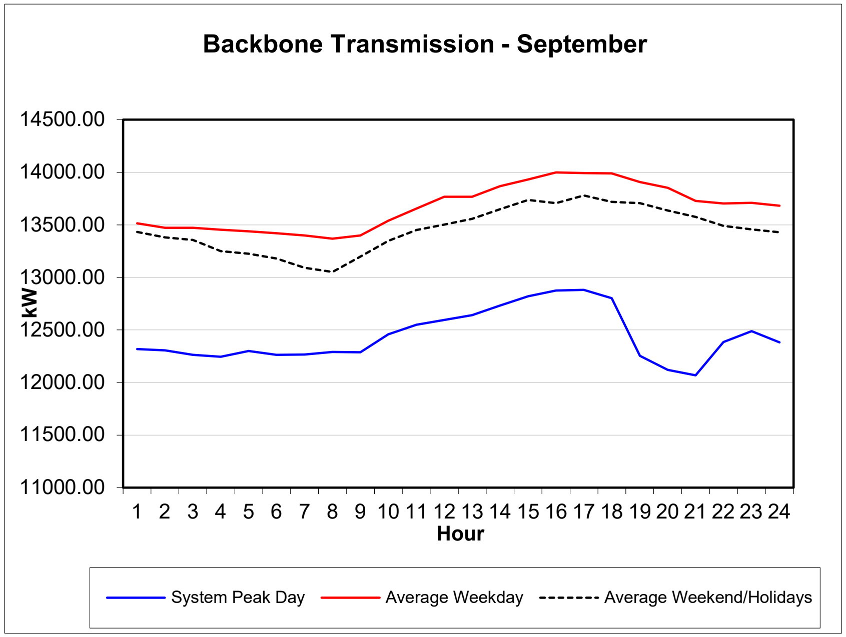
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13617.4195	13332.8435	13422.0251
2	13559.5587	13329.9919	13428.1157
3	13494.0882	13339.0153	13442.8300
4	13444.8228	13333.5485	13384.0668
5	13340.0840	13289.6763	13365.8087
6	13366.8636	13236.0187	13308.4859
7	13468.6182	13215.4257	13253.8215
8	13428.0636	13188.7453	13258.4283
9	13493.9480	13200.6106	13369.0095
10	13597.0727	13252.7420	13379.7574
11	13687.4469	13336.7384	13494.5371
12	13778.2558	13425.9344	13607.5610
13	13767.2580	13470.5749	13721.9315
14	13915.8950	13466.3512	13743.8085
15	13952.3493	13548.5377	13767.4496
16	13869.7138	13579.4485	13747.4751
17	13680.8761	13562.4337	13706.3039
18	13650.0144	13493.7575	13707.9246
19	13673.9062	13506.4206	13696.4500
20	13620.8038	13484.2223	13631.5331
21	13604.6172	13478.5445	13578.4940
22	13637.9736	13448.8695	13517.7748
23	13523.3880	13449.0283	13487.7262
24	13449.6885	13350.4979	13451.9639



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.9

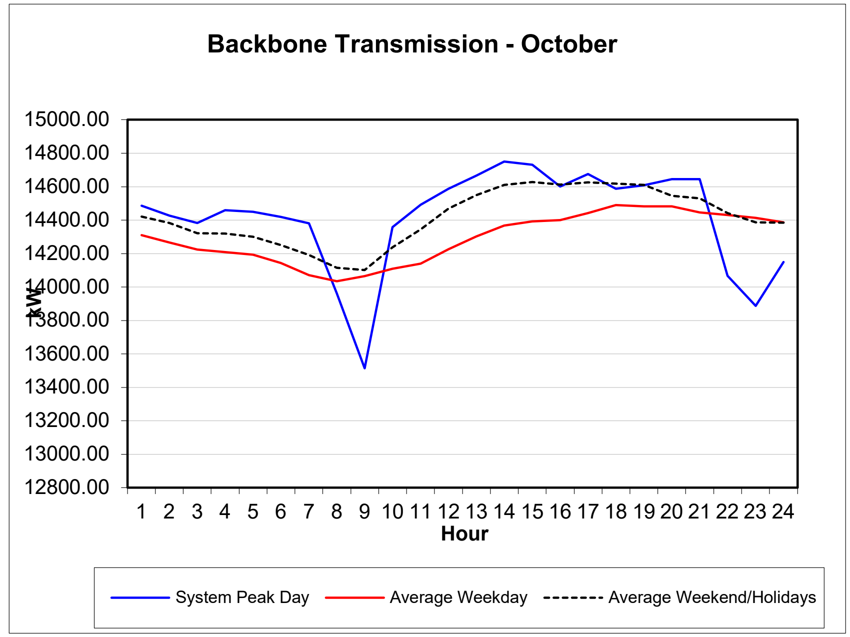
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	12319.3286	13514.3803	13433.7609
2	12306.8481	13471.6243	13381.4511
3	12264.1563	13470.8512	13357.6948
4	12246.7862	13453.8774	13251.2818
5	12299.4703	13439.1853	13226.2625
6	12264.7649	13420.3980	13180.8746
7	12266.9288	13397.9783	13091.3883
8	12289.8488	13369.3124	13052.9781
9	12288.5708	13399.6947	13197.8837
10	12459.6692	13537.9103	13347.4729
11	12549.4767	13655.5119	13449.4770
12	12596.8331	13767.7202	13504.1470
13	12641.6357	13767.1594	13556.7028
14	12732.3601	13866.4890	13649.1708
15	12820.7476	13931.1412	13737.3488
16	12875.2549	13997.6661	13706.5253
17	12881.2968	13993.4900	13778.7273
18	12802.5216	13989.0486	13719.7699
19	12255.0325	13907.9937	13705.3128
20	12122.0037	13854.2338	13636.6169
21	12068.3885	13726.7135	13576.5043
22	12383.9076	13703.5019	13489.3613
23	12487.9226	13709.1753	13456.2996
24	12383.6383	13682.6399	13429.3669



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.10

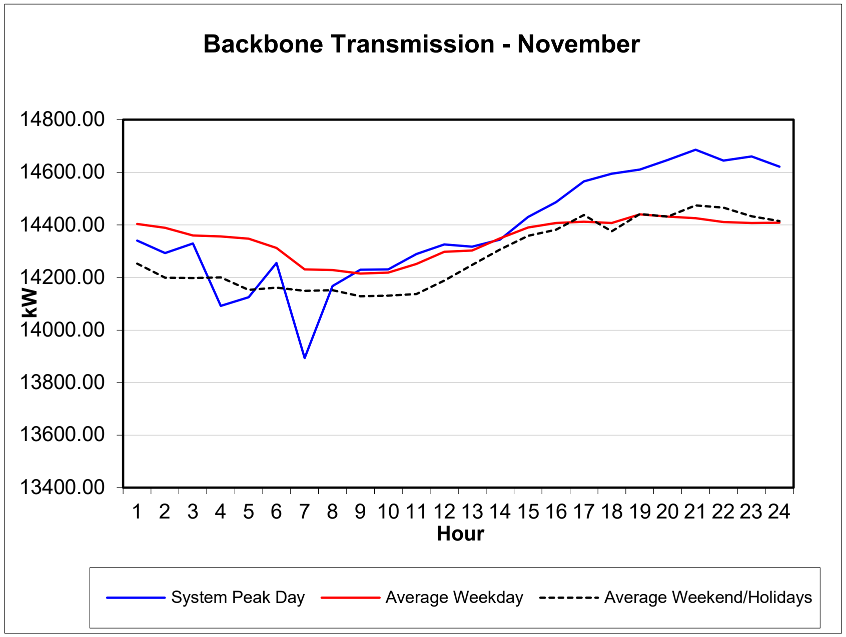
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14485.8212	14309.8384	14421.2297
2	14426.3220	14265.8859	14383.1591
3	14383.2234	14224.0864	14321.7487
4	14460.4294	14208.2812	14319.8011
5	14449.3731	14193.0960	14300.3546
6	14420.2857	14142.8951	14251.0523
7	14380.2275	14071.8252	14190.8341
8	13962.8725	14034.4940	14115.2916
9	13514.5788	14065.9602	14101.5252
10	14357.6487	14108.9296	14237.1241
11	14492.8322	14140.7207	14345.4706
12	14588.2570	14226.3411	14469.3962
13	14666.0623	14301.7011	14550.0416
14	14749.3237	14368.3527	14610.7835
15	14731.9170	14391.7597	14626.7505
16	14600.6732	14399.3973	14612.5506
17	14676.2168	14442.6104	14625.7379
18	14588.2268	14488.9615	14618.3730
19	14608.8899	14482.7585	14611.2812
20	14644.6933	14483.2555	14546.5603
21	14645.5146	14446.2491	14530.4265
22	14066.8681	14429.9359	14442.3195
23	13887.0307	14414.1684	14387.2971
24	14149.0975	14385.9156	14384.7195



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.11

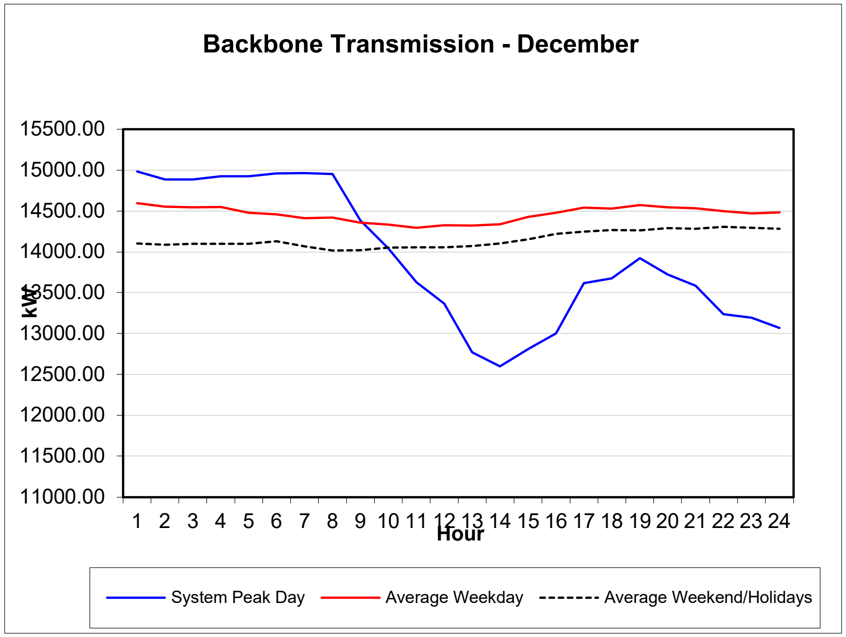
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14340.0957	14403.8528	14253.4673
2	14293.5095	14388.8161	14198.9601
3	14329.4804	14360.2970	14197.7244
4	14092.2391	14356.4406	14200.5057
5	14124.6312	14347.6717	14152.5860
6	14255.2057	14312.7545	14161.7418
7	13893.7013	14231.5428	14149.0933
8	14168.0022	14228.3304	14151.3534
9	14230.0387	14214.6223	14128.7109
10	14230.5260	14219.3547	14131.1448
11	14289.9061	14251.5197	14137.4482
12	14326.1341	14298.2678	14188.7041
13	14317.2898	14302.7307	14247.9378
14	14344.2716	14349.0383	14306.7809
15	14430.2715	14390.3619	14358.6123
16	14487.3070	14407.5268	14382.5974
17	14565.2967	14412.3745	14437.8525
18	14594.6498	14407.0435	14375.6952
19	14610.8832	14439.5026	14441.3237
20	14647.5363	14432.3887	14432.3237
21	14686.1730	14425.4856	14473.8902
22	14645.3167	14410.7162	14465.7074
23	14660.5726	14407.4365	14432.7794
24	14621.4793	14408.7939	14414.7151



Southwestern Public Service Company
Hourly Load Profiles

Table E - 8.12

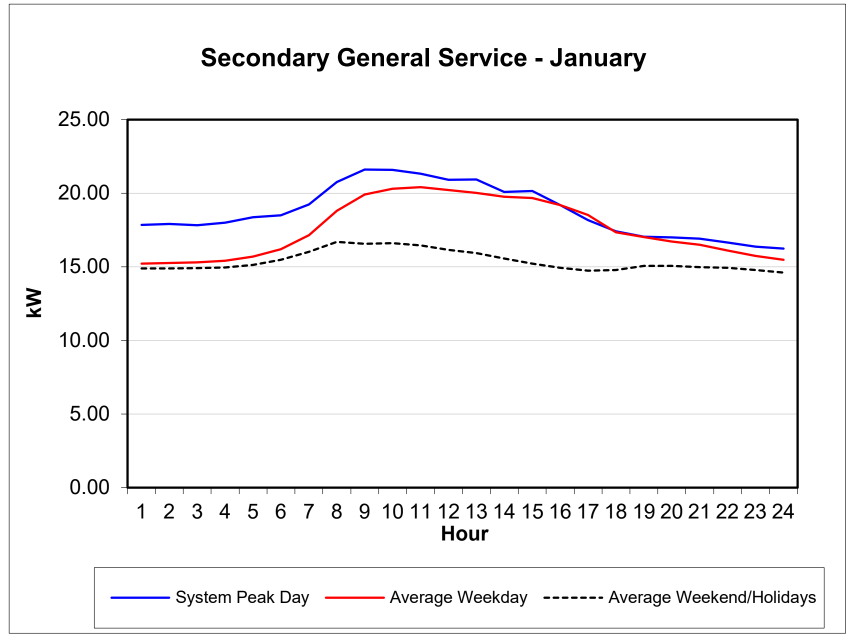
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14984.6932	14594.0787	14104.6162
2	14887.7744	14553.6705	14087.7917
3	14887.5419	14547.4143	14100.4672
4	14926.5358	14551.3596	14099.0143
5	14927.8411	14481.3930	14101.0508
6	14960.5679	14460.4900	14130.3347
7	14967.3616	14415.5645	14068.0724
8	14954.2615	14423.2151	14016.9398
9	14387.9221	14360.9059	14021.5166
10	14044.6676	14333.9545	14054.3490
11	13627.0328	14295.9369	14056.5883
12	13364.3449	14329.3899	14057.7781
13	12769.8701	14324.2738	14075.3329
14	12600.0791	14337.6376	14102.8190
15	12807.8301	14427.7315	14154.5089
16	13001.7031	14479.0158	14221.4655
17	13615.7658	14544.0429	14251.3298
18	13675.5296	14532.7633	14269.5288
19	13924.9508	14575.3252	14267.0658
20	13719.9870	14545.3650	14291.5333
21	13582.2035	14533.3374	14285.3689
22	13233.9899	14502.0044	14304.4435
23	13193.4715	14473.9471	14296.5779
24	13067.0002	14485.2237	14282.8705



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.1

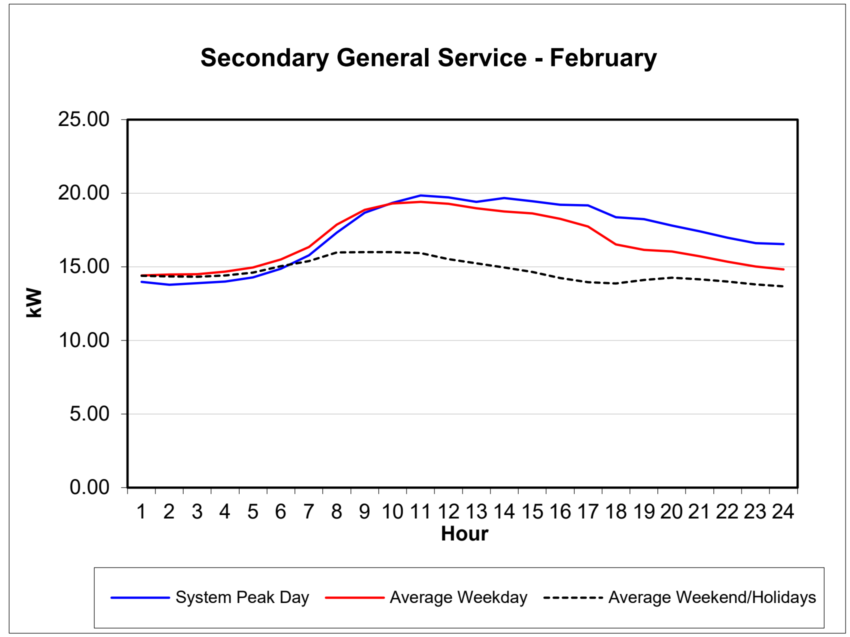
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.8517	15.2301	14.8984
2	17.9057	15.2643	14.8866
3	17.8194	15.3001	14.9176
4	17.9979	15.4181	14.9631
5	18.3612	15.6861	15.1216
6	18.5013	16.2019	15.4827
7	19.2458	17.1428	16.0121
8	20.7572	18.8015	16.6962
9	21.6231	19.9089	16.5753
10	21.5771	20.3073	16.6050
11	21.3327	20.4186	16.4631
12	20.9160	20.2286	16.1501
13	20.9275	20.0292	15.9245
14	20.0975	19.7554	15.5583
15	20.1526	19.6737	15.2270
16	19.1958	19.2064	14.9377
17	18.1788	18.5122	14.7355
18	17.4031	17.3490	14.7794
19	17.0506	17.0177	15.0735
20	17.0012	16.7186	15.0750
21	16.9044	16.4917	14.9843
22	16.6454	16.1053	14.9247
23	16.3613	15.7462	14.7725
24	16.2512	15.4755	14.6062



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.2

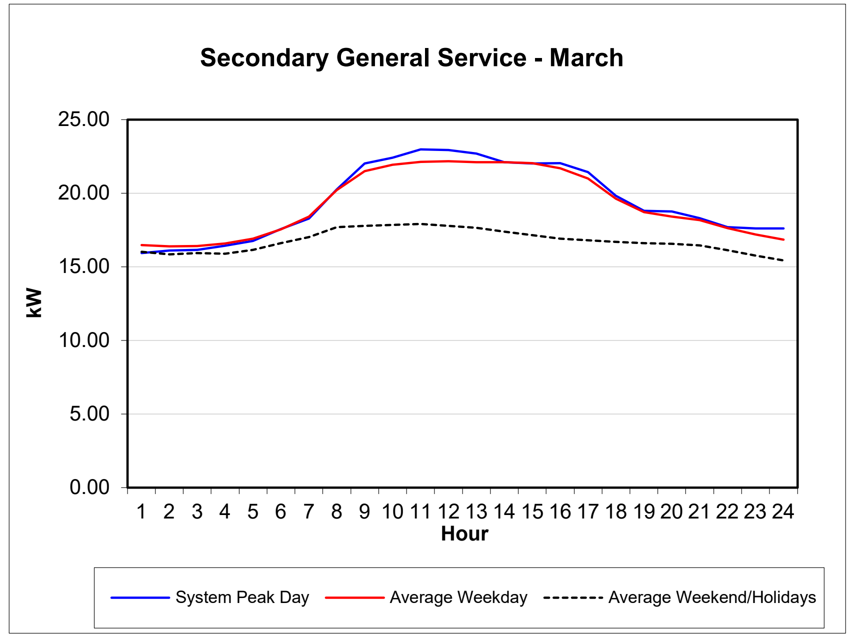
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	13.9803	14.4298	14.3840
2	13.7818	14.4703	14.3540
3	13.9033	14.5023	14.3204
4	13.9970	14.6738	14.4085
5	14.2884	14.9634	14.6178
6	14.8833	15.5136	15.0558
7	15.7903	16.3468	15.4044
8	17.3342	17.8631	15.9878
9	18.6760	18.8835	15.9997
10	19.3537	19.3011	16.0134
11	19.8469	19.4177	15.9431
12	19.7183	19.2776	15.5331
13	19.4248	18.9878	15.2333
14	19.6847	18.7736	14.9611
15	19.4624	18.6442	14.6468
16	19.2236	18.2725	14.2525
17	19.1700	17.7352	13.9645
18	18.3819	16.5354	13.8613
19	18.2501	16.1505	14.1125
20	17.8112	16.0497	14.2665
21	17.4141	15.7275	14.1653
22	16.9801	15.3432	13.9991
23	16.6213	15.0226	13.8145
24	16.5363	14.8216	13.6843



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.3

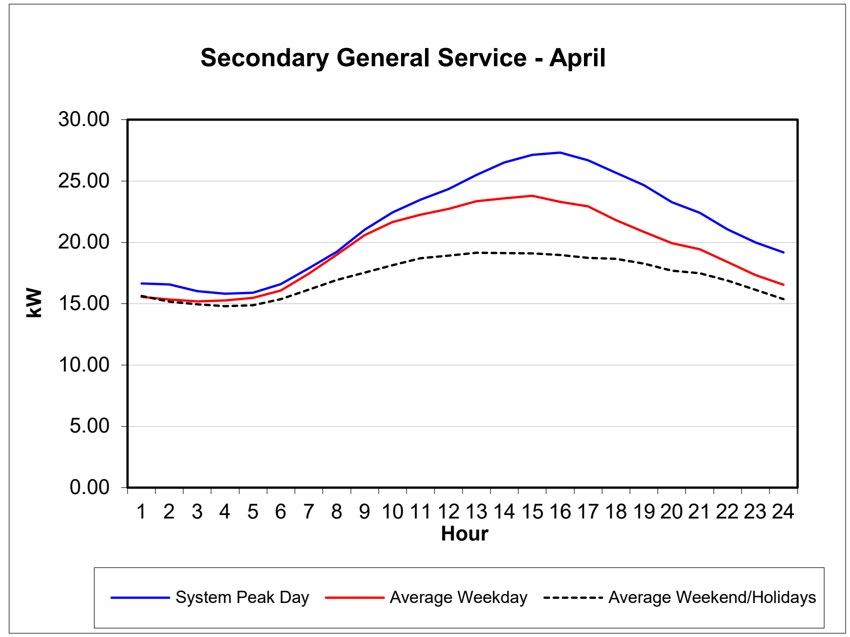
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	15.9344	16.4753	16.0316
2	16.1210	16.4057	15.8618
3	16.1552	16.4179	15.9348
4	16.4422	16.5986	15.8950
5	16.7583	16.9198	16.1497
6	17.5642	17.5432	16.6065
7	18.2901	18.4111	17.0373
8	20.2778	20.2162	17.7112
9	22.0221	21.5112	17.7871
10	22.4249	21.9488	17.8655
11	22.9979	22.1477	17.9285
12	22.9470	22.1747	17.7885
13	22.7052	22.1272	17.6639
14	22.1153	22.1082	17.3944
15	22.0326	22.0610	17.1642
16	22.0502	21.7073	16.9198
17	21.4340	21.0133	16.8127
18	19.8365	19.6296	16.6968
19	18.8181	18.7343	16.6190
20	18.7613	18.4212	16.5620
21	18.3113	18.1848	16.4722
22	17.7128	17.6285	16.1417
23	17.6143	17.2029	15.7639
24	17.6193	16.8593	15.4494



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.4

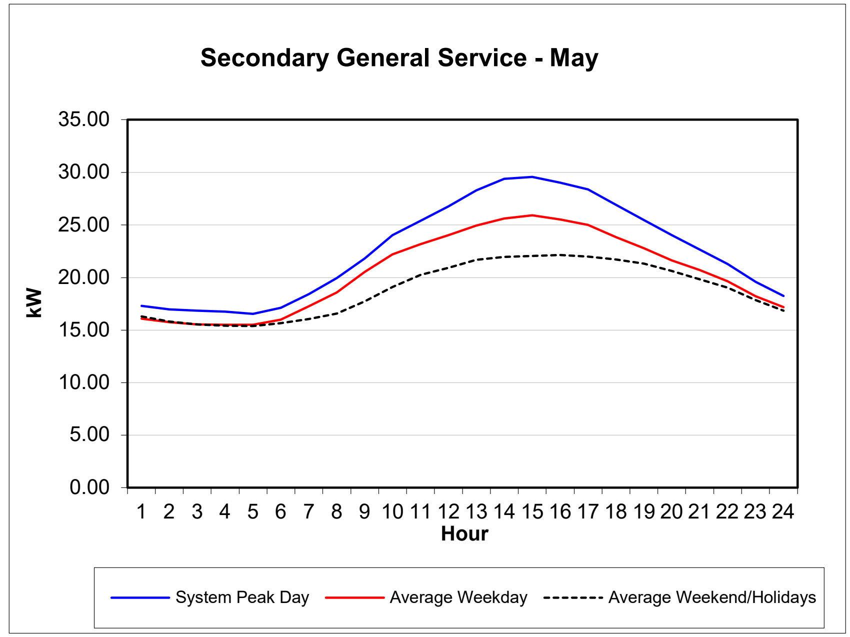
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	16.6516	15.5491	15.6416
2	16.5748	15.3461	15.1571
3	16.0364	15.1844	14.9577
4	15.8188	15.2600	14.8093
5	15.9027	15.4833	14.8867
6	16.6106	16.0787	15.3750
7	17.9010	17.4774	16.1557
8	19.2322	18.9996	16.9368
9	21.0413	20.5839	17.5335
10	22.4484	21.6555	18.1552
11	23.5045	22.2726	18.7130
12	24.3513	22.7354	18.9158
13	25.4974	23.3537	19.1485
14	26.5265	23.6048	19.1229
15	27.1472	23.8042	19.1181
16	27.3335	23.3080	18.9897
17	26.7032	22.9389	18.7449
18	25.6790	21.8105	18.6559
19	24.6783	20.8596	18.2733
20	23.2937	19.9460	17.6993
21	22.4109	19.4589	17.4879
22	21.0721	18.3920	16.8870
23	20.0014	17.3327	16.1252
24	19.1855	16.5427	15.3715



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.5

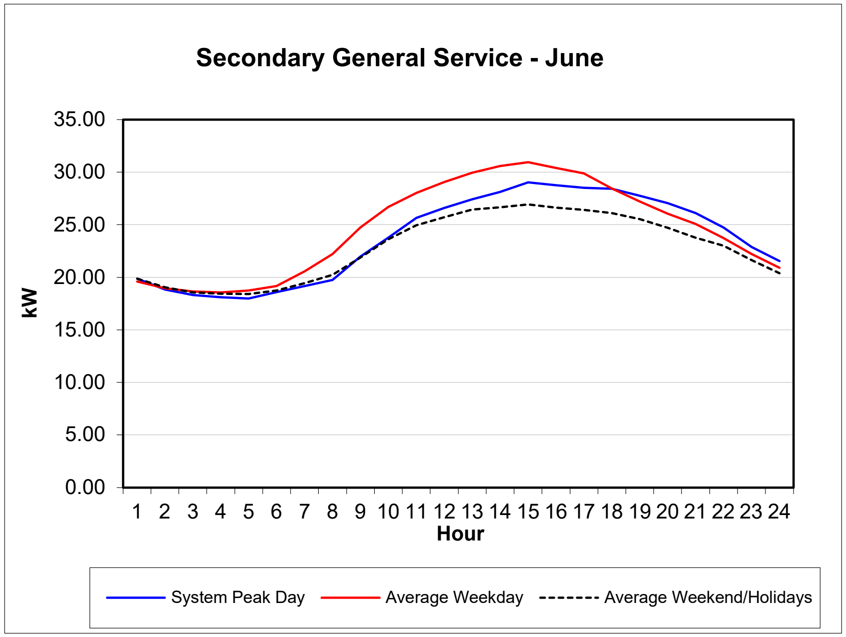
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.3192	16.0910	16.3109
2	16.9793	15.7576	15.8226
3	16.8377	15.5137	15.5314
4	16.7503	15.5162	15.4045
5	16.5269	15.5152	15.3898
6	17.1274	16.0000	15.6513
7	18.4409	17.2834	16.0607
8	19.9652	18.5701	16.5700
9	21.8209	20.5319	17.7413
10	24.0475	22.1926	19.1039
11	25.4124	23.1783	20.2539
12	26.7627	24.0377	20.9244
13	28.2828	24.9336	21.6991
14	29.3838	25.6281	21.9760
15	29.5505	25.9055	22.0529
16	29.0302	25.5115	22.1400
17	28.3732	25.0146	22.0013
18	26.9345	23.8494	21.7298
19	25.4696	22.7869	21.3219
20	24.0257	21.6148	20.6276
21	22.6779	20.7276	19.8236
22	21.2840	19.6577	19.0332
23	19.6039	18.2182	17.8531
24	18.2486	17.1692	16.8419



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.6

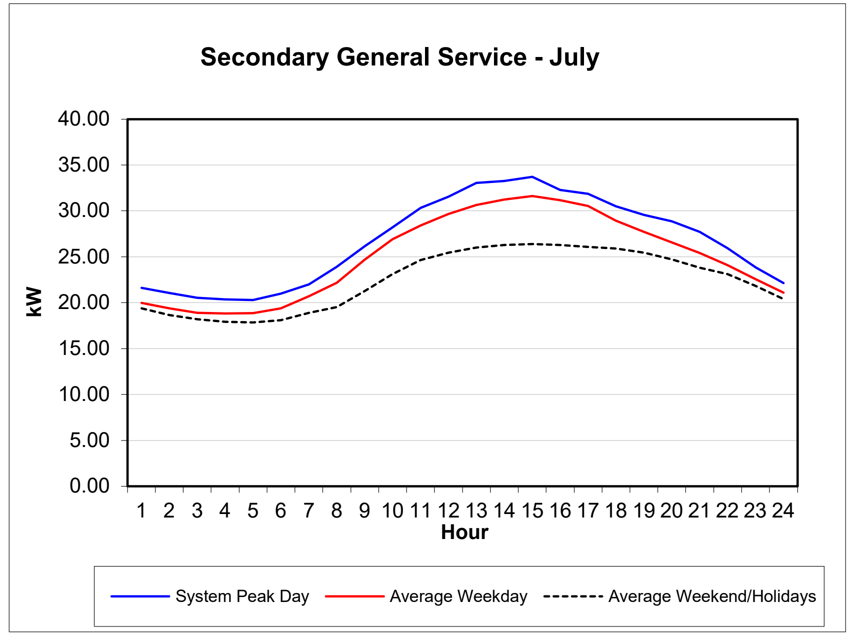
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	19.8641	19.5962	19.8799
2	18.8402	18.9495	19.0350
3	18.3223	18.6432	18.5661
4	18.0903	18.5682	18.4253
5	18.0060	18.7446	18.4066
6	18.6014	19.1725	18.7532
7	19.1827	20.5835	19.4280
8	19.7508	22.2136	20.2469
9	21.9636	24.7347	21.8695
10	23.7699	26.6883	23.6143
11	25.6581	28.0265	24.9402
12	26.5906	29.0732	25.7096
13	27.4334	29.9499	26.4408
14	28.1316	30.5773	26.6668
15	29.0505	30.9550	26.9388
16	28.7486	30.3884	26.6385
17	28.5222	29.8934	26.4283
18	28.4196	28.4429	26.1161
19	27.7672	27.1906	25.5384
20	27.0596	26.0583	24.7092
21	26.1109	25.0728	23.7553
22	24.7250	23.7456	22.9915
23	22.8800	22.2253	21.6383
24	21.5441	20.8983	20.3874



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.7

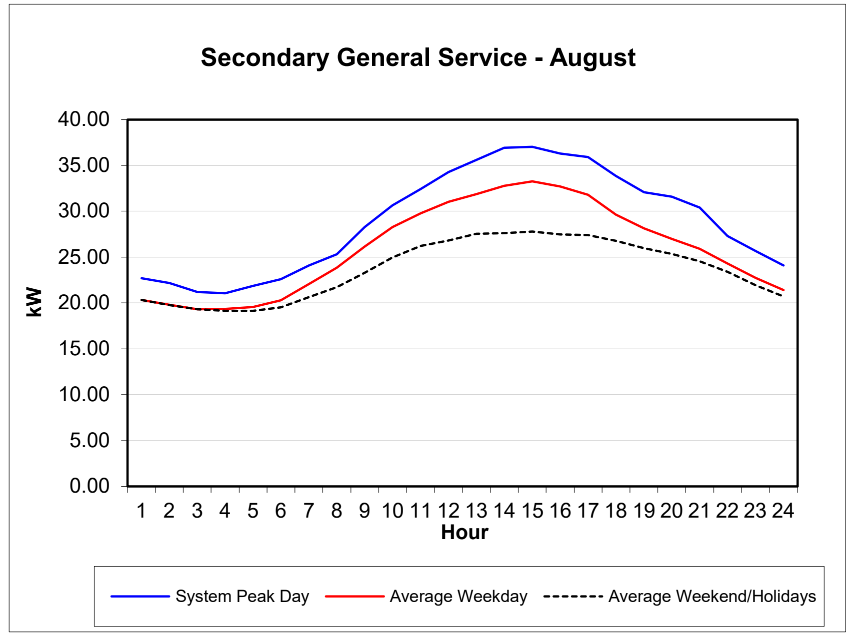
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	21.6118	19.9818	19.3860
2	21.0418	19.3962	18.6395
3	20.5325	18.8830	18.1783
4	20.3577	18.8209	17.8997
5	20.2900	18.8686	17.8462
6	20.9711	19.3783	18.1031
7	22.0056	20.7031	18.8813
8	23.9049	22.1677	19.5172
9	26.1274	24.6722	21.2496
10	28.1929	26.8993	23.1056
11	30.3044	28.3904	24.6430
12	31.5330	29.6578	25.4443
13	33.0267	30.6391	26.0034
14	33.2455	31.2435	26.2900
15	33.7167	31.6282	26.3785
16	32.2780	31.1526	26.2654
17	31.8424	30.5439	26.0759
18	30.4793	28.9412	25.8852
19	29.5498	27.7134	25.4485
20	28.8436	26.5731	24.7170
21	27.7065	25.4182	23.7984
22	25.9199	24.0844	23.1024
23	23.8524	22.5683	21.8053
24	22.1388	21.0800	20.3925



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.8

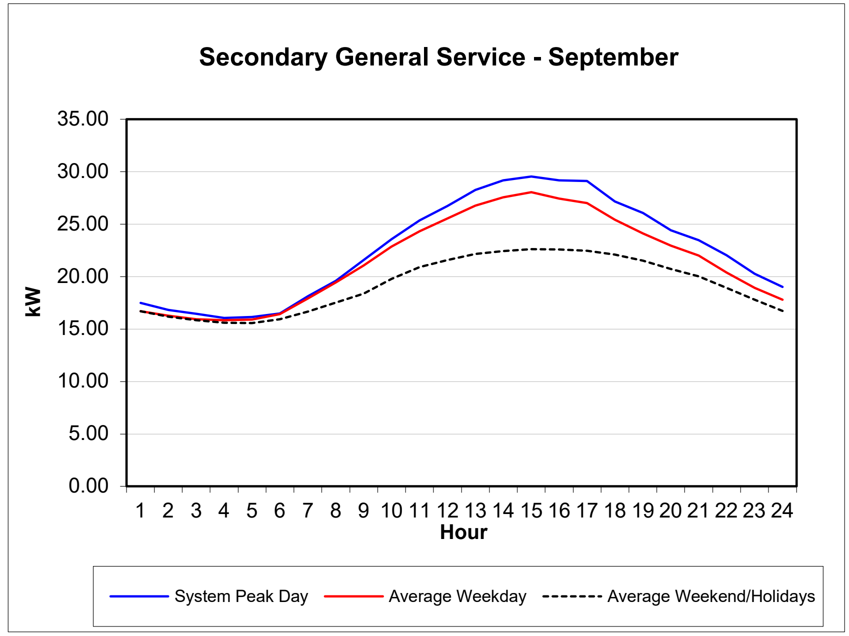
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	22.6837	20.3099	20.3203
2	22.1892	19.7897	19.7692
3	21.1868	19.3274	19.3230
4	21.0527	19.3427	19.1371
5	21.8453	19.5529	19.1285
6	22.5785	20.2754	19.5415
7	24.0773	22.0850	20.6313
8	25.3189	23.8607	21.7102
9	28.2720	26.1350	23.2775
10	30.6425	28.2747	24.9776
11	32.4013	29.7568	26.2238
12	34.2818	31.0215	26.8248
13	35.6036	31.8686	27.5305
14	36.9188	32.7800	27.6204
15	37.0177	33.2501	27.7991
16	36.2865	32.6950	27.4642
17	35.8940	31.7753	27.3958
18	33.8311	29.6356	26.7740
19	32.0599	28.1304	25.9870
20	31.5987	26.9678	25.3323
21	30.3959	25.8946	24.5570
22	27.2804	24.2987	23.3822
23	25.6604	22.7183	21.9353
24	24.1008	21.4058	20.7255



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.9

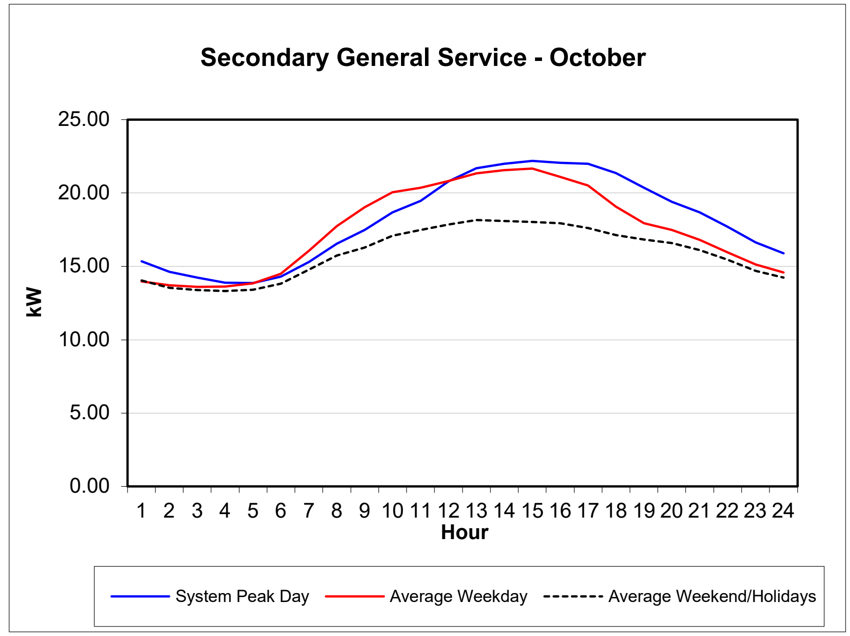
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	17.4948	16.6833	16.7055
2	16.8111	16.2636	16.1810
3	16.4403	15.9217	15.8422
4	16.0556	15.8434	15.5926
5	16.1572	15.9062	15.5600
6	16.4831	16.4302	15.9444
7	18.1163	17.9166	16.6629
8	19.5997	19.4494	17.5087
9	21.5748	21.0560	18.3737
10	23.5600	22.8385	19.7655
11	25.3577	24.3048	20.8920
12	26.7381	25.5392	21.5765
13	28.2475	26.7499	22.1645
14	29.1681	27.5516	22.4317
15	29.5332	28.0260	22.6145
16	29.1673	27.4178	22.5659
17	29.1146	27.0022	22.4610
18	27.1637	25.4243	22.0778
19	26.0541	24.0979	21.5089
20	24.4073	22.9473	20.7168
21	23.4661	21.9952	20.0034
22	22.0249	20.3983	18.9140
23	20.2655	18.9347	17.7850
24	19.0012	17.7987	16.7368



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.10

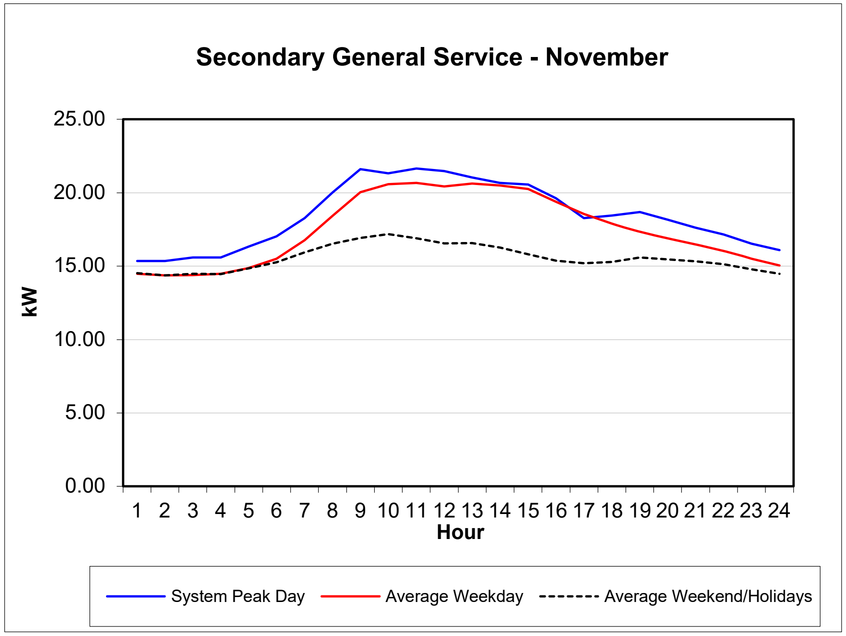
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	15.3470	13.9681	14.0372
2	14.6243	13.7073	13.5481
3	14.2454	13.6048	13.3890
4	13.8773	13.6321	13.3103
5	13.8637	13.8468	13.4189
6	14.2926	14.5009	13.8318
7	15.3072	16.0676	14.7832
8	16.5365	17.7342	15.7362
9	17.4866	19.0290	16.2944
10	18.6797	20.0533	17.0972
11	19.4690	20.3620	17.4882
12	20.7945	20.8176	17.8545
13	21.6913	21.3313	18.1559
14	21.9963	21.5597	18.0990
15	22.1768	21.6629	18.0323
16	22.0548	21.0873	17.9392
17	21.9986	20.5025	17.6216
18	21.3546	19.0718	17.1386
19	20.3548	17.9426	16.8253
20	19.3916	17.4769	16.5805
21	18.6690	16.8085	16.1038
22	17.6915	15.9632	15.4542
23	16.6267	15.1401	14.6975
24	15.8859	14.5885	14.2449



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.11

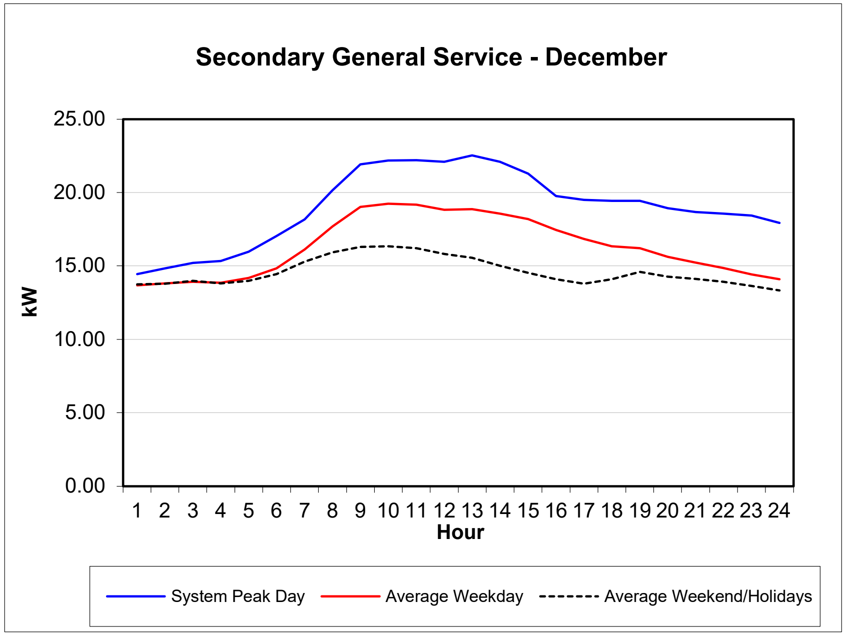
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	15.3613	14.4734	14.5158
2	15.3485	14.3717	14.3584
3	15.5912	14.4022	14.4777
4	15.5877	14.4717	14.4500
5	16.3327	14.8737	14.8473
6	17.0207	15.5056	15.2697
7	18.2748	16.7740	15.9442
8	20.0217	18.4276	16.5334
9	21.6074	20.0369	16.9160
10	21.3123	20.5842	17.1677
11	21.6320	20.6610	16.9048
12	21.4714	20.4349	16.5552
13	21.0358	20.6126	16.5729
14	20.6676	20.4870	16.2601
15	20.5570	20.2594	15.8067
16	19.6112	19.3855	15.3641
17	18.2717	18.5438	15.1925
18	18.4434	17.9031	15.2775
19	18.6798	17.3230	15.5820
20	18.1626	16.8936	15.4519
21	17.6085	16.4881	15.3277
22	17.1601	16.0309	15.1423
23	16.5226	15.4967	14.7875
24	16.0951	15.0509	14.4752



Southwestern Public Service Company
Hourly Load Profiles

Table E - 9.12

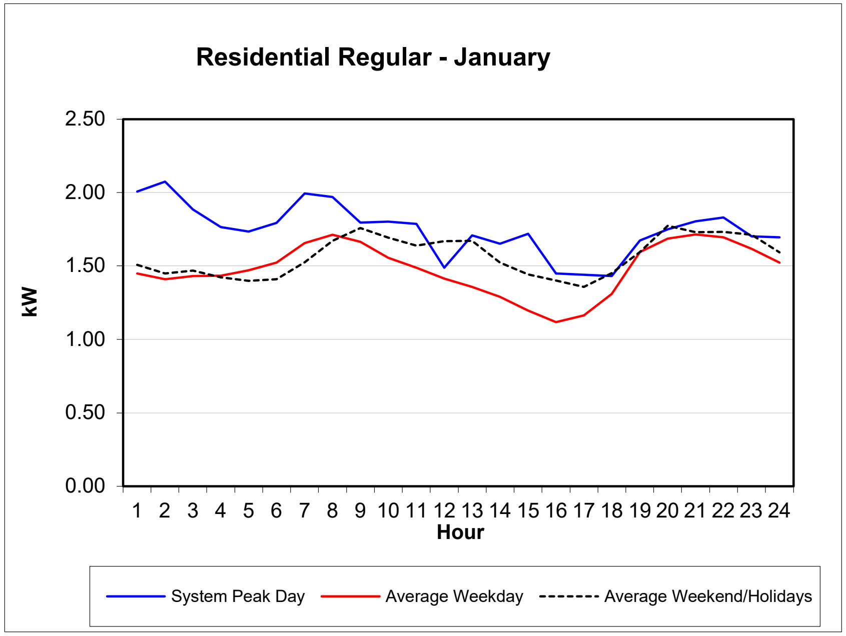
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	14.4412	13.6910	13.7482
2	14.8233	13.8180	13.7871
3	15.2027	13.9216	13.9886
4	15.3307	13.8448	13.8011
5	15.9644	14.1697	13.9922
6	17.0393	14.8359	14.4400
7	18.1631	16.1248	15.2979
8	20.1379	17.6896	15.9250
9	21.9203	19.0177	16.2859
10	22.1629	19.2371	16.3358
11	22.1943	19.1723	16.2056
12	22.0930	18.8196	15.8084
13	22.5304	18.8555	15.5604
14	22.0818	18.5520	14.9960
15	21.2712	18.1929	14.5300
16	19.7632	17.4349	14.1010
17	19.4959	16.8253	13.7958
18	19.4222	16.3244	14.0898
19	19.4229	16.2075	14.5854
20	18.9259	15.6144	14.2676
21	18.6733	15.2328	14.1044
22	18.5477	14.8613	13.9176
23	18.4343	14.4171	13.6344
24	17.9176	14.0858	13.3418



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.1

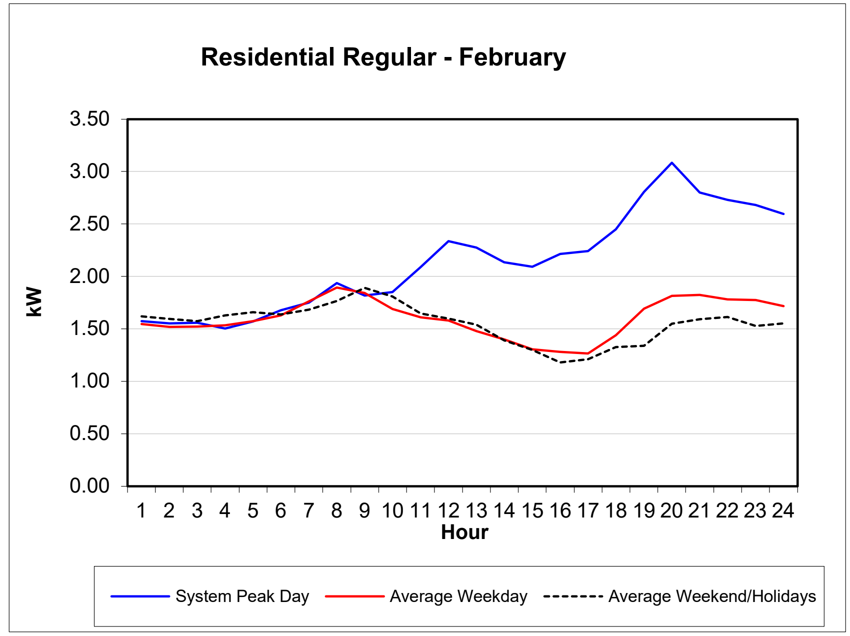
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.0072	1.4495	1.5073
2	2.0746	1.4095	1.4480
3	1.8850	1.4310	1.4677
4	1.7654	1.4337	1.4222
5	1.7346	1.4714	1.3983
6	1.7928	1.5219	1.4087
7	1.9929	1.6547	1.5256
8	1.9683	1.7113	1.6718
9	1.7958	1.6641	1.7591
10	1.8025	1.5562	1.6919
11	1.7856	1.4890	1.6392
12	1.4881	1.4129	1.6687
13	1.7080	1.3566	1.6709
14	1.6515	1.2900	1.5234
15	1.7194	1.1952	1.4417
16	1.4486	1.1192	1.4016
17	1.4411	1.1640	1.3577
18	1.4321	1.3093	1.4500
19	1.6736	1.5957	1.5942
20	1.7485	1.6851	1.7741
21	1.8028	1.7139	1.7294
22	1.8301	1.6959	1.7321
23	1.7009	1.6154	1.7131
24	1.6951	1.5226	1.5926



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.2

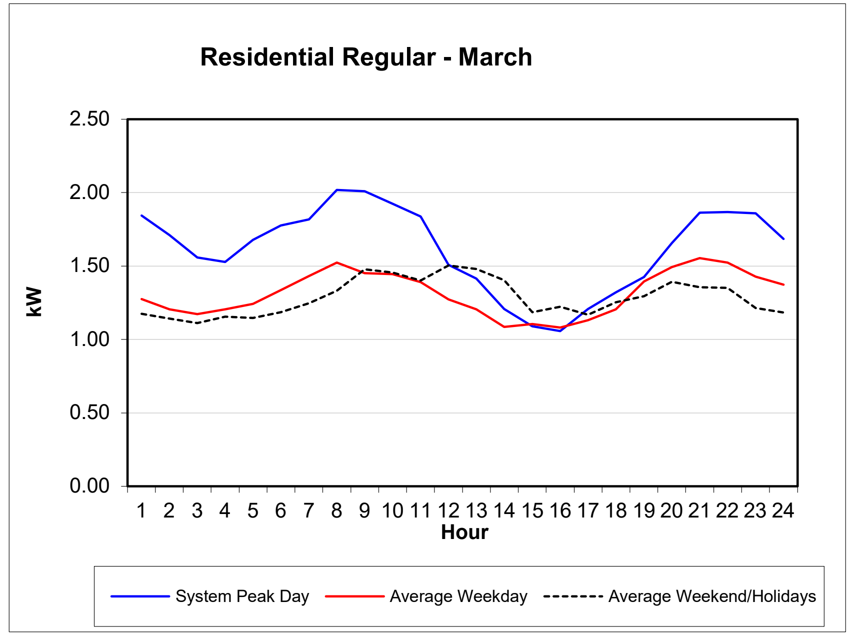
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.5735	1.5481	1.6207
2	1.5518	1.5196	1.5967
3	1.5598	1.5215	1.5757
4	1.5032	1.5345	1.6292
5	1.5719	1.5748	1.6596
6	1.6781	1.6289	1.6380
7	1.7501	1.7650	1.6834
8	1.9359	1.8934	1.7678
9	1.8198	1.8426	1.8915
10	1.8516	1.6900	1.8096
11	2.0885	1.6096	1.6476
12	2.3366	1.5795	1.5982
13	2.2759	1.4801	1.5407
14	2.1352	1.4006	1.3925
15	2.0917	1.3049	1.3013
16	2.2136	1.2807	1.1821
17	2.2435	1.2670	1.2116
18	2.4495	1.4415	1.3276
19	2.8075	1.6931	1.3403
20	3.0834	1.8143	1.5504
21	2.8003	1.8238	1.5928
22	2.7291	1.7810	1.6131
23	2.6816	1.7752	1.5283
24	2.5966	1.7165	1.5523



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.3

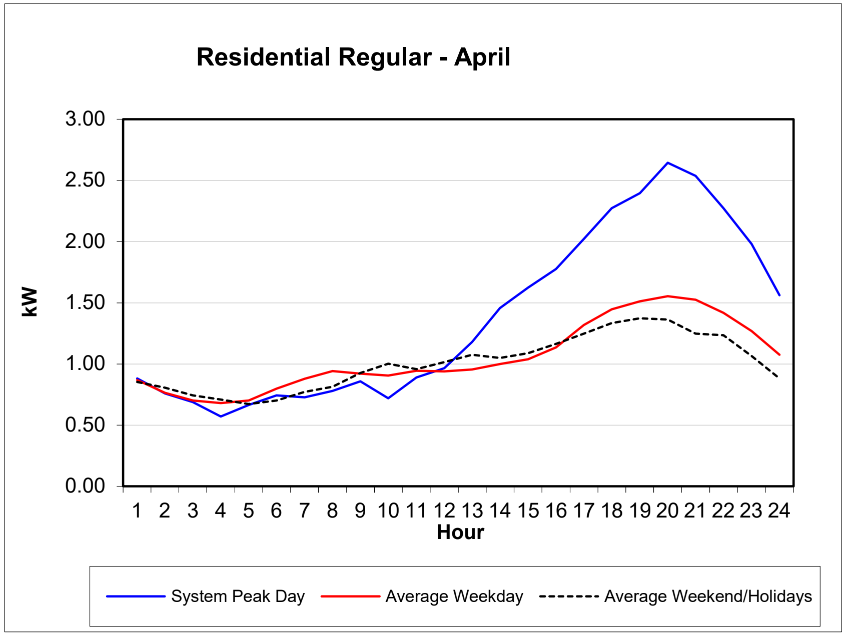
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.8427	1.2754	1.1753
2	1.7099	1.2059	1.1417
3	1.5576	1.1736	1.1118
4	1.5282	1.2046	1.1552
5	1.6780	1.2431	1.1465
6	1.7768	1.3359	1.1857
7	1.8165	1.4332	1.2477
8	2.0178	1.5235	1.3312
9	2.0088	1.4515	1.4777
10	1.9247	1.4450	1.4564
11	1.8365	1.3914	1.4010
12	1.5074	1.2721	1.5031
13	1.4145	1.2065	1.4796
14	1.2085	1.0859	1.4040
15	1.0905	1.1044	1.1859
16	1.0578	1.0818	1.2236
17	1.2087	1.1307	1.1682
18	1.3220	1.2054	1.2532
19	1.4255	1.3954	1.2942
20	1.6573	1.4931	1.3920
21	1.8631	1.5532	1.3550
22	1.8676	1.5228	1.3517
23	1.8587	1.4270	1.2146
24	1.6857	1.3734	1.1834



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.4

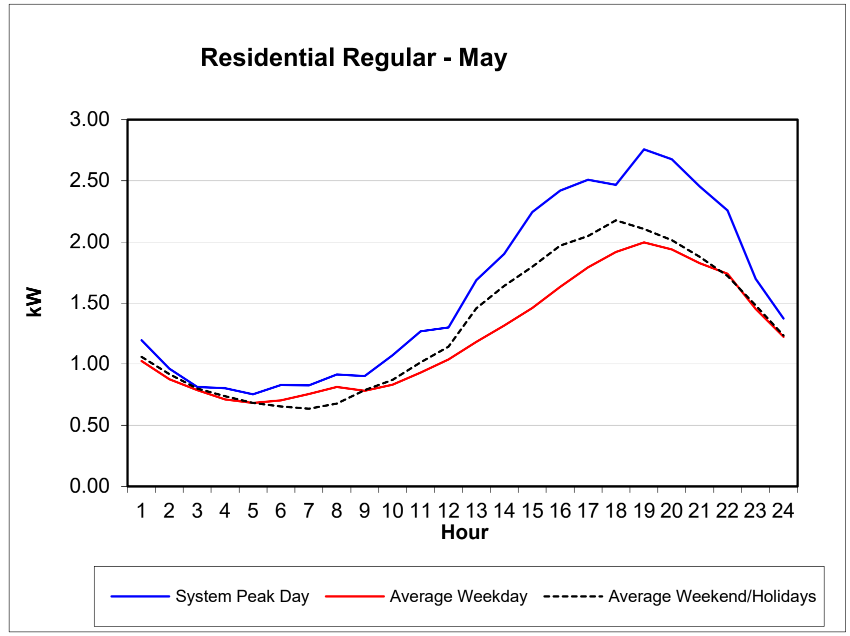
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.8830	0.8698	0.8543
2	0.7610	0.7655	0.8062
3	0.6881	0.7013	0.7436
4	0.5707	0.6806	0.7107
5	0.6665	0.7027	0.6730
6	0.7438	0.7997	0.7017
7	0.7291	0.8812	0.7726
8	0.7799	0.9428	0.8150
9	0.8588	0.9219	0.9267
10	0.7202	0.9068	1.0016
11	0.8911	0.9445	0.9584
12	0.9673	0.9394	1.0151
13	1.1809	0.9563	1.0764
14	1.4572	1.0004	1.0495
15	1.6248	1.0387	1.0896
16	1.7756	1.1372	1.1656
17	2.0222	1.3185	1.2483
18	2.2741	1.4461	1.3358
19	2.3960	1.5133	1.3744
20	2.6444	1.5523	1.3629
21	2.5380	1.5257	1.2492
22	2.2736	1.4192	1.2361
23	1.9812	1.2707	1.0666
24	1.5631	1.0773	0.8835



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.5

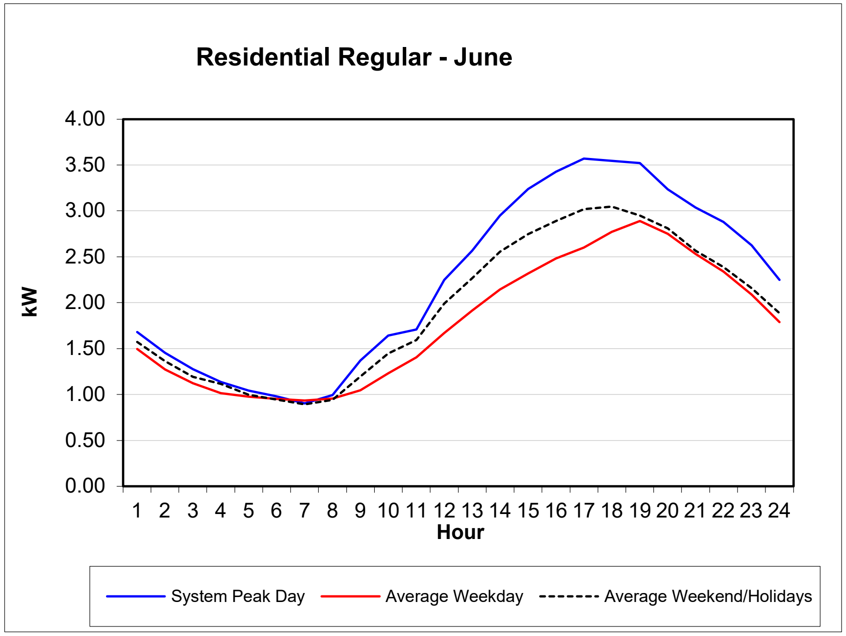
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.1963	1.0251	1.0576
2	0.9620	0.8765	0.9159
3	0.8119	0.7853	0.8004
4	0.8015	0.7106	0.7371
5	0.7529	0.6820	0.6821
6	0.8290	0.7038	0.6535
7	0.8265	0.7562	0.6364
8	0.9157	0.8125	0.6756
9	0.9010	0.7810	0.7869
10	1.0713	0.8311	0.8707
11	1.2702	0.9306	1.0143
12	1.3004	1.0365	1.1412
13	1.6892	1.1838	1.4589
14	1.9033	1.3171	1.6423
15	2.2448	1.4601	1.7971
16	2.4211	1.6326	1.9711
17	2.5080	1.7925	2.0480
18	2.4674	1.9181	2.1747
19	2.7558	1.9945	2.1056
20	2.6760	1.9385	2.0159
21	2.4526	1.8261	1.8782
22	2.2590	1.7399	1.7210
23	1.6997	1.4521	1.4821
24	1.3754	1.2247	1.2364



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.6

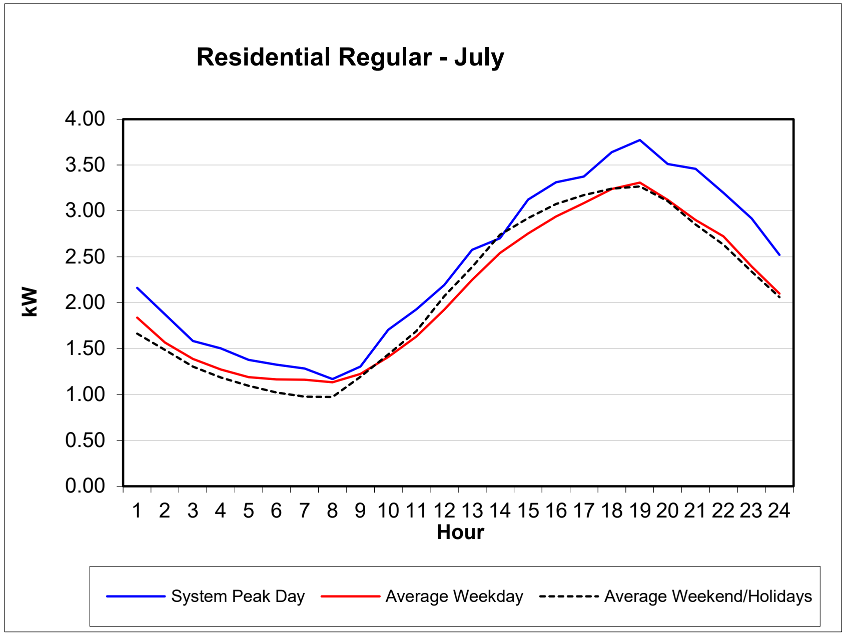
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.6790	1.4957	1.5736
2	1.4522	1.2706	1.3631
3	1.2765	1.1236	1.1906
4	1.1349	1.0154	1.1155
5	1.0409	0.9756	0.9962
6	0.9785	0.9514	0.9446
7	0.9048	0.9358	0.8945
8	0.9922	0.9538	0.9404
9	1.3685	1.0461	1.1968
10	1.6431	1.2307	1.4470
11	1.7065	1.4044	1.5926
12	2.2476	1.6693	1.9888
13	2.5636	1.9120	2.2665
14	2.9493	2.1427	2.5530
15	3.2382	2.3187	2.7462
16	3.4270	2.4814	2.8883
17	3.5708	2.5981	3.0188
18	3.5437	2.7698	3.0467
19	3.5195	2.8910	2.9475
20	3.2350	2.7487	2.8074
21	3.0361	2.5286	2.5638
22	2.8773	2.3387	2.3873
23	2.6233	2.0862	2.1566
24	2.2483	1.7889	1.8853



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.7

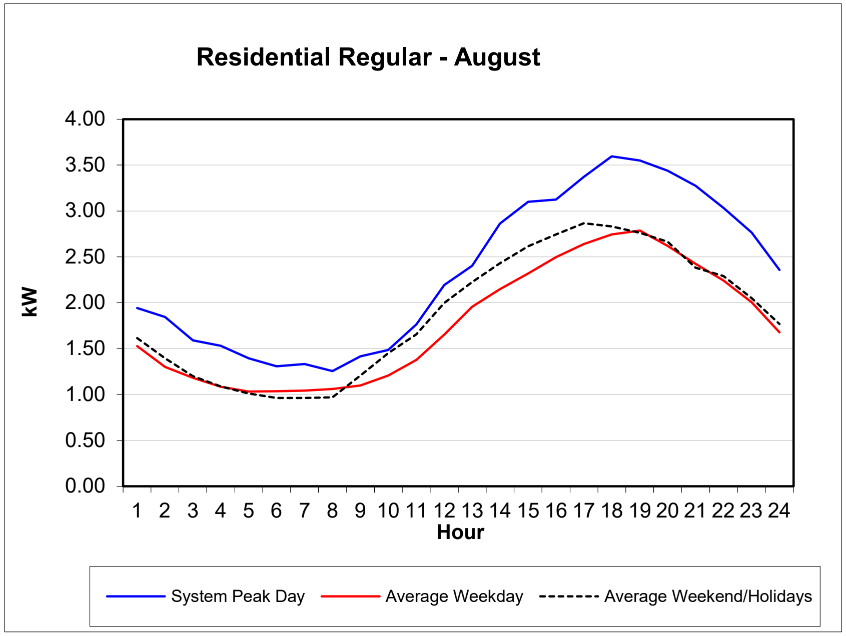
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	2.1631	1.8367	1.6630
2	1.8738	1.5668	1.4846
3	1.5833	1.3881	1.3037
4	1.5028	1.2726	1.1849
5	1.3778	1.1885	1.0956
6	1.3237	1.1639	1.0219
7	1.2817	1.1614	0.9783
8	1.1686	1.1353	0.9743
9	1.3030	1.2240	1.1914
10	1.7042	1.4100	1.4375
11	1.9276	1.6331	1.6905
12	2.1913	1.9251	2.0721
13	2.5763	2.2492	2.3871
14	2.7021	2.5404	2.7412
15	3.1218	2.7543	2.9219
16	3.3128	2.9387	3.0736
17	3.3726	3.0846	3.1731
18	3.6404	3.2395	3.2410
19	3.7705	3.3076	3.2652
20	3.5097	3.1212	3.1040
21	3.4569	2.9008	2.8527
22	3.1955	2.7220	2.6308
23	2.9182	2.3949	2.3376
24	2.5191	2.0984	2.0587



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.8

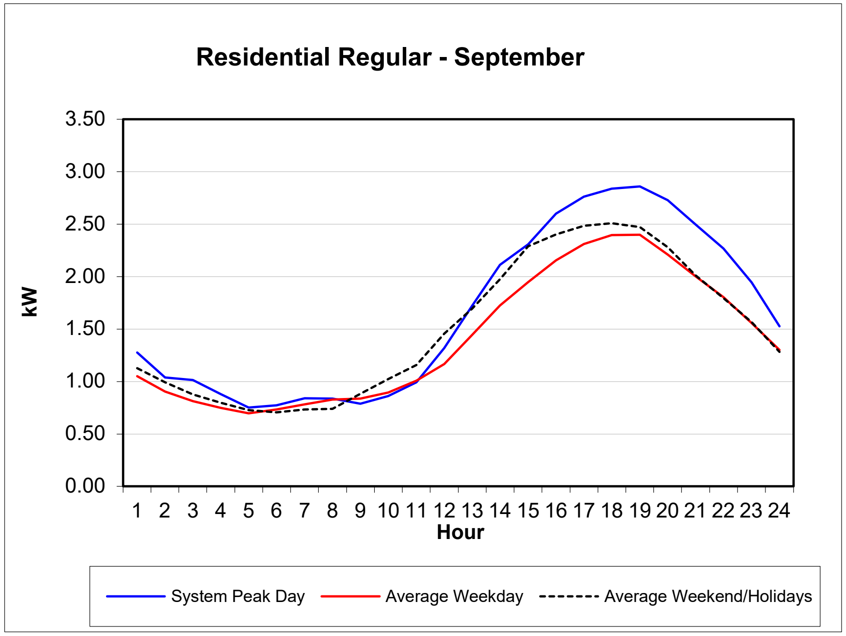
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.9422	1.5273	1.6166
2	1.8454	1.3014	1.3947
3	1.5914	1.1820	1.1987
4	1.5300	1.0838	1.0886
5	1.3968	1.0344	1.0116
6	1.3068	1.0370	0.9619
7	1.3335	1.0447	0.9648
8	1.2567	1.0620	0.9707
9	1.4151	1.1007	1.2086
10	1.4869	1.2073	1.4515
11	1.7641	1.3772	1.6584
12	2.1941	1.6534	1.9991
13	2.4018	1.9577	2.2234
14	2.8618	2.1487	2.4315
15	3.1009	2.3184	2.6151
16	3.1244	2.4959	2.7441
17	3.3704	2.6382	2.8667
18	3.5955	2.7431	2.8312
19	3.5481	2.7853	2.7614
20	3.4375	2.6176	2.6645
21	3.2746	2.4236	2.3815
22	3.0333	2.2417	2.2909
23	2.7631	2.0049	2.0514
24	2.3574	1.6791	1.7693



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.9

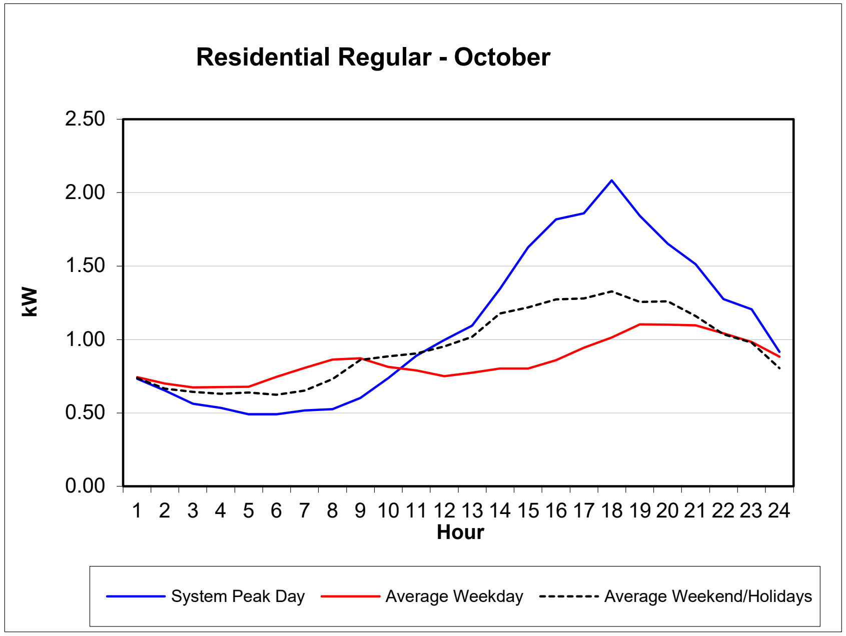
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.2760	1.0500	1.1278
2	1.0393	0.9047	0.9921
3	1.0144	0.8133	0.8784
4	0.8807	0.7475	0.7989
5	0.7509	0.6968	0.7265
6	0.7721	0.7334	0.7059
7	0.8406	0.7836	0.7338
8	0.8358	0.8281	0.7392
9	0.7882	0.8367	0.8822
10	0.8632	0.8966	1.0235
11	0.9930	1.0066	1.1562
12	1.3198	1.1652	1.4565
13	1.7226	1.4439	1.6930
14	2.1113	1.7231	1.9735
15	2.3061	1.9476	2.2885
16	2.5986	2.1550	2.4005
17	2.7598	2.3109	2.4848
18	2.8389	2.3962	2.5076
19	2.8596	2.3978	2.4704
20	2.7274	2.2105	2.2801
21	2.4969	2.0013	2.0114
22	2.2673	1.8046	1.7951
23	1.9446	1.5570	1.5650
24	1.5266	1.3007	1.2818



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.10

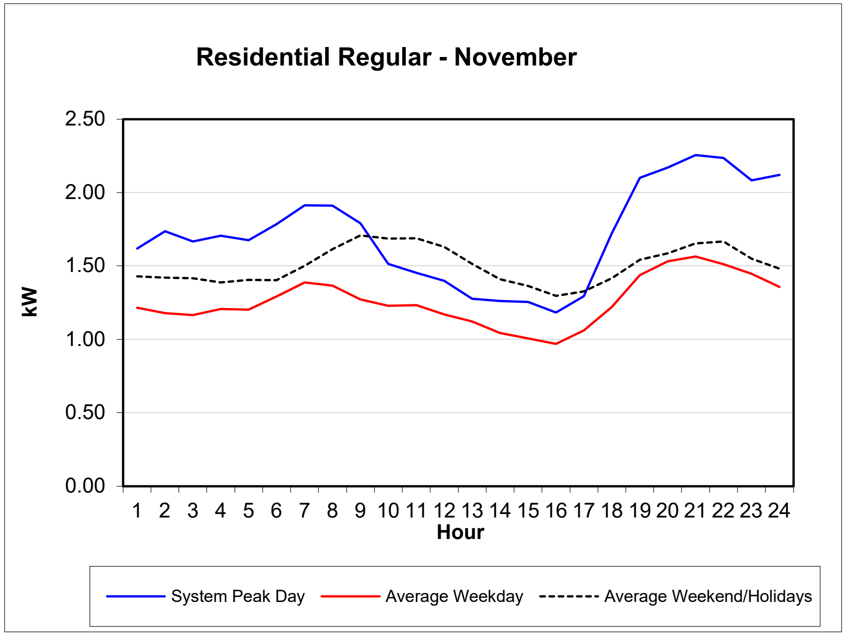
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	0.7337	0.7442	0.7371
2	0.6528	0.7019	0.6667
3	0.5626	0.6744	0.6452
4	0.5351	0.6779	0.6311
5	0.4910	0.6785	0.6389
6	0.4919	0.7474	0.6233
7	0.5174	0.8077	0.6530
8	0.5269	0.8646	0.7324
9	0.6038	0.8728	0.8627
10	0.7369	0.8150	0.8870
11	0.8894	0.7897	0.9063
12	0.9979	0.7514	0.9533
13	1.0950	0.7741	1.0185
14	1.3445	0.8028	1.1777
15	1.6289	0.8027	1.2194
16	1.8190	0.8594	1.2746
17	1.8593	0.9440	1.2804
18	2.0835	1.0146	1.3283
19	1.8418	1.1024	1.2567
20	1.6528	1.1011	1.2595
21	1.5122	1.0968	1.1610
22	1.2756	1.0430	1.0354
23	1.2054	0.9846	0.9794
24	0.9167	0.8843	0.8064



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.11

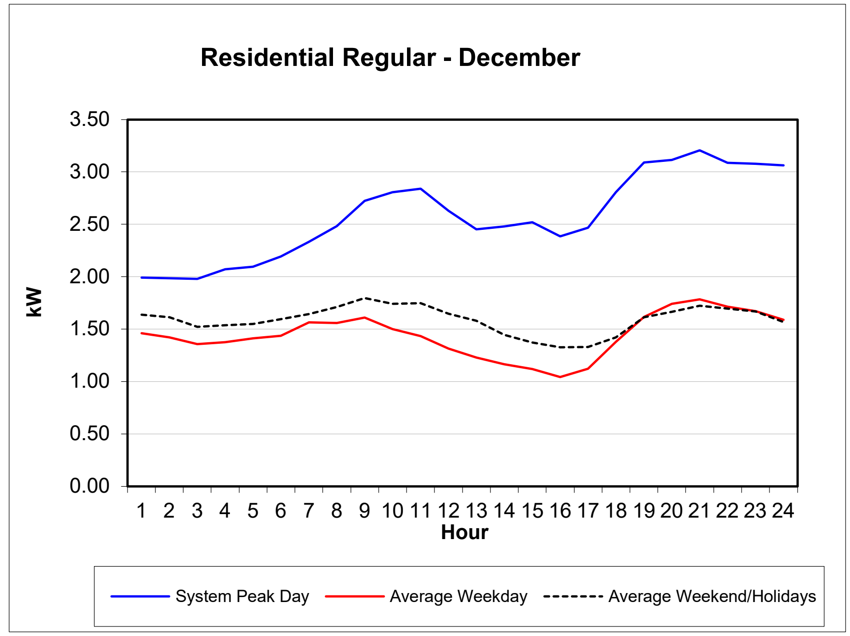
Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.6175	1.2157	1.4292
2	1.7356	1.1775	1.4202
3	1.6652	1.1648	1.4162
4	1.7059	1.2074	1.3883
5	1.6754	1.2020	1.4050
6	1.7843	1.2907	1.4024
7	1.9112	1.3864	1.4997
8	1.9109	1.3657	1.6148
9	1.7900	1.2715	1.7080
10	1.5126	1.2291	1.6863
11	1.4531	1.2323	1.6885
12	1.3977	1.1701	1.6286
13	1.2768	1.1213	1.5129
14	1.2611	1.0421	1.4084
15	1.2545	1.0063	1.3622
16	1.1832	0.9692	1.2972
17	1.2943	1.0611	1.3271
18	1.7215	1.2193	1.4150
19	2.0993	1.4370	1.5415
20	2.1689	1.5318	1.5863
21	2.2553	1.5650	1.6520
22	2.2349	1.5116	1.6655
23	2.0827	1.4456	1.5477
24	2.1183	1.3566	1.4804



Southwestern Public Service Company
Hourly Load Profiles

Table E - 10.12

Hour	System Peak Day (kW)	Average Weekday (kW)	Average Weekend/Holidays (kW)
1	1.9926	1.4610	1.6384
2	1.9840	1.4208	1.6123
3	1.9794	1.3584	1.5206
4	2.0713	1.3743	1.5359
5	2.0955	1.4117	1.5491
6	2.1919	1.4356	1.5943
7	2.3332	1.5647	1.6448
8	2.4822	1.5596	1.7111
9	2.7247	1.6102	1.7979
10	2.8054	1.4994	1.7414
11	2.8384	1.4321	1.7478
12	2.6284	1.3135	1.6481
13	2.4524	1.2297	1.5805
14	2.4789	1.1640	1.4463
15	2.5200	1.1206	1.3716
16	2.3841	1.0427	1.3265
17	2.4667	1.1221	1.3306
18	2.8070	1.3789	1.4210
19	3.0876	1.6157	1.6132
20	3.1123	1.7411	1.6651
21	3.2060	1.7851	1.7220
22	3.0851	1.7149	1.6972
23	3.0775	1.6719	1.6674
24	3.0615	1.5881	1.5663



Appendix G

Econometric Model Parameters

Southwestern Public Service Company
Econometric Model Parameters

The parameters associated with SPS's econometric forecasting models are provided in the following tables:

- Table F-1 through F-9 – Retail Energy Sales – Residential;
- Table F-10 through F-24 – Retail Energy Sales - Commercial and Industrial;
- Table F-25 through F-30 – Retail Energy Sales - Other Public Authority;
- Table F-31 through F-48 – Retail Customers;
- Table F-49 through F-51 – Coincident Peak Demand – Retail; and
- Table F-52 through F-57 – Probability Distribution.

Table F-1: Retail Sales - New Mexico Residential Service

Dependent Variable: S_ResService_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_ResService_NM = C(1)*ResCust_BillDays + C(2)*NM_Econ.NM_Oil_IHS_Con + C(3)*H65_bill_ResSvc_NM_Jan + C(4)*H65_bill_ResSvc_NM_Feb + C(5)*H65_bill_ResSvc_NM_Mar + C(6)*C65_bill_ResSvc_NM_May + C(7)*C65_bill_ResSvc_NM_Jun + C(8)*C65_bill_ResSvc_NM_Jul + C(9)*C65_bill_ResSvc_NM_Aug + C(10)*C65_bill_ResSvc_NM_Sep + C(11)*H65_bill_ResSvc_NM_Dec + C(12)*C65_bill_ResSvc_NM_Oct + C(13)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.020	0.001	39.01746	0.0%
C(2)	4.302	1.153	3.73096	0.0%
C(3)	0.001	0.000	28.88998	0.0%
C(4)	0.000	0.000	21.81377	0.0%
C(5)	0.000	0.000	15.34501	0.0%
C(6)	0.000	0.000	3.68829	0.0%
C(7)	0.001	0.000	21.51122	0.0%
C(8)	0.001	0.000	35.19704	0.0%
C(9)	0.001	0.000	38.59153	0.0%
C(10)	0.001	0.000	26.82475	0.0%
C(11)	0.000	0.000	15.80814	0.0%
C(12)	0.001	0.000	9.52609	0.0%
C(13)	0.596	0.065	9.23780	0.0%

Table F-2: Retail Sales - New Mexico Residential Service – Regression Statistics

Retail Sales - New Mexico Residential Service

Model Statistics	
Adjusted Observations	179
R-Squared	0.9667
Adjusted R-Squared	0.9643
AIC	15.648
BIC	15.880
Log-Likelihood	-1,641.501
Model Sum of Squares	28,059,331,052.442
Sum of Squared Errors	967,571,285.99
Std. Error of Regression	2,414.28
Durbin-Watson Statistic	1.88
Mean dependent var	85,517.80
StdDev dependent var	3,882.64

Table F-3: Retail Sales - New Mexico Residential Service – Definitions

Retail Sales - New Mexico Residential Service

Variable Name	Definition
S_ResService_NM	Residential Service sales in New Mexico
ResCust_BillDays	New Mexico residential customers multiplied by billing days
NM_Econ.NM_Oil_IHS_Con	New Mexico oil production forecast, held constant after peak
H65_bill_ResSvc_NM_Jan	Heating degree days (January) multiplied by customers
H65_bill_ResSvc_NM_Feb	Heating degree days (February) multiplied by customers
H65_bill_ResSvc_NM_Mar	Heating degree days (March) multiplied by customers
C65_bill_ResSvc_NM_May	Cooling degree days (May) multiplied by customers
C65_bill_ResSvc_NM_Jun	Cooling degree days (June) multiplied by customers
C65_bill_ResSvc_NM_Jul	Cooling degree days (July) multiplied by customers
C65_bill_ResSvc_NM_Aug	Cooling degree days (August) multiplied by customers
C65_bill_ResSvc_NM_Sep	Cooling degree days (September) multiplied by customers
H65_bill_ResSvc_NM_Dec	Heating degree days (December) multiplied by customers
C65_bill_ResSvc_NM_Oct	Cooling degree days (October) multiplied by customers
AR(1)	First-order autoregressive term

Table F-4: Retail Sales – New Mexico Residential Space Heating Service

Retail Sales - New Mexico Residential Space Heat Service

Dependent Variable: S_ResSpaceHeat_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_ResSpaceHeat_NM = C(1)*ResCust_BillDays + C(2)*H65_bill_ResSpHt_NM_Jan + C(3)*H65_bill_ResSpHt_NM_Feb + C(4)*H65_bill_ResSpHt_NM_Mar + C(5)*C65_bill_ResSpHt_NM_Jun + C(6)*C65_bill_ResSpHt_NM_Jul + C(7)*C65_bill_ResSpHt_NM_Aug + C(8)*C65_bill_ResSpHt_NM_Sep + C(9)*H65_bill_ResSpHt_NM_Nov + C(10)*H65_bill_ResSpHt_NM_Dec + C(11)*HolidayVariable + C(12)*Outlier_2011_01 + C(13)*Outlier_2013_12 + C(14)*Outlier_2014_12 + C(15)*Outlier_2019_10 + C(16)*Outlier_2023_03 + C(17)*MA(1) + C(18)*MA(2)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	33.514	0.473	70.81350	0.0%
C(2)	0.001	0.000	39.27585	0.0%
C(3)	0.001	0.000	31.58310	0.0%
C(4)	0.001	0.000	23.50857	0.0%
C(5)	0.001	0.000	12.66243	0.0%
C(6)	0.001	0.000	21.73181	0.0%
C(7)	0.001	0.000	25.12674	0.0%
C(8)	0.001	0.000	15.38784	0.0%
C(9)	0.001	0.000	3.36117	0.1%
C(10)	0.001	0.000	9.27708	0.0%
C(11)	-6654.194	1961.344	-3.39267	0.1%
C(12)	-6181.687	1993.282	-3.10126	0.2%
C(13)	9472.327	1992.776	4.75333	0.0%
C(14)	9570.765	1992.954	4.80230	0.0%
C(15)	4993.795	2006.668	2.48860	1.4%
C(16)	-6231.991	2039.919	-3.05502	0.3%
C(17)	0.514	0.079	6.54945	0.0%
C(18)	0.335	0.077	4.32259	0.0%

Table F-5: Retail Sales - New Mexico Residential Space Heating Service – Regression Statistics

Retail Sales - New Mexico Residential Space Heat Service

Model Statistics	
Adjusted Observations	180
R-Squared	0.9640
Adjusted R-Squared	0.9603
AIC	15.476
BIC	15.795
Log-Likelihood	-1,630.243
Model Sum of Squares	20,787,948,029.671
Sum of Squared Errors	775,402,673.33
Std. Error of Regression	2,187.79
Durbin-Watson Statistic	1.98
Mean dependent var	19,347.15
StdDev dependent var	1,511.34

Table F-6: Retail Sales - New Mexico Residential Space Heating Service – Definitions

Retail Sales - New Mexico Residential Space Heat Service

Variable Name	Definition
S_ResSpaceHeat_NM	Residential Space Heating Service sales in New Mexico
ResCust_BillDays	New Mexico residential customers multiplied by billing days
H65_bill_ResSpHt_NM_Jan	Heating degree days (January) multiplied by customers
H65_bill_ResSpHt_NM_Feb	Heating degree days (February) multiplied by customers
H65_bill_ResSpHt_NM_Mar	Heating degree days (March) multiplied by customers
C65_bill_ResSpHt_NM_Jun	Cooling degree days (June) multiplied by customers
C65_bill_ResSpHt_NM_Jul	Cooling degree days (July) multiplied by customers
C65_bill_ResSpHt_NM_Aug	Cooling degree days (August) multiplied by customers
C65_bill_ResSpHt_NM_Sep	Cooling degree days (September) multiplied by customers
H65_bill_ResSpHt_NM_Nov	Heating degree days (November) multiplied by customers
H65_bill_ResSpHt_NM_Dec	Heating degree days (December) multiplied by customers
HolidayVariable	Binary variable for November and December=1, otherwise =0
Outlier_2011_01	Binary variable for January 2011 = 1, otherwise = 0
Outlier_2013_12	Binary variable for December 2013 = 1, otherwise = 0
Outlier_2014_12	Binary variable for December 2014 = 1, otherwise = 0
Outlier_2019_10	Binary variable for October 2019 = 1, otherwise = 0
Outlier_2023_03	Binary variable for March 2023 = 1, otherwise = 0
MA(1)	First-order autoregressive term
MA(2)	First-order Moving Average

Table F-7: Retail Sales – Texas Residential Service

Retail Sales - Texas Residential Service

Dependent Variable: S_Res_TX_Total				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_Res_TX_Total = C(1)*TX_Pop_BillDays + C(2)*H65_bill_Res_TX_Jan + C(3)*H65_bill_Res_TX_Feb + C(4)*H65_bill_Res_TX_Mar + C(5)*H65_bill_Res_TX_Apr + C(6)*C65_bill_Res_TX_May + C(7)*C65_bill_Res_TX_Jun + C(8)*C65_bill_Res_TX_Jul + C(9)*C65_bill_Res_TX_Aug + C(10)*C65_bill_Res_TX_Sep + C(11)*C65_bill_Res_TX_Oct + C(12)*H65_bill_Res_TX_Nov + C(13)*H65_bill_Res_TX_Dec + C(14)*Outlier_2013_12 + C(15)*Outlier_2020_05 + C(16)*Outlier_2023_01 + C(17)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	7448.319	142.319	52.33546	0.0%
C(2)	0.001	0.000	35.15282	0.0%
C(3)	0.001	0.000	29.56342	0.0%
C(4)	0.001	0.000	21.00000	0.0%
C(5)	0.000	0.000	7.34773	0.0%
C(6)	0.001	0.000	7.70716	0.0%
C(7)	0.001	0.000	26.85655	0.0%
C(8)	0.002	0.000	45.82462	0.0%
C(9)	0.002	0.000	49.87462	0.0%
C(10)	0.001	0.000	35.88356	0.0%
C(11)	0.001	0.000	13.99666	0.0%
C(12)	0.000	0.000	8.67019	0.0%
C(13)	0.001	0.000	20.45259	0.0%
C(14)	26495.404	7092.338	3.73578	0.0%
C(15)	21122.744	7014.431	3.01133	0.3%
C(16)	18237.871	6960.619	2.62015	1.0%
C(17)	0.195	0.077	2.51518	1.3%

Table F-8: Retail Sales – Texas Residential Service – Regression Statistics

Retail Sales - Texas Residential Service

Model Statistics	
Adjusted Observations	180
R-Squared	0.9819
Adjusted R-Squared	0.9801
AIC	17.768
BIC	18.070
Log-Likelihood	-1,837.547
Model Sum of Squares	419,839,238,110.320
Sum of Squared Errors	7,760,128,044.39
Std. Error of Regression	6,899.87
Durbin-Watson Statistic	1.97
Mean dependent var	1,681.27
StdDev dependent var	65.43

Table F-9: Retail Sales – Texas Residential Service – Definitions

Retail Sales - Texas Residential Service

Variable Name	Definition
S_Res_TX_Total	Residential Service sales in Texas
TX_Pop_BillDays	Texas residential customers multiplied by billing days
H65_bill_Res_TX_Jan	Heating degree days (January) multiplied by customers
H65_bill_Res_TX_Feb	Heating degree days (February) multiplied by customers
H65_bill_Res_TX_Mar	Heating degree days (March) multiplied by customers
H65_bill_Res_TX_Apr	Heating degree days (April) multiplied by customers
C65_bill_Res_TX_May	Cooling degree days (May) multiplied by customers
C65_bill_Res_TX_Jun	Cooling degree days (June) multiplied by customers
C65_bill_Res_TX_Jul	Cooling degree days (July) multiplied by customers
C65_bill_Res_TX_Aug	Cooling degree days (August) multiplied by customers
C65_bill_Res_TX_Sep	Cooling degree days (September) multiplied by customers
C65_bill_Res_TX_Oct	Cooling degree days (October) multiplied by customers
H65_bill_Res_TX_Nov	Heating degree days (November) multiplied by customers
H65_bill_Res_TX_Dec	Heating degree days (December) multiplied by customers
Outlier_2013_12	Binary variable for December 2013=1, otherwise =0
Outlier_2020_05	First-order autoregressive term
Outlier_2023_01	Binary variable for January 2023=1, otherwise =0
MA(1)	First-order Moving Average

Table F-10: Retail Sales – New Mexico Small Commercial and Industrial Service

Retail Sales - New Mexico Small Commercial and Industrial

Dependent Variable: S_SmCI_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_SmCI_NM = C(1)*CONST + C(2)*SCICust_BillDays + C(3)*EE_NM + C(4)*NM_Oil_Platts_IHS + C(5)*H65_bill_SMCI_NM_Feb + C(6)*C65_bill_SMCI_NM_Jun + C(7)*C65_bill_SMCI_NM_Jul + C(8)*C65_bill_SMCI_NM_Aug + C(9)*C65_bill_SMCI_NM_Sep + C(10)*H65_bill_SMCI_NM_Nov + C(11)*H65_bill_SMCI_NM_Dec + C(12)*Outlier_2008_07 + C(13)*Outlier_2020_03 + C(14)*Outlier_2023_03 + C(15)*AR(1) + C(16)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-65430.282	28841.642	-2.26860	2.5%
C(2)	0.175	0.014	12.93336	0.0%
C(3)	687.298	280.436	2.45082	1.5%
C(4)	33.608	3.977	8.45040	0.0%
C(5)	0.000	0.000	-3.45272	0.1%
C(6)	0.002	0.000	10.30806	0.0%
C(7)	0.002	0.000	13.52797	0.0%
C(8)	0.002	0.000	15.79455	0.0%
C(9)	0.002	0.000	11.40236	0.0%
C(10)	-0.001	0.000	-2.14792	3.3%
C(11)	-0.001	0.000	-5.88013	0.0%
C(12)	14270.601	5465.511	2.61103	1.0%
C(13)	26523.325	5421.085	4.89262	0.0%
C(14)	13902.778	5461.435	2.54563	1.2%
C(15)	0.898	0.061	14.68265	0.0%
C(16)	-0.602	0.102	-5.91787	0.0%

Table F-11: Retail Sales - New Mexico Small Commercial and Industrial – Regression Statistics

Retail Sales - New Mexico Small Commercial and Industrial

Model Statistics	
Adjusted Observations	179
R-Squared	0.9633
Adjusted R-Squared	0.9600
AIC	17.371
BIC	17.656
Log-Likelihood	-1,792.724
Model Sum of Squares	137,720,676,853.475
Sum of Squared Errors	5,241,856,052.88
Std. Error of Regression	5,670.86
Durbin-Watson Statistic	2.08
Mean dependent var	197,250.728
StdDev dependent var	6,566.667

Table F-12: Retail Sales - New Mexico Small Commercial and Industrial Service – Definitions

Retail Sales - New Mexico Small Commercial and Industrial

Variable Name	Definition
S_SmCI_NM	Small Commercial & Industrial sales in New Mexico
CONST	Constant variable
SCICust_BillDays	New Mexico Small Commercial and Industrial customers multiplied by billing days
EE_NM	Total non-farm employment in New Mexico service territory
NM_Oil_Platts_IHS	New Mexico Permian oil production
H65_bill_SMCI_NM_Feb	Heating degree days (February) multiplied by customers
C65_bill_SMCI_NM_Jun	Cooling degree days (June) multiplied by customers
C65_bill_SMCI_NM_Jul	Cooling degree days (July) multiplied by customers
C65_bill_SMCI_NM_Aug	Cooling degree days (August) multiplied by customers
C65_bill_SMCI_NM_Sep	Cooling degree days (September) multiplied by customers
H65_bill_SMCI_NM_Nov	Heating degree days (November) multiplied by customers
H65_bill_SMCI_NM_Dec	Heating degree days (December) multiplied by customers
Outlier_2008_07	Binary variable for July 2008=1, otherwise =0
Outlier_2020_03	Binary variable for March 2020=1, otherwise =0
Outlier_2023_03	Binary variable for March 2023=1, otherwise =0
AR(1)	First-order autoregressive term
MA(1)	First-order Moving Average

Table F-13: Retail Sales – Texas Small Commercial and Industrial Service

Retail Sales - Texas Small Commercial and Industrial

Dependent Variable: S_SmCI_TX				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_SmCI_TX = C(1)*NR_TX + C(2)*C65_bill_SMCI_TX_May + C(3)*C65_bill_SMCI_TX_Jun + C(4)*C65_bill_SMCI_TX_Jul + C(5)*C65_bill_SMCI_TX_Aug + C(6)*C65_bill_SMCI_TX_Sep + C(7)*C65_bill_SMCI_TX_Oct + C(8)*H65_bill_SMCI_TX_Jan + C(9)*H65_bill_SMCI_TX_Nov_Dec + C(10)*Nov + C(11)*Outlier_2010_11 + C(12)*Outlier_2023_03 + C(13)*AR(1) + C(14)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	399.803	7.615	52.50239	0.0%
C(2)	0.005	0.001	5.00002	0.0%
C(3)	0.004	0.000	12.63276	0.0%
C(4)	0.004	0.000	19.09716	0.0%
C(5)	0.004	0.000	23.62865	0.0%
C(6)	0.004	0.000	16.76898	0.0%
C(7)	0.004	0.001	6.07409	0.0%
C(8)	0.001	0.000	9.20377	0.0%
C(9)	0.001	0.000	8.53151	0.0%
C(10)	-20216.879	4183.684	-4.83232	0.0%
C(11)	43943.067	14839.726	2.96118	0.4%
C(12)	41368.235	14481.776	2.85657	0.5%
C(13)	0.957	0.010	92.36956	0.0%
C(14)	-0.870	0.041	-21.01940	0.0%

Table F-14: Retail Sales - Texas Small Commercial and Industrial Service – Regression Statistics

Retail Sales - Texas Small Commercial and Industrial

Model Statistics	
Adjusted Observations	179
R-Squared	0.8665
Adjusted R-Squared	0.8560
AIC	19.230
BIC	19.479
Log-Likelihood	-1,961.067
Model Sum of Squares	223,272,989,060.601
Sum of Squared Errors	34,384,422,663.55
Std. Error of Regression	14,435.73
Durbin-Watson Statistic	1.87
Mean dependent var	4,367.09
StdDev dependent var	158.65

Table F-15: Retail Sales - Texas Small Commercial and Industrial Service – Definitions

Retail Sales - Texas Small Commercial and Industrial

Variable Name	Definition
S_SmCI_TX	Small Commercial and Industrial Service sales in Texas
NR_TX	Population in Texas service territory
C65_bill_SMCI_TX_May	Cooling degree days (May) multiplied by customers
C65_bill_SMCI_TX_Jun	Cooling degree days (June) multiplied by customers
C65_bill_SMCI_TX_Jul	Cooling degree days (July) multiplied by customers
C65_bill_SMCI_TX_Aug	Cooling degree days (August) multiplied by customers
C65_bill_SMCI_TX_Sep	Cooling degree days (September) multiplied by customers
C65_bill_SMCI_TX_Oct	Cooling degree days (October) multiplied by customers
H65_bill_SMCI_TX_Jan	Heating degree days (January) multiplied by customers
H65_bill_SMCI_TX_Nov_Dec	Heating degree days (November and December) multiplied by custor
Nov	Seasonal binary variable, November=1, otherwise =0
Outlier_2010_11	Binary variable for November 2010=1, otherwise=0
Outlier_2023_03	Binary variable for March 2023=1, otherwise=0
AR(1)	First-order autoregressive term
MA(1)	First-order moving average term

Table F-16: Retail Sales – New Mexico Large Commercial and Industrial Service

Retail Sales - New Mexico Large Commercial and Industrial

Dependent Variable: S_LGCI_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_LGCI_NM = C(1)*CONST + C(2)*NM_Oil_Con + C(3)*Feb + C(4)*Mar + C(5)*May + C(6)*Oct + C(7)*Nov + C(8)*AR(1) + C(9)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	120603.096	3639.570	33.13663	0.0%
C(2)	216.132	4.338	49.82304	0.0%
C(3)	-20294.597	3611.449	-5.61952	0.0%
C(4)	-18773.495	3610.633	-5.19950	0.0%
C(5)	-10299.185	3586.681	-2.87151	0.5%
C(6)	-13642.253	3588.463	-3.80170	0.0%
C(7)	-10249.926	3592.854	-2.85286	0.5%
C(8)	0.876	0.090	9.73161	0.0%
C(9)	-0.749	0.125	-5.98884	0.0%

Table F-17: Retail Sales - New Mexico Large Commercial and Industrial Service – Regression Statistics

Retail Sales - New Mexico Large Commercial and Industrial

Model Statistics	
Adjusted Observations	179
R-Squared	0.9825
Adjusted R-Squared	0.9816
AIC	19.092
BIC	19.252
Log-Likelihood	-1,953.694
Model Sum of Squares	1,774,512,026,658.360
Sum of Squared Errors	31,665,512,259.12
Std. Error of Regression	13,647.99
Durbin-Watson Statistic	2.08
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-18: Retail Sales - New Mexico Large Commercial and Industrial Service – Definitions

Retail Sales - New Mexico Large Commercial and Industrial

Variable Name	Definition
S_LGCI_NM	Large Commercial & Industrial sales in New Mexico
CONST	Constant variable
NM_Oil_Con	New Mexico Permian oil production held constant in future months
Feb	Seasonal binary variable, February=1, otherwise =0
Mar	Seasonal binary variable, March=1, otherwise =0
May	Seasonal binary variable, May=1, otherwise =0
Oct	Seasonal binary variable, October=1, otherwise =0
Nov	Seasonal binary variable, November=1, otherwise =0
AR(1)	First-order autoregressive term
MA(1)	First-order Moving Average

Table F-19: Retail Sales – Texas Large Commercial and Industrial Service

Retail Sales - Texas Large Commercial and Industrial-Other

Dependent Variable: S_LgCInoOXY				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_LgCInoOXY = C(1)*CONST + C(2)*LagDep(1) + C(3)*Expr1 + C(4)*Mar + C(5)*Feb + C(6)*May + C(7)*Jul + C(8)*Aug + C(9)*Sep + C(10)*Outlier_2008_12 + C(11)*Outlier_2012_06 + C(12)*Outlier_2012_07 + C(13)*Outlier_2020_05 + C(14)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	207597.570	24420.404	8.50099	0.0%
C(2)	0.385	0.072	5.32930	0.0%
C(3)	39591.470	14519.229	2.72683	0.7%
C(4)	-23260.035	3328.419	-6.98831	0.0%
C(5)	-16114.216	3360.329	-4.79543	0.0%
C(6)	-11180.672	3214.169	-3.47856	0.1%
C(7)	6548.413	3489.383	1.87667	6.2%
C(8)	16032.570	3684.538	4.35131	0.0%
C(9)	18929.962	3469.812	5.45562	0.0%
C(10)	37234.695	11687.564	3.18584	0.2%
C(11)	-46484.022	12443.199	-3.73570	0.0%
C(12)	73226.235	13641.177	5.36803	0.0%
C(13)	-41375.771	12409.063	-3.33432	0.1%
C(14)	0.363	0.101	3.58450	0.0%

Table F-20: Retail Sales - Texas Large Commercial and Industrial Service – Regression Statistics

Retail Sales - Texas Large Commercial and Industrial-Other

Model Statistics	
Adjusted Observations	179
R-Squared	0.7645
Adjusted R-Squared	0.7460
AIC	18.925
BIC	19.175
Log-Likelihood	-1,933.814
Model Sum of Squares	82,322,557,387.238
Sum of Squared Errors	25,358,276,675.40
Std. Error of Regression	12,397.04
Durbin-Watson Statistic	2.10
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-21: Retail Sales - Texas Large Commercial and Industrial Service – Definitions

Retail Sales - Texas Large Commercial and Industrial-Other

Variable Name	Definition
S_LgCInoOXY	Large Commercial and Industrial sales in Texas excluding Oxy
CONST	Constant variable
LagDep(1)	S_LgCInoOXY lagged by one month
Expr1	Year-over-year change in Texas service territory oil production
Mar	Seasonal binary variable, March=1, otherwise =0
Feb	Seasonal binary variable, February=1, otherwise =0
May	Seasonal binary variable, May=1, otherwise =0
Jul	Seasonal binary variable, July=1, otherwise =0
Aug	Seasonal binary variable, August=1, otherwise =0
Sep	Seasonal binary variable, September=1, otherwise =0
Outlier_2008_12	Binary variable for December 2008=1, otherwise =0
Outlier_2012_06	Binary variable for June 2012=1, otherwise =0
Outlier_2012_07	Binary variable for July 2012=1, otherwise =0
Outlier_2020_05	Binary variable for May 2020=1, otherwise =0
AR(1)	First-order autoregressive term

Table F-22: Retail Sales – Texas Large Commercial and Industrial Service

Retail Sales - Texas Large Commercial and Industrial -OXY

Dependent Variable: S_LgCIOXY				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_LgCIOXY = C(1)*CONST + C(2)*LagDep(1) + C(3)*TX_Oil_PlattsIHS_PctChg + C(4)*Jan + C(5)*Feb + C(6)*Mar + C(7)*Apr + C(8)*Jun + C(9)*Aug + C(10)*Sep + C(11)*Nov + C(12)*Outlier_2009_11 + C(13)*Outlier_2009_12 + C(14)*Outlier_2010_01 + C(15)*Outlier_2010_11 + C(16)*Outlier_2013_11 + C(17)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	61563.770	15045.893	4.09173	0.0%
C(2)	0.759	0.050	15.23729	0.0%
C(3)	25417.193	6711.387	3.78717	0.0%
C(4)	17666.229	2442.514	7.23281	0.0%
C(5)	11074.577	2222.594	4.98273	0.0%
C(6)	-17410.839	2218.849	-7.84679	0.0%
C(7)	32921.320	2692.748	12.22592	0.0%
C(8)	20500.998	2484.384	8.25195	0.0%
C(9)	17466.481	2352.363	7.42508	0.0%
C(10)	13796.605	2278.713	6.05456	0.0%
C(11)	19074.180	2587.810	7.37078	0.0%
C(12)	46705.670	8068.406	5.78871	0.0%
C(13)	13838.934	7942.581	1.74237	8.3%
C(14)	-40887.207	8105.285	-5.04451	0.0%
C(15)	-30979.282	7735.422	-4.00486	0.0%
C(16)	-28961.774	7746.544	-3.73867	0.0%
C(17)	-0.189	0.092	-2.04305	4.3%

Table F-23: Retail Sales - Texas Large Commercial and Industrial Service – Regression Statistics

Retail Sales - Texas Large Commercial and Industrial -OXY

Model Statistics	
Adjusted Observations	179
R-Squared	0.8069
Adjusted R-Squared	0.7878
AIC	17.957
BIC	18.260
Log-Likelihood	-1,844.185
Model Sum of Squares	38,925,369,418.595
Sum of Squared Errors	9,315,351,810.68
Std. Error of Regression	7,583.02
Durbin-Watson Statistic	1.96
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-24: Retail Sales - Texas Large Commercial and Industrial Service – Definitions

Retail Sales - Texas Large Commercial and Industrial -OXY

Variable Name	Definition
S_LgCIOXY	Large Commercial and Industrial sales to Oxy in Texas
CONST	Constant variable
LagDep(1)	S_LgCIOXY lagged by one month
TX_Oil_PlattsIHS_PctChg	Year-over-year change in Texas service territory oil production
Jan	Seasonal binary variable, January=1, otherwise =0
Feb	Seasonal binary variable, February=1, otherwise =0
Mar	Seasonal binary variable, February=1, otherwise =0
Apr	Seasonal binary variable, May=1, otherwise =0
Jun	Seasonal binary variable, June=1, otherwise =0
Aug	Seasonal binary variable, August=1, otherwise =0
Sep	Seasonal binary variable, September=1, otherwise =0
Nov	Seasonal binary variable, November=1, otherwise =0
Outlier_2009_11	Binary variable for July 2012=1, otherwise =0
Outlier_2009_12	Binary variable for May 2020=1, otherwise =0
Outlier_2010_01	Binary variable for May 2020=1, otherwise =0
Outlier_2010_11	Binary variable for May 2020=1, otherwise =0
Outlier_2013_11	Binary variable for May 2020=1, otherwise =0
AR(1)	First-order autoregressive term

Table F-25: Retail Sales – New Mexico Other Public Authority

Retail Sales - New Mexico Other Public Authority

Dependent Variable: S_MUNISCHOOL_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_MUNISCHOOL_NM = C(1)*NR_NM + C(2)*C65_bill_ROS_NM_Jun + C(3)*C65_bill_ROS_NM_Jul + C(4)*C65_bill_ROS_NM_Aug + C(5)*C65_bill_ROS_NM_Sep + C(6)*Oct + C(7)*Outlier_2008_11 + C(8)*Outlier_2011_05 + C(9)*Outlier_2012_11 + C(10)*Outlier_2014_01 + C(11)*Outlier_2020_04_05 + C(12)*AR(1) + C(13)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	36.227	0.340	106.48755	0.0%
C(2)	4.498	0.726	6.19778	0.0%
C(3)	4.226	0.490	8.63046	0.0%
C(4)	5.816	0.473	12.30912	0.0%
C(5)	8.555	0.639	13.38317	0.0%
C(6)	3196.705	266.673	11.98736	0.0%
C(7)	-5432.781	1006.700	-5.39662	0.0%
C(8)	2591.829	956.550	2.70956	0.7%
C(9)	2626.494	955.564	2.74863	0.7%
C(10)	2553.215	958.501	2.66376	0.8%
C(11)	-2145.751	660.597	-3.24820	0.1%
C(12)	-0.796	0.045	-17.61214	0.0%
C(13)	0.731	0.073	9.95915	0.0%

Table F-26: Retail Sales - New Mexico Other Public Authority – Regression Statistics

Retail Sales - New Mexico Other Public Authority

Model Statistics	
Adjusted Observations	179
R-Squared	0.7659
Adjusted R-Squared	0.7490
AIC	13.799
BIC	14.031
Log-Likelihood	-1,476.011
Model Sum of Squares	498,211,186.645
Sum of Squared Errors	152,282,696.40
Std. Error of Regression	957.79
Durbin-Watson Statistic	1.86
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-27: Retail Sales - New Mexico Other Public Authority – Definitions

Retail Sales - New Mexico Other Public Authority

Variable Name	Definition
S_MUNISCHOOL_NM	Municipal and School Service sales in the New Mexico service area
NR_NM	Population in the New Mexico service territory
C65_bill_ROS_NM_Jun	Cooling degree days (June)
C65_bill_ROS_NM_Jul	Cooling degree days (July)
C65_bill_ROS_NM_Aug	Cooling degree days (August)
C65_bill_ROS_NM_Sep	Cooling degree days (September)
Oct	Seasonal binary variable, October=1, otherwise =0
Outlier_2008_11	Binary variable, November 2008=1, otherwise =1
Outlier_2011_05	Binary variable, May 2011=1, otherwise =1
Outlier_2012_11	Binary variable, November 2012=1, otherwise =1
Outlier_2014_01	Binary variable, January 2014=1, otherwise =1
Outlier_2020_04_05	Binary variable, April+May 2020=1, otherwise =1
AR(1)	First-order autoregressive term
MA(1)	First-order Moving Average

Table F-28: Retail Sales – Texas Other Public Authority

Retail Sales - Texas Other Public Authority

Dependent Variable: S_MUNISCHOOL_TX				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
S_MUNISCHOOL_TX = C(1)*TX_MuniSch_Cust + C(2)*TX_Com_Intensity + C(3)*C65_bill_MSS_TX_Jun + C(4)*C65_bill_MSS_TX_Jul + C(5)*C65_bill_MSS_TX_Aug + C(6)*C65_bill_MSS_TX_Sep + C(7)*C65_bill_MSS_TX_Oct + C(8)*Outlier_2017_03 + C(9)*Outlier_2020_05 + C(10)*Outlier_2022_08				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	2.796	0.472	5.92345	0.0%
C(2)	1240.677	156.556	7.92480	0.0%
C(3)	0.002	0.000	4.48410	0.0%
C(4)	0.002	0.000	7.50834	0.0%
C(5)	0.003	0.000	9.70941	0.0%
C(6)	0.005	0.000	13.01246	0.0%
C(7)	0.011	0.001	12.99907	0.0%
C(8)	-6409.868	2085.149	-3.07406	0.2%
C(9)	-7324.826	2087.932	-3.50817	0.1%
C(10)	6390.123	2191.695	2.91561	0.4%

Table F-29: Retail Sales - Texas Other Public Authority – Regression Statistics

Retail Sales - Texas Other Public Authority

Model Statistics	
Adjusted Observations	180
R-Squared	0.7357
Adjusted R-Squared	0.7217
AIC	15.329
BIC	15.506
Log-Likelihood	-1,624.988
Model Sum of Squares	2,035,869,712.983
Sum of Squared Errors	731,421,639.08
Std. Error of Regression	2,074.24
Durbin-Watson Statistic	2.08
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-30: Retail Sales - Texas Other Public Authority – Definitions

Retail Sales - Texas Other Public Authority

Variable Name	Definition
S_MUNISCHOOL_TX	Municipal and School Service sales in Texas
TX_MuniSch_Cust	Municipal and School Service customers in Texas
TX_Com_Intensity	EIA commercial building energy intensity
C65_bill_MSS_TX_Jun	Cooling degree days (June) multiplied by customers
C65_bill_MSS_TX_Jul	Cooling degree days (July) multiplied by customers
C65_bill_MSS_TX_Aug	Cooling degree days (August) multiplied by customers
C65_bill_MSS_TX_Sep	Cooling degree days (September) multiplied by customers
C65_bill_MSS_TX_Oct	Cooling degree days (October) multiplied by customers
Outlier_2017_03	Binary variable for March 2017=1, otherwise=0
Outlier_2020_05	Binary variable for May 2020=1, otherwise=0
Outlier_2022_08	Binary variable for August 2022=1, otherwise=0

Table F-31: Retail Customers – New Mexico Total Residential

Retail Customers - New Mexico Total FERC Residential

Dependent Variable: Res_Cust_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Res_Cust_NM = C(1)*LagDep(1) + C(2)*NM_Pop_Chg + C(3)*Outlier_2008_08 + C(4)*Outlier_2010_04				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.001	0.000	16747.21320	0.0%
C(2)	67.870	21.861	3.10468	0.2%
C(3)	414.832	65.916	6.29334	0.0%
C(4)	-187.239	65.731	-2.84856	0.5%

Table F-32: Retail Customers - New Mexico Total Residential – Regression Statistics

Retail Customers - New Mexico Total FERC Residential

Model Statistics	
Adjusted Observations	180
R-Squared	0.9996
Adjusted R-Squared	0.9996
AIC	8.382
BIC	8.453
Log-Likelihood	-1,005.821
Model Sum of Squares	1,868,535,012.238
Sum of Squared Errors	752,281.56
Std. Error of Regression	65.38
Durbin-Watson Statistic	1.78
Mean dependent var	85,517.80
StdDev dependent var	3,882.64

Table F-33: Retail Customers- New Mexico Total Residential – Definitions

Retail Customers - New Mexico Total FERC Residential

Variable Name	Definition
Res_Cust_NM	New Mexico residential customers
LagDep(1)	Res_Cust_NM lagged by one month
NM_Pop_Chg	Month-over-month change in NM service territory population
Outlier_2008_08	Binary variable for August 2008=1, otherwise =0
Outlier_2010_04	Binary variable for April 2010=1, otherwise =0

Table F-34: Retail Customers – Texas Total Residential

Retail Customers - Texas Total FERC Residential

Dependent Variable: TX_Res_Cust				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
TX_Res_Cust = C(1)*LagDep(1) + C(2)*TX_Pop_Chg + C(3)*Outlier_2008_08 + C(4)*Outlier_2008_09 + C(5)*Outlier_2018_05				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.001	0.000	19410.84669	0.0%
C(2)	102.034	44.271	2.30474	2.2%
C(3)	905.440	132.326	6.84247	0.0%
C(4)	730.170	132.369	5.51616	0.0%
C(5)	391.339	131.355	2.97925	0.3%

Table F-35: Retail Customers - Texas Total Residential – Regression Statistics

Retail Customers - Texas Total FERC Residential

Model Statistics	
Adjusted Observations	180
R-Squared	0.9995
Adjusted R-Squared	0.9995
AIC	9.772
BIC	9.860
Log-Likelihood	-1,129.868
Model Sum of Squares	6,423,792,165.205
Sum of Squared Errors	2,985,173.04
Std. Error of Regression	130.61
Durbin-Watson Statistic	2.27
Mean dependent var	197,250.728
StdDev dependent var	6,566.667

Table F-36: Retail Customers - Texas Total Residential – Definitions

Retail Customers - Texas Total FERC Residential

Variable Name	Definition
LagDep(1)	TX_Res_Cust lagged by one month
TX_Pop_Chg	Month-over-month change in TX service territory population
Outlier_2008_08	Binary variable for August 2008=1, otherwise =0
Outlier_2008_09	Binary variable for September 2008=1, otherwise =0
Outlier_2018_05	Binary variable for May 2018=1, otherwise =0

Table F-37: Retail Customers – New Mexico Small Commercial and Industrial

Retail Customers - New Mexico FERC Small Commercial and Industrial

Dependent Variable: Sm_CI_NM				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Sm_CI_NM = C(1)*CONST + C(2)*LagDep(1) + C(3)*NM_Oil_PctChg + C(4)*Outlier_2016_11 + C(5)*Outlier_2018_01 + C(6)*Outlier_2018_11 + C(7)*Outlier_2020_02 + C(8)*AR(1) + C(9)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	61.053	55.937	1.09146	27.7%
C(2)	0.998	0.003	359.24391	0.0%
C(3)	40.003	19.569	2.04418	4.2%
C(4)	-65.836	21.938	-3.00101	0.3%
C(5)	78.048	21.901	3.56370	0.0%
C(6)	88.842	21.908	4.05520	0.0%
C(7)	-58.226	21.913	-2.65718	0.9%
C(8)	0.895	0.073	12.32591	0.0%
C(9)	-0.755	0.108	-6.97872	0.0%

Table F-38: Retail Customers - New Mexico Small Commercial and Industrial – Regression Statistics

Retail Customers - New Mexico FERC Small Commercial and Industrial

Model Statistics	
Adjusted Observations	179
R-Squared	0.9998
Adjusted R-Squared	0.9998
AIC	6.262
BIC	6.422
Log-Likelihood	-805.446
Model Sum of Squares	396,779,758.349
Sum of Squared Errors	84,872.84
Std. Error of Regression	22.34
Durbin-Watson Statistic	2.03
Mean dependent var	19,347.15
StdDev dependent var	1,511.34

Table F-39: Retail Customers- New Mexico Small Commercial and Industrial – Definitions

Retail Customers - New Mexico FERC Small Commercial and Industrial

Variable Name	Definition
Sm_CI_NM	Small Commercial & Industrial FERC Class New Mexico customer co
CONST	Constant Term
LagDep(1)	Sm_CI_NM lagged by one month
NM_Oil_PctChg	Month-over-month percent change in NM Permian oil production
Outlier_2016_11	Binary variable for November 2016 = 1, otherwise = 0
Outlier_2018_01	Binary variable for January 2018 = 1, otherwise = 0
Outlier_2018_11	Binary variable for November 2018 = 1, otherwise = 0
Outlier_2020_02	Binary variable for February 2020 = 1, otherwise = 0
AR(1)	First-order autoregressive term
MA(1)	First-order Moving Average

Table F-40: Retail Customers – Texas Small Commercial and Industrial

Retail Customers - Texas FERC Small Commercial and Industrial

Dependent Variable: TX_Sm_CI				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
TX_Sm_CI = C(1)*LagDep(1) + C(2)*TX_Pop_Chg + C(3)*Outlier_2010_09 + C(4)*Outlier_2010_11 + C(5)*Outlier_2018_05				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.000	0.000	13493.87970	0.0%
C(2)	82.898	14.775	5.61049	0.0%
C(3)	746.998	44.462	16.80065	0.0%
C(4)	-877.284	44.446	-19.73815	0.0%
C(5)	-310.188	44.367	-6.99139	0.0%

Table F-41: Retail Customers - Texas FERC Small Commercial and Industrial – Regression Statistics

Retail Customers - Texas FERC Small Commercial and Industrial

Model Statistics	
Adjusted Observations	180
R-Squared	0.9984
Adjusted R-Squared	0.9984
AIC	7.601
BIC	7.690
Log-Likelihood	-934.493
Model Sum of Squares	213,452,594.440
Sum of Squared Errors	340,555.22
Std. Error of Regression	44.11
Durbin-Watson Statistic	1.89
Mean dependent var	46,425.66
StdDev dependent var	1,644.02

Table F-42: Retail Customers - Texas Small Commercial and Industrial – Definitions

Retail Customers - Texas FERC Small Commercial and Industrial

Variable Name	Definition
LagDep(1)	TX_Sm_CI lagged by one month
TX_Pop_Chg	Month-over-month change in TX service territory population
Outlier_2010_09	Binary variable for September 2010=1, otherwise =0
Outlier_2010_11	Binary variable for November 2010=1, otherwise =0
Outlier_2018_05	Binary variable for May 2018=1, otherwise =1

Table F-43: Retail Customers – New Mexico Other Public Authority

Retail Customers - New Mexico FERC Other Public Authority

Dependent Variable: Other_Pub_Auth				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Other_Pub_Auth = C(1)*NR_NM_MA12_Lead6 + C(2)*Outlier_2008_09 + C(3)*Outlier_2012_04 + C(4)*Outlier_2016_01 + C(5)*Outlier_2017_02 + C(6)*AR(1) + C(7)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.552	0.462	14.19208	0.0%
C(2)	6.648	2.080	3.19643	0.2%
C(3)	8.636	2.053	4.20693	0.0%
C(4)	7.561	2.044	3.69941	0.0%
C(5)	-24.790	2.043	-12.13630	0.0%
C(6)	0.993	0.011	89.97231	0.0%
C(7)	0.215	0.077	2.79097	0.6%

Table F-44: Retail Customers - New Mexico Other Public Authority – Regression Statistics

Retail Customers - New Mexico FERC Other Public Authority

Model Statistics	
Adjusted Observations	179
R-Squared	0.9975
Adjusted R-Squared	0.9974
AIC	2.400
BIC	2.524
Log-Likelihood	-461.769
Model Sum of Squares	729,229.122
Sum of Squared Errors	1,824.27
Std. Error of Regression	3.26
Durbin-Watson Statistic	1.96
Mean dependent var	1,681.27
StdDev dependent var	65.43

Table F-45: Retail Customers- New Mexico Other Public Authority – Definitions

Retail Customers - New Mexico FERC Other Public Authority

Variable Name	Definition
Other_Pub_Auth	Public Authority FERC Class New Mexico customer counts
NR_NM_MA12_Lead6	Log of Households in the New Mexico service area
Outlier_2008_09	Binary variable for September 2008=1, otherwise =0
Outlier_2012_04	Binary variable for April 2012=1, otherwise =0
Outlier_2016_01	Binary variable for January 2016=1, otherwise =0
Outlier_2017_02	First-order autoregressive term
AR(1)	Autoregressive correction term, 1st period
MA(1)	First-order Moving Average term

Table F-46: Retail Customers – Texas Other Public Authority

Retail Customers - Texas FERC Other Public Authority

Dependent Variable: TX_OSPA				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
TX_OSPA = C(1)*NR_TX + C(2)*Shift_2023_01 + C(3)*AR(1) + C(4)*MA(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	7.912	0.071	111.47430	0.0%
C(2)	106.758	12.245	8.71855	0.0%
C(3)	0.983	0.012	81.70604	0.0%
C(4)	-0.478	0.069	-6.95912	0.0%

Table F-47: Retail Customers - Texas Other Public Authority – Regression Statistics

Retail Customers - Texas FERC Other Public Authority

Model Statistics	
Adjusted Observations	179
R-Squared	0.9632
Adjusted R-Squared	0.9625
AIC	5.298
BIC	5.370
Log-Likelihood	-724.194
Model Sum of Squares	895,420.214
Sum of Squared Errors	34,236.85
Std. Error of Regression	13.99
Durbin-Watson Statistic	2.05
Mean dependent var	4,367.09
StdDev dependent var	158.65

Table F-48: Retail Customers- Texas Other Public Authority – Definitions

Retail Customers - Texas FERC Other Public Authority

Variable Name	Definition
TX_OSPA	Texas other public authority customer counts
NR_TX	TX service territory population
Shift_2023_01	Binary for customer shift starting January 2023=1, otherwise =0
AR(1)	First-order autoregressive term
MA(1)	First-order moving average term

Table F-49: Coincident Peak Demand – Retail

Retail Sales - New Mexico Residential Service

Dependent Variable: Retail_Load				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Retail_Load = C(1)*RetailSales_MA12 + C(2)*H65_bill_Retail_SPS_Jan + C(3)*H65_bill_Retail_SPS_Feb + C(4)*H65_bill_Retail_SPS_Mar + C(5)*C65_bill_Retail_SPS_Apr + C(6)*C65_bill_Retail_SPS_May + C(7)*C65_bill_Retail_SPS_Jun + C(8)*C65_bill_Retail_SPS_Jul + C(9)*C65_bill_Retail_SPS_Aug + C(10)*C65_bill_Retail_SPS_Sep + C(11)*C65_bill_Retail_SPS_Oct + C(12)*H65_bill_Retail_SPS_Nov + C(13)*H65_bill_Retail_SPS_Dec + C(14)*Outlier_2015_Apr + C(15)*Outlier_2019_Jan + C(16)*Outlier_2019_Mar + C(17)*Outlier_2019_May + C(18)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.002	0.000	96.56544	0.0%
C(2)	0.000	0.000	7.63073	0.0%
C(3)	0.000	0.000	8.92208	0.0%
C(4)	0.000	0.000	2.46443	1.5%
C(5)	0.000	0.000	5.65871	0.0%
C(6)	0.000	0.000	13.74172	0.0%
C(7)	0.000	0.000	22.65090	0.0%
C(8)	0.000	0.000	24.58157	0.0%
C(9)	0.000	0.000	24.50786	0.0%
C(10)	0.000	0.000	19.34497	0.0%
C(11)	0.000	0.000	5.85774	0.0%
C(12)	0.000	0.000	4.84666	0.0%
C(13)	0.000	0.000	8.11047	0.0%
C(14)	-239.502	88.661	-2.70132	0.8%
C(15)	193.829	91.067	2.12843	3.5%
C(16)	268.315	97.902	2.74064	0.7%
C(17)	248.833	89.153	2.79107	0.6%
C(18)	0.555	0.067	8.23803	0.0%

Table F-50: Coincident Peak Demand – Retail – Regression Statistics

Retail Sales - New Mexico Residential Service

Model Statistics	
Adjusted Observations	179
R-Squared	0.9447
Adjusted R-Squared	0.9389
AIC	9.299
BIC	9.620
Log-Likelihood	-1,068.261
Model Sum of Squares	27,353,049.332
Sum of Squared Errors	1,599,799.97
Std. Error of Regression	99.68
Durbin-Watson Statistic	2.18
Mean dependent var	85,517.80
StdDev dependent var	3,882.64

Table F-51: Coincident Peak Demand – Retail – Definitions

Retail Sales - New Mexico Residential Service

Variable Name	Definition
Retail_Load	SPS retail coincident peak demand
RetailSales_MA12	12-month moving average of SPS Retail sales
H65_bill_Retail_SPS_Jan	Heating degree days (January) multiplied by customers
H65_bill_Retail_SPS_Feb	Heating degree days (February) multiplied by customers
H65_bill_Retail_SPS_Mar	Heating degree days (March) multiplied by customers
C65_bill_Retail_SPS_Apr	Cooling degree days (April) multiplied by customers
C65_bill_Retail_SPS_May	Cooling degree days (May) multiplied by customers
C65_bill_Retail_SPS_Jun	Cooling degree days (June) multiplied by customers
C65_bill_Retail_SPS_Jul	Cooling degree days (July) multiplied by customers
C65_bill_Retail_SPS_Aug	Cooling degree days (August) multiplied by customers
C65_bill_Retail_SPS_Sep	Cooling degree days (September) multiplied by customers
C65_bill_Retail_SPS_Oct	Cooling degree days (October) multiplied by customers
H65_bill_Retail_SPS_Nov	Heating degree days (November) multiplied by customers
H65_bill_Retail_SPS_Dec	Heating degree days (December) multiplied by customers
Outlier_2015_Apr	Binary variable for April 2015=1, otherwise =0
Outlier_2019_Jan	Binary variable for January 2019=1, otherwise =0
Outlier_2019_Mar	Binary variable for March 2019=1, otherwise =0
Outlier_2019_May	Binary variable for May 2019=1, otherwise =0
AR(1)	First-order autoregressive term

Table F-52: Probability Distribution – Full Requirement Energy Excluding WTMPA

Probability Energy

Dependent Variable: Retail_Load				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Retail_Load = C(1)*CONST + C(2)*CGCP_SPS_MA12 + C(3)*C65_SPS_May + C(4)*C65_SPS_Jun + C(5)*C65_SPS_Jul + C(6)*C65_SPS_Aug + C(7)*C65_SPS_Sep + C(8)*H65_SPS_Jan + C(9)*H65_SPS_Feb + C(10)*H65_SPS_Mar + C(11)*H65_SPS_Oct + C(12)*H65_SPS_Dec + C(13)*Feb + C(14)*Outlier_2009_03 + C(15)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	489162.498	203629.742	2.40222	1.7%
C(2)	16.164	3.155	5.12390	0.0%
C(3)	0.001	0.000	9.54035	0.0%
C(4)	0.001	0.000	14.08856	0.0%
C(5)	0.002	0.000	24.28900	0.0%
C(6)	0.002	0.000	23.13446	0.0%
C(7)	0.001	0.000	9.33135	0.0%
C(8)	0.001	0.000	11.55266	0.0%
C(9)	0.000	0.000	1.99061	4.8%
C(10)	0.000	0.000	6.38336	0.0%
C(11)	0.001	0.000	4.41254	0.0%
C(12)	0.001	0.000	13.92833	0.0%
C(13)	-140866.275	53638.261	-2.62623	0.9%
C(14)	459617.727	35643.487	12.89486	0.0%
C(15)	0.829	0.044	18.70896	0.0%

Table F-53: Probability Distribution – Full Requirement Energy Excluding WTMPA – Regression Statistics

Probability Energy

Model Statistics	
Adjusted Observations	179
R-Squared	0.9393
Adjusted R-Squared	0.9341
AIC	21.473
BIC	21.740
Log-Likelihood	-2,160.779
Model Sum of Squares	4,955,903,032,018.000
Sum of Squared Errors	320,225,585,940.81
Std. Error of Regression	44,188.18
Durbin-Watson Statistic	2.54
Mean dependent var	85,517.80
StdDev dependent var	3,882.64

Table F-54: Probability Distribution – Full Requirement Energy Excluding WTMPA – Definitions

Probability Energy

Variable Name	Definition
Retail_Load	SPS full requirements energy
CONST	Constant variable
CGCP_SPS_MA12	12-month moving average of service territory Gross County Product
C65_SPS_May	May weather index for customer-weighted cooling degree days
C65_SPS_Jun	June weather index for customer-weighted cooling degree days
C65_SPS_Jul	July weather index for customer-weighted cooling degree days
C65_SPS_Aug	August weather index for customer-weighted cooling degree days
C65_SPS_Sep	September weather index for customer-weighted cooling degree days
H65_SPS_Jan	January weather index for customer-weighted heating degree days
H65_SPS_Feb	February weather index for customer-weighted heating degree days
H65_SPS_Mar	March weather index for customer-weighted heating degree days
H65_SPS_Oct	October weather index for customer-weighted heating degree days
H65_SPS_Dec	December weather index for customer-weighted heating degree days
Feb	Seasonal binary variable, February=1, otherwise =0
Outlier_2009_03	Binary variable for March 2009=1, otherwise =0
AR(1)	First-order autoregressive term

Table F-55: Probability Distribution – Full Requirement Peak Demand Excluding WTMPA

Probability Peak Demand

Dependent Variable: Peak				
Method: Least Squares				
Sample: 2008M6 2023M5				
Included observations: 180				
Peak = C(1)*Energy_MA12 + C(2)*C65_SPS_Apr + C(3)*C65_SPS_May + C(4)*SPS_Avg_Temp_Jun + C(5)*SPS_Avg_Temp_Jul + C(6)*SPS_Avg_Temp_Aug + C(7)*C65_SPS_Sep + C(8)*C65_SPS_Oct + C(9)*HDD_SPS + C(10)*Outlier_2008_10 + C(11)*Outlier_2014_09 + C(12)*Outlier_2015_04 + C(13)*Outlier_2019_01 + C(14)*AR(1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.002	0.000	61.35368	0.0%
C(2)	3.421	0.878	3.89519	0.0%
C(3)	2.474	0.248	9.98535	0.0%
C(4)	9.772	0.598	16.33328	0.0%
C(5)	10.519	0.599	17.57144	0.0%
C(6)	10.513	0.600	17.53579	0.0%
C(7)	2.447	0.184	13.27784	0.0%
C(8)	2.631	0.714	3.68582	0.0%
C(9)	0.392	0.068	5.78154	0.0%
C(10)	-354.004	113.992	-3.10552	0.2%
C(11)	355.492	115.327	3.08246	0.2%
C(12)	-256.827	114.363	-2.24571	2.6%
C(13)	201.755	113.323	1.78035	7.7%
C(14)	0.534	0.066	8.04394	0.0%

Table F-56: Probability Distribution – Full Requirement Peak Demand Excluding WTMPA – Regression Statistics

Probability Peak Demand

Model Statistics	
Adjusted Observations	179
R-Squared	0.9060
Adjusted R-Squared	0.8986
AIC	9.786
BIC	10.035
Log-Likelihood	-1,115.827
Model Sum of Squares	26,230,926.934
Sum of Squared Errors	2,721,922.36
Std. Error of Regression	128.44
Durbin-Watson Statistic	2.16
Mean dependent var	85,517.80
StdDev dependent var	3,882.64

Table F-57: Probability Distribution – Full Requirement Peak Demand Excluding WTMPA – Definitions

Probability Peak Demand

Variable Name	Definition
Peak	SPS retail coincident peak demand
Energy_MA12	12-month moving average of SPS Retail sales
C65_SPS_Apr	April cooling degree days
C65_SPS_May	May cooling degree days
SPS_Avg_Temp_Jun	Peak day average temperature in June
SPS_Avg_Temp_Jul	Peak day average temperature in July
SPS_Avg_Temp_Aug	Peak day average temperature in August
C65_SPS_Sep	September cooling degree days
C65_SPS_Oct	October cooling degree days
HDD_SPS	Service territory heating degree days
Outlier_2008_10	Binary variable for March 2009=1, otherwise =0
Outlier_2014_09	Binary variable for March 2009=1, otherwise =0
Outlier_2015_04	Binary variable for March 2009=1, otherwise =0
Outlier_2019_01	Binary variable for March 2009=1, otherwise =0
AR(1)	First-order autoregressive term

Appendix H

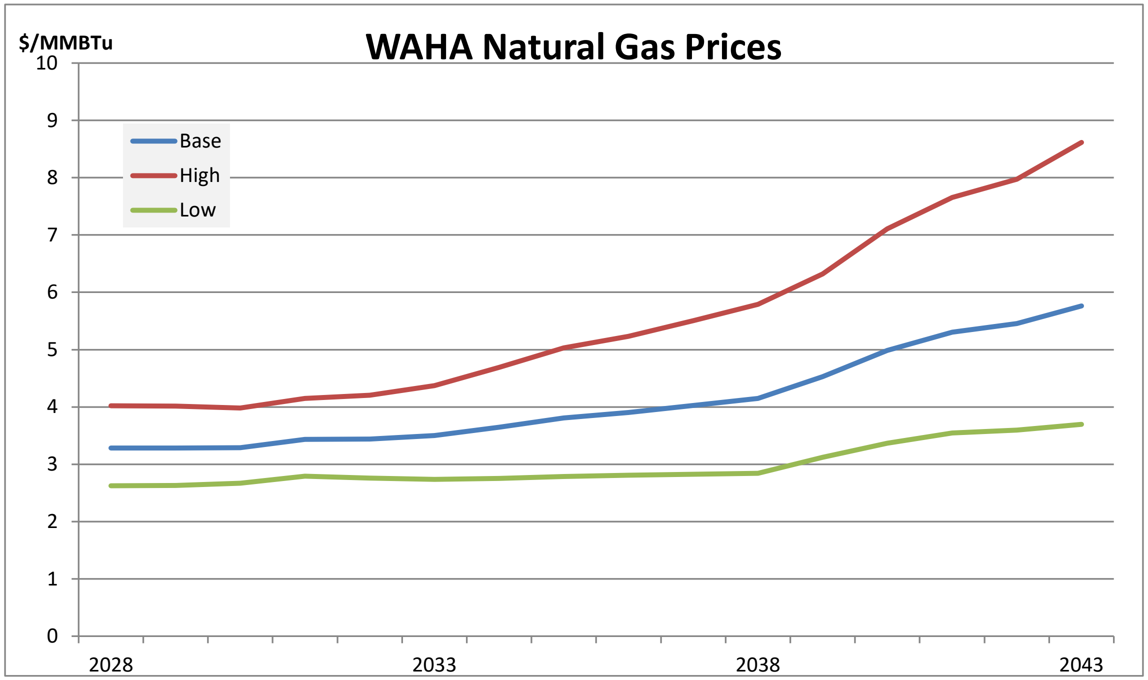
Key Modeling Inputs

SPS Forecasted Power/Fuel Prices

Base, High, and Low Forecasts

SPS Forecasted Power/Fuel Prices
Base, High, and Low Forecasts

	Waha Natural Gas ($/MMBtu)			Electricity ($/MWh)		Oil ($/MMBtu)	Coal ($/MMBTu)	
	Base	High	Low	SPP-ON	SPP-OFF	TUC	HAR	TOL
2028	3.28	4.02	2.63	37.01	27.43	2.39	2.10	2.39
2029	3.29	4.01	2.63	35.37	26.55	2.44	2.15	2.44
2030	3.29	3.98	2.67	33.38	25.61	2.49	2.22	2.53
2031	3.43	4.15	2.79	32.21	25.58	2.54	2.26	2.58
2032	3.44	4.20	2.76	31.09	24.79	2.59	2.30	2.62
2033	3.50	4.37	2.74	30.97	25.49	2.64	2.39	2.72
2034	3.65	4.69	2.75	30.30	25.69	2.69	2.46	2.79
2035	3.81	5.03	2.79	29.97	25.80	2.75	2.52	2.87
2036	3.90	5.23	2.81	29.79	26.51	2.80	2.59	2.94
2037	4.03	5.51	2.83	29.64	26.55	2.85	2.66	3.02
2038	4.15	5.79	2.84	29.08	27.56	2.91	2.73	3.10
2039	4.53	6.32	3.12	29.71	27.97	2.97	2.81	3.19
2040	4.99	7.11	3.37	30.41	29.29	3.02	2.89	3.27
2041	5.30	7.65	3.54	31.43	29.75	3.08	2.96	3.35
2042	5.46	7.97	3.59	30.88	30.02	3.14	3.04	3.44
2043	5.76	8.61	3.70	31.01	30.94	3.21	3.11	3.52


WAHA Natural Gas Prices
$/MMBTu
10
9
8
7
6
5
4
3
2
1
0
Base
High
Low
2028
2033
2038
2043

Demand and Energy Forecast						
	Peak Demand (MW)			Energy (MWh)		
Year	Financial Forecast	Planning Forecast	EE Forecast	Financial Forecast	Planning Forecast	EE Forecast
2024	3,835	4,045	3,863	28,042,149	30,091,079	27,572,482
2025	4,095	4,390	4,273	30,018,077	32,779,636	30,036,359
2026	4,197	4,565	4,660	30,830,557	34,092,565	32,334,560
2027	4,281	4,708	5,057	31,394,625	35,217,739	34,581,593
2028	4,344	4,827	5,422	31,906,840	36,141,142	36,748,555
2029	4,381	4,910	5,730	32,237,129	36,883,471	38,582,041
2030	4,417	4,993	6,037	32,596,866	37,610,944	40,453,604
2031	4,468	5,092	6,354	32,879,878	38,277,120	42,206,268
2032	4,489	5,151	6,664	33,140,632	38,888,382	44,114,350
2033	4,517	5,227	6,952	33,453,785	39,511,367	45,852,592
2034	4,548	5,290	7,165	33,812,430	40,296,501	47,209,756
2035	4,591	5,389	7,383	34,130,182	40,988,083	48,483,815
2036	4,625	5,463	7,592	34,444,822	41,727,005	49,795,719
2037	4,658	5,537	7,632	34,777,068	42,343,933	50,076,112
2038	4,689	5,614	7,258	35,104,424	43,169,961	48,027,277
2039	4,727	5,682	6,854	35,365,041	43,702,134	45,692,203
2040	4,759	5,767	6,444	35,754,190	44,530,030	43,509,526
2041	4,801	5,861	6,166	36,159,073	45,319,000	42,001,657
2042	4,835	5,924	6,181	36,557,077	46,116,010	42,239,257
2043	4,881	5,999	6,237	36,916,588	46,956,798	42,598,768

Input(s):

		Monthly Demand and Energy Forecasts					
		Financial Forecast		Planning Forecast		EE Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2024	2,256,859	3,516	2,393,561	3,700	2,231,305	3,529
2	2024	2,064,061	3,623	2,215,219	3,825	2,035,215	3,607
3	2024	2,179,752	3,435	2,357,575	3,625	2,143,635	3,398
4	2024	2,055,230	3,516	2,199,139	3,723	2,015,166	3,493
5	2024	2,225,301	3,891	2,387,205	4,090	2,181,650	3,870
6	2024	2,355,297	4,131	2,523,434	4,315	2,310,877	4,179
7	2024	2,567,295	4,235	2,743,029	4,416	2,519,143	4,291
8	2024	2,601,569	4,275	2,777,410	4,459	2,555,941	4,344
9	2024	2,382,493	4,120	2,575,500	4,410	2,340,777	4,175
10	2024	2,431,322	3,743	2,618,018	3,977	2,390,739	3,752
11	2024	2,352,340	3,739	2,542,638	3,973	2,314,672	3,781
12	2024	2,570,628	3,799	2,758,351	4,027	2,533,363	3,933
1	2025	2,506,494	3,866	2,705,596	4,145	2,470,888	3,966
2	2025	2,183,596	3,986	2,396,969	4,268	2,155,717	4,031
3	2025	2,393,212	3,803	2,638,590	4,097	2,367,087	3,826
4	2025	2,258,901	3,834	2,468,714	4,138	2,238,206	3,906
5	2025	2,417,759	4,192	2,638,795	4,477	2,403,287	4,281
6	2025	2,520,711	4,375	2,753,258	4,645	2,513,396	4,598
7	2025	2,712,112	4,455	2,939,034	4,732	2,711,465	4,698
8	2025	2,741,528	4,481	2,967,493	4,745	2,750,964	4,748
9	2025	2,528,242	4,328	2,775,257	4,682	2,547,131	4,578
10	2025	2,580,093	3,955	2,825,949	4,269	2,609,695	4,145
11	2025	2,482,713	3,923	2,732,895	4,236	2,522,723	4,172
12	2025	2,692,715	3,938	2,937,087	4,249	2,745,801	4,323

		Financial Forecast		Planning Forecast		Low Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2026	2,610,533	3,999	2,853,086	4,361	2,675,362	4,351
2	2026	2,265,798	4,124	2,525,500	4,489	2,335,029	4,414
3	2026	2,481,290	3,937	2,779,037	4,315	2,569,759	4,209
4	2026	2,337,387	3,947	2,590,726	4,334	2,434,441	4,289
5	2026	2,490,169	4,301	2,750,832	4,628	2,601,486	4,667
6	2026	2,571,103	4,462	2,842,908	4,800	2,689,502	4,987
7	2026	2,752,417	4,538	3,011,824	4,873	2,885,790	5,087
8	2026	2,776,719	4,566	3,040,538	4,925	2,920,853	5,141
9	2026	2,581,374	4,413	2,874,038	4,856	2,731,272	4,967
10	2026	2,661,023	4,045	2,949,503	4,419	2,826,679	4,528
11	2026	2,549,449	4,014	2,840,917	4,400	2,721,394	4,563
12	2026	2,753,295	4,016	3,033,657	4,379	2,942,993	4,715
1	2027	2,668,499	4,091	2,952,033	4,496	2,870,219	4,750
2	2027	2,323,909	4,219	2,629,767	4,668	2,518,835	4,808
3	2027	2,522,419	4,032	2,879,247	4,482	2,752,321	4,602
4	2027	2,376,682	4,030	2,678,741	4,470	2,612,803	4,679
5	2027	2,540,487	4,392	2,854,774	4,793	2,795,715	5,065
6	2027	2,603,051	4,540	2,913,688	4,960	2,860,920	5,388
7	2027	2,782,743	4,608	3,086,384	5,004	3,060,444	5,481
8	2027	2,828,614	4,645	3,147,353	5,033	3,117,322	5,543
9	2027	2,630,234	4,492	2,959,241	4,967	2,920,281	5,364
10	2027	2,711,960	4,130	3,052,964	4,566	3,022,682	4,924
11	2027	2,601,974	4,106	2,931,851	4,551	2,913,305	4,968
12	2027	2,804,053	4,090	3,131,694	4,511	3,136,747	5,112
1	2028	2,718,074	4,169	3,047,304	4,647	3,061,754	5,144
2	2028	2,455,142	4,302	2,817,457	4,819	2,789,018	5,194
3	2028	2,557,074	4,110	2,932,341	4,596	2,927,197	4,977
4	2028	2,407,271	4,112	2,732,903	4,591	2,778,249	5,062
5	2028	2,582,866	4,467	2,926,227	4,942	2,978,062	5,440
6	2028	2,649,599	4,595	3,004,816	5,053	3,043,516	5,754
7	2028	2,813,902	4,674	3,145,319	5,122	3,232,800	5,857
8	2028	2,856,836	4,695	3,201,627	5,146	3,285,711	5,900
9	2028	2,650,300	4,543	3,013,673	5,064	3,074,995	5,716
10	2028	2,756,221	4,180	3,126,759	4,683	3,205,050	5,266
11	2028	2,620,622	4,152	2,989,541	4,649	3,064,582	5,306
12	2028	2,838,932	4,135	3,203,175	4,607	3,307,621	5,451
1	2029	2,755,699	4,213	3,109,609	4,730	3,234,317	5,475
2	2029	2,396,999	4,337	2,770,840	4,875	2,839,074	5,505
3	2029	2,594,320	4,151	3,021,177	4,697	3,094,582	5,288
4	2029	2,442,581	4,148	2,807,515	4,690	2,937,178	5,366
5	2029	2,619,524	4,501	3,002,432	4,982	3,141,743	5,741
6	2029	2,685,803	4,637	3,067,939	5,134	3,201,951	6,066
7	2029	2,850,110	4,708	3,209,023	5,191	3,394,597	6,159
8	2029	2,892,755	4,728	3,275,027	5,242	3,447,977	6,202
9	2029	2,684,263	4,580	3,087,192	5,161	3,231,963	6,021
10	2029	2,790,423	4,211	3,207,586	4,765	3,367,115	5,564
11	2029	2,652,972	4,186	3,056,207	4,760	3,221,531	5,612
12	2029	2,871,681	4,166	3,268,924	4,699	3,470,012	5,759

		Financial Forecast		Planning Forecast		Low Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2030	2,783,534	4,243	3,160,543	4,815	3,392,684	5,780
2	2030	2,422,391	4,362	2,818,602	4,938	2,982,220	5,801
3	2030	2,622,398	4,180	3,088,615	4,761	3,252,868	5,587
4	2030	2,468,798	4,179	2,862,012	4,763	3,089,247	5,669
5	2030	2,648,174	4,535	3,053,315	5,059	3,299,932	6,045
6	2030	2,715,589	4,674	3,135,256	5,240	3,356,608	6,377
7	2030	2,880,692	4,745	3,273,464	5,281	3,553,706	6,469
8	2030	2,924,671	4,771	3,336,180	5,338	3,607,852	6,517
9	2030	2,715,173	4,619	3,145,865	5,244	3,386,155	6,331
10	2030	2,822,891	4,249	3,267,229	4,859	3,526,406	5,868
11	2030	2,685,436	4,235	3,119,893	4,830	3,375,724	5,929
12	2030	2,907,120	4,215	3,349,971	4,785	3,630,201	6,077
1	2031	2,807,863	4,302	3,236,842	4,949	3,540,728	6,107
2	2031	2,445,306	4,414	2,891,908	5,047	3,116,518	6,112
3	2031	2,648,190	4,233	3,134,351	4,890	3,401,580	5,897
4	2031	2,492,765	4,231	2,915,386	4,879	3,231,783	5,981
5	2031	2,674,409	4,594	3,109,034	5,156	3,448,803	6,364
6	2031	2,741,702	4,729	3,178,647	5,306	3,501,509	6,699
7	2031	2,906,458	4,791	3,315,104	5,368	3,702,334	6,781
8	2031	2,949,776	4,822	3,389,346	5,425	3,757,255	6,836
9	2031	2,737,249	4,665	3,214,802	5,340	3,529,908	6,645
10	2031	2,844,666	4,291	3,328,070	4,915	3,675,350	6,179
11	2031	2,704,911	4,286	3,177,400	4,958	3,520,028	6,256
12	2031	2,926,583	4,250	3,386,229	4,872	3,780,473	6,394
1	2032	2,822,542	4,333	3,280,276	4,981	3,688,035	6,420
2	2032	2,553,350	4,431	3,035,147	5,086	3,373,860	6,406
3	2032	2,661,732	4,240	3,189,549	4,924	3,550,431	6,184
4	2032	2,503,977	4,250	2,956,530	4,938	3,375,237	6,287
5	2032	2,687,069	4,607	3,136,099	5,231	3,598,974	6,665
6	2032	2,754,811	4,741	3,222,199	5,375	3,648,528	7,001
7	2032	2,918,991	4,817	3,366,579	5,431	3,854,101	7,097
8	2032	2,963,789	4,837	3,439,372	5,477	3,910,503	7,141
9	2032	2,750,701	4,684	3,251,382	5,388	3,678,104	6,955
10	2032	2,859,381	4,309	3,368,909	5,028	3,829,301	6,487
11	2032	2,720,167	4,321	3,212,480	5,022	3,670,027	6,587
12	2032	2,944,122	4,295	3,429,859	4,933	3,937,248	6,735
1	2033	2,858,380	4,379	3,340,474	5,090	3,863,109	6,762
2	2033	2,492,244	4,444	2,960,910	5,146	3,408,765	6,703
3	2033	2,696,809	4,262	3,250,469	4,953	3,721,520	6,488
4	2033	2,537,261	4,274	3,014,991	4,997	3,538,586	6,594
5	2033	2,721,506	4,628	3,216,115	5,275	3,764,589	6,961
6	2033	2,789,367	4,778	3,294,063	5,463	3,806,912	7,308
7	2033	2,953,352	4,844	3,424,298	5,504	4,013,195	7,386
8	2033	2,998,223	4,864	3,487,874	5,548	4,064,834	7,420
9	2033	2,783,895	4,713	3,311,421	5,493	3,822,649	7,227
10	2033	2,892,869	4,330	3,421,056	5,061	3,973,017	6,740
11	2033	2,752,644	4,358	3,280,220	5,134	3,804,498	6,850
12	2033	2,977,234	4,333	3,509,476	5,055	4,070,919	6,989

		Financial Forecast		Planning Forecast		Low Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2034	2,885,199	4,414	3,405,498	5,155	3,985,652	7,004
2	2034	2,518,151	4,456	3,023,893	5,191	3,518,221	6,906
3	2034	2,724,638	4,278	3,332,082	5,031	3,838,627	6,691
4	2034	2,563,901	4,299	3,069,857	5,070	3,648,505	6,804
5	2034	2,750,367	4,653	3,281,430	5,354	3,877,893	7,165
6	2034	2,819,515	4,811	3,355,418	5,535	3,917,220	7,519
7	2034	2,983,897	4,875	3,486,975	5,569	4,124,960	7,590
8	2034	3,030,023	4,899	3,556,300	5,595	4,177,854	7,628
9	2034	2,815,004	4,744	3,378,581	5,522	3,932,359	7,431
10	2034	2,925,215	4,354	3,499,456	5,111	4,086,584	6,938
11	2034	2,784,947	4,410	3,335,869	5,210	3,915,402	7,082
12	2034	3,011,573	4,386	3,571,144	5,142	4,186,478	7,222
1	2035	2,914,601	4,476	3,456,124	5,344	4,096,274	7,245
2	2035	2,546,105	4,483	3,099,896	5,223	3,619,536	7,103
3	2035	2,753,131	4,309	3,361,740	5,105	3,948,341	6,893
4	2035	2,590,267	4,336	3,132,338	5,126	3,753,472	7,016
5	2035	2,777,263	4,695	3,336,121	5,419	3,986,010	7,380
6	2035	2,846,802	4,858	3,414,275	5,612	4,023,107	7,741
7	2035	3,010,363	4,910	3,543,220	5,665	4,232,647	7,799
8	2035	3,056,615	4,943	3,612,160	5,703	4,285,667	7,846
9	2035	2,839,986	4,785	3,434,214	5,632	4,035,941	7,645
10	2035	2,949,850	4,392	3,554,256	5,229	4,192,439	7,150
11	2035	2,808,921	4,472	3,419,804	5,328	4,017,977	7,324
12	2035	3,036,279	4,438	3,623,934	5,281	4,292,405	7,453
1	2036	2,930,165	4,524	3,510,925	5,397	4,193,059	7,473
2	2036	2,657,980	4,506	3,260,076	5,324	3,845,728	7,295
3	2036	2,769,393	4,326	3,422,191	5,130	4,045,823	7,080
4	2036	2,606,286	4,370	3,168,766	5,199	3,848,091	7,226
5	2036	2,794,044	4,723	3,393,118	5,511	4,084,011	7,582
6	2036	2,864,744	4,886	3,462,931	5,681	4,119,650	7,944
7	2036	3,028,933	4,951	3,612,341	5,765	4,332,438	8,012
8	2036	3,076,183	4,970	3,662,493	5,780	4,386,455	8,046
9	2036	2,859,276	4,814	3,477,501	5,703	4,133,832	7,848
10	2036	2,969,742	4,419	3,612,786	5,262	4,293,551	7,350
11	2036	2,829,549	4,523	3,459,985	5,428	4,117,205	7,554
12	2036	3,058,529	4,496	3,683,892	5,380	4,395,875	7,690
1	2037	2,966,576	4,582	3,563,849	5,522	4,310,690	7,710
2	2037	2,597,496	4,518	3,188,173	5,348	3,810,079	7,459
3	2037	2,805,345	4,349	3,473,644	5,189	4,146,236	7,239
4	2037	2,641,584	4,399	3,250,291	5,318	3,937,662	7,378
5	2037	2,829,558	4,746	3,443,935	5,573	4,158,847	7,692
6	2037	2,900,331	4,926	3,555,956	5,741	4,177,070	8,039
7	2037	3,064,914	4,979	3,654,592	5,788	4,374,220	8,060
8	2037	3,112,110	4,998	3,737,881	5,833	4,403,045	8,042
9	2037	2,894,682	4,844	3,535,743	5,766	4,126,195	7,795
10	2037	3,005,361	4,442	3,682,138	5,344	4,259,553	7,238
11	2037	2,864,881	4,572	3,514,993	5,532	4,060,836	7,423
12	2037	3,094,230	4,546	3,742,739	5,494	4,311,680	7,508

		Financial Forecast		Planning Forecast		Low Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2038	2,991,376	4,629	3,627,981	5,604	4,190,454	7,473
2	2038	2,622,862	4,524	3,248,580	5,401	3,689,306	7,136
3	2038	2,830,709	4,364	3,561,508	5,259	3,993,044	6,893
4	2038	2,667,272	4,425	3,301,335	5,359	3,774,334	7,014
5	2038	2,855,592	4,768	3,517,194	5,624	3,981,185	7,306
6	2038	2,927,024	4,957	3,601,256	5,845	3,998,528	7,646
7	2038	3,092,503	5,005	3,716,346	5,889	4,181,353	7,643
8	2038	3,140,304	5,028	3,791,623	5,927	4,210,782	7,628
9	2038	2,922,850	4,869	3,647,596	5,791	3,941,019	7,377
10	2038	3,034,292	4,461	3,738,764	5,408	4,068,028	6,813
11	2038	2,894,530	4,629	3,591,615	5,670	3,877,141	7,043
12	2038	3,125,111	4,604	3,826,162	5,586	4,122,104	7,128
1	2039	3,013,421	4,694	3,679,064	5,704	3,992,042	7,101
2	2039	2,646,182	4,541	3,299,875	5,457	3,513,505	6,705
3	2039	2,852,600	4,385	3,615,229	5,272	3,794,479	6,467
4	2039	2,689,514	4,456	3,348,155	5,426	3,583,232	6,602
5	2039	2,876,782	4,801	3,555,989	5,704	3,781,919	6,895
6	2039	2,948,089	4,997	3,645,206	5,904	3,806,249	7,243
7	2039	3,113,788	5,032	3,765,326	5,895	3,982,182	7,225
8	2039	3,161,559	5,063	3,834,533	5,989	4,011,581	7,220
9	2039	2,943,911	4,900	3,649,915	5,919	3,748,735	6,964
10	2039	3,055,300	4,489	3,794,839	5,475	3,868,580	6,398
11	2039	2,916,450	4,699	3,641,126	5,761	3,685,717	6,675
12	2039	3,147,444	4,662	3,872,877	5,671	3,923,981	6,749
1	2040	3,036,694	4,749	3,717,809	5,803	3,794,860	6,718
2	2040	2,766,091	4,546	3,492,951	5,502	3,458,157	6,262
3	2040	2,875,770	4,389	3,669,290	5,311	3,597,193	6,024
4	2040	2,713,231	4,484	3,385,705	5,524	3,393,604	6,189
5	2040	2,899,807	4,821	3,605,098	5,728	3,584,488	6,471
6	2040	2,971,733	5,019	3,727,399	6,010	3,616,548	6,825
7	2040	3,138,224	5,066	3,836,144	6,053	3,786,162	6,816
8	2040	3,186,508	5,085	3,897,739	6,048	3,816,075	6,798
9	2040	2,968,761	4,928	3,721,850	5,915	3,560,240	6,548
10	2040	3,080,331	4,516	3,856,724	5,537	3,673,155	5,981
11	2040	2,942,515	4,766	3,702,364	5,929	3,498,437	6,306
12	2040	3,174,524	4,738	3,916,957	5,848	3,730,605	6,388
1	2041	3,079,600	4,825	3,814,918	5,985	3,617,310	6,357
2	2041	2,712,844	4,558	3,453,467	5,527	3,187,455	5,838
3	2041	2,918,053	4,416	3,747,236	5,370	3,431,268	5,630
4	2041	2,755,187	4,522	3,459,405	5,629	3,239,994	5,823
5	2041	2,941,381	4,851	3,680,700	5,808	3,436,225	6,120
6	2041	3,013,087	5,069	3,787,964	6,126	3,486,042	6,520
7	2041	3,180,021	5,101	3,888,188	6,133	3,662,617	6,521
8	2041	3,228,061	5,120	3,983,522	6,087	3,710,658	6,540
9	2041	3,009,875	4,965	3,802,866	6,062	3,476,903	6,330
10	2041	3,121,551	4,545	3,926,117	5,573	3,604,147	5,792
11	2041	2,983,640	4,833	3,788,741	6,042	3,450,668	6,200
12	2041	3,215,774	4,804	3,985,876	5,987	3,698,370	6,318

		Monthly Demand and Energy Forecasts					
		Financial Forecast		Planning Forecast		EE Forecast	
Month	Year	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)
1	2042	3,111,903	4,886	3,883,640	6,054	3,594,499	6,321
2	2042	2,745,499	4,560	3,517,688	5,567	3,181,392	5,755
3	2042	2,950,477	4,431	3,812,233	5,454	3,433,073	5,587
4	2042	2,787,397	4,553	3,533,683	5,623	3,254,425	5,826
5	2042	2,974,117	4,875	3,747,412	5,861	3,456,714	6,127
6	2042	3,046,039	5,103	3,822,327	6,198	3,513,067	6,551
7	2042	3,213,230	5,129	3,973,862	6,136	3,695,826	6,557
8	2042	3,261,653	5,151	4,043,817	6,162	3,744,249	6,579
9	2042	3,042,979	4,991	3,859,250	6,161	3,510,007	6,365
10	2042	3,155,310	4,567	4,016,938	5,643	3,637,906	5,822
11	2042	3,017,666	4,902	3,830,277	6,147	3,484,695	6,284
12	2042	3,250,806	4,872	4,074,883	6,080	3,733,402	6,401
1	2043	3,143,004	4,963	3,925,224	6,197	3,625,600	6,413
2	2043	2,777,068	4,580	3,591,750	5,589	3,212,961	5,780
3	2043	2,981,297	4,456	3,849,187	5,484	3,463,893	5,617
4	2043	2,817,681	4,590	3,605,926	5,708	3,284,710	5,873
5	2043	3,004,084	4,915	3,809,926	5,915	3,486,680	6,175
6	2043	3,075,890	5,150	3,913,699	6,249	3,542,919	6,608
7	2043	3,242,723	5,162	4,023,001	6,204	3,725,319	6,598
8	2043	3,291,208	5,193	4,139,907	6,249	3,773,804	6,630
9	2043	3,071,930	5,030	3,948,644	6,179	3,538,959	6,412
10	2043	3,184,241	4,603	4,078,693	5,715	3,666,837	5,867
11	2043	3,046,919	4,985	3,922,816	6,325	3,513,948	6,383
12	2043	3,280,542	4,944	4,148,025	6,179	3,763,139	6,488

Appendix I

PVRR Analysis

Integrated Resource Plan 2023

Southwestern Public Service Company

Appendix I - PVRR

The five (5) tabs herein contain the Present Value Revenue Requirements (PVRR) and every years revenue requirements for every scenario Southwestern Public Service Company ran in their 2023 Integrated Resource Plan analysis.

The units are in ($000) unless otherwise noted.

October 11, 2023

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Base Scenarios

Financial Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	**$ 5,843**	$0	**$ 11,733**	$0	**$ 13,039**	$ 845,410	$ 1,090,607	$ 1,015,224	$ 1,070,051	$ 998,533
Existing Technologies	$205	**$ 6,048**	$1,829	**$ 13,562**	$2,556	**$ 15,595**	$ 845,372	$ 1,090,615	$ 1,015,234	$ 1,070,432	$ 1,032,378
Long Duration Storage	$186	**$ 6,029**	$1,023	**$ 12,755**	$1,136	**$ 14,175**	$ 845,369	$ 1,090,642	$ 1,015,203	$ 1,070,137	$ 971,465
Hydrogen Conversion	$130	**$ 5,973**	$1,294	**$ 13,027**	$1,767	**$ 14,806**	$ 845,439	$ 1,090,795	$ 1,015,249	$ 1,070,245	$ 1,036,654

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	**$ 6,648**	$0	**$ 14,034**	$0	**$ 15,737**	$ 909,397	$ 1,178,905	$ 1,130,660	$ 1,199,358	$ 1,147,829
Existing Technologies	$381	**$ 7,029**	$2,753	**$ 16,787**	$4,149	**$ 19,887**	$ 909,422	$ 1,178,809	$ 1,130,708	$ 1,199,076	$ 1,296,489
Long Duration Storage	$320	**$ 6,968**	$1,348	**$ 15,382**	$1,629	**$ 17,367**	$ 909,406	$ 1,179,761	$ 1,130,883	$ 1,199,823	$ 1,209,947
Hydrogen Conversion	$239	**$ 6,887**	$1,630	**$ 15,664**	$2,254	**$ 17,991**	$ 909,420	$ 1,178,981	$ 1,130,798	$ 1,198,923	$ 1,193,907

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	**$ 6,930**	$0	**$ 16,431**	$0	**$ 18,125**	$ 834,828	$ 1,095,675	$ 1,082,255	$ 1,207,055	$ 1,279,595
Existing Technologies	$554	**$ 7,485**	$4,208	**$ 20,639**	$5,066	**$ 23,191**	$ 841,773	$ 1,099,139	$ 1,089,639	$ 1,219,256	$ 1,411,219
Long Duration Storage	$471	**$ 7,401**	$2,125	**$ 18,557**	$2,242	**$ 20,367**	$ 834,843	$ 1,095,658	$ 1,082,254	$ 1,206,912	$ 1,385,136
Hydrogen Conversion	$293	**$ 7,223**	$2,673	**$ 19,105**	$3,202	**$ 21,327**	$ 834,828	$ 1,096,374	$ 1,082,347	$ 1,206,916	$ 1,399,921

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Base Scenarios

Financial Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	**$ 5,843**	$0	**$ 11,733**	$0	**$ 13,039**	$ 1,007,044	$ 1,108,271	$ 1,165,474	$ 1,183,814	$ 1,208,142
Existing Technologies	$205	**$ 6,048**	$1,829	**$ 13,562**	$2,556	**$ 15,595**	$ 1,147,778	$ 1,225,783	$ 1,291,721	$ 1,341,942	$ 1,484,289
Long Duration Storage	$186	**$ 6,029**	$1,023	**$ 12,755**	$1,136	**$ 14,175**	$ 1,169,854	$ 1,244,033	$ 1,294,643	$ 1,324,644	$ 1,415,048
Hydrogen Conversion	$130	**$ 5,973**	$1,294	**$ 13,027**	$1,767	**$ 14,806**	$ 1,079,648	$ 1,181,678	$ 1,263,339	$ 1,289,861	$ 1,461,214

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	**$ 6,648**	$0	**$ 14,034**	$0	**$ 15,737**	$ 1,250,625	$ 1,354,995	$ 1,436,065	$ 1,461,101	$ 1,492,647
Existing Technologies	$381	**$ 7,029**	$2,753	**$ 16,787**	$4,149	**$ 19,887**	$ 1,461,919	$ 1,530,245	$ 1,612,275	$ 1,673,107	$ 1,844,469
Long Duration Storage	$320	**$ 6,968**	$1,348	**$ 15,382**	$1,629	**$ 17,367**	$ 1,463,689	$ 1,533,998	$ 1,611,844	$ 1,621,394	$ 1,738,021
Hydrogen Conversion	$239	**$ 6,887**	$1,630	**$ 15,664**	$2,254	**$ 17,991**	$ 1,403,412	$ 1,497,441	$ 1,573,677	$ 1,577,150	$ 1,723,323

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	**$ 6,930**	$0	**$ 16,431**	$0	**$ 18,125**	$ 1,433,716	$ 1,714,697	$ 1,803,677	$ 1,860,313	$ 1,997,271
Existing Technologies	$554	**$ 7,485**	$4,208	**$ 20,639**	$5,066	**$ 23,191**	$ 1,789,863	$ 1,974,568	$ 2,163,059	$ 2,306,580	$ 2,639,124
Long Duration Storage	$471	**$ 7,401**	$2,125	**$ 18,557**	$2,242	**$ 20,367**	$ 1,762,743	$ 1,948,712	$ 2,117,287	$ 2,224,945	$ 2,402,528
Hydrogen Conversion	$293	**$ 7,223**	$2,673	**$ 19,105**	$3,202	**$ 21,327**	$ 1,625,605	$ 1,810,355	$ 2,016,690	$ 2,171,078	$ 2,396,163

Integrated Resource Plan 2023
Southwestern Public Service Company

Base Scenarios

Financial Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	$ 5,843	$0	$ 11,733	$0	$ 13,039	$ 1,238,781	$ 1,241,386	$ 1,247,114	$ 1,313,344	$ 1,329,374
Existing Technologies	$205	$ 6,048	$1,829	$ 13,562	$2,556	$ 15,595	$ 1,559,671	$ 1,652,615	$ 1,652,901	$ 1,790,938	$ 1,805,236
Long Duration Storage	$186	$ 6,029	$1,023	$ 12,755	$1,136	$ 14,175	$ 1,436,997	$ 1,454,557	$ 1,443,153	$ 1,513,158	$ 1,513,322
Hydrogen Conversion	$130	$ 5,973	$1,294	$ 13,027	$1,767	$ 14,806	$ 1,455,866	$ 1,517,338	$ 1,514,094	$ 1,633,009	$ 1,677,035

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	$ 6,648	$0	$ 14,034	$0	$ 15,737	$ 1,531,953	$ 1,545,540	$ 1,581,569	$ 1,655,548	$ 1,711,547
Existing Technologies	$381	$ 7,029	$2,753	$ 16,787	$4,149	$ 19,887	$ 1,961,990	$ 2,120,169	$ 2,139,144	$ 2,332,113	$ 2,467,767
Long Duration Storage	$320	$ 6,968	$1,348	$ 15,382	$1,629	$ 17,367	$ 1,763,996	$ 1,811,146	$ 1,816,080	$ 1,898,162	$ 1,922,142
Hydrogen Conversion	$239	$ 6,887	$1,630	$ 15,664	$2,254	$ 17,991	$ 1,772,618	$ 1,887,082	$ 1,916,064	$ 2,060,658	$ 2,137,338

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	$ 6,930	$0	$ 16,431	$0	$ 18,125	$ 2,063,483	$ 2,116,735	$ 2,173,426	$ 2,206,248	$ 2,153,693
Existing Technologies	$554	$ 7,485	$4,208	$ 20,639	$5,066	$ 23,191	$ 2,846,949	$ 3,075,030	$ 3,160,954	$ 3,347,472	$ 3,170,706
Long Duration Storage	$471	$ 7,401	$2,125	$ 18,557	$2,242	$ 20,367	$ 2,456,828	$ 2,513,524	$ 2,534,822	$ 2,585,739	$ 2,474,780
Hydrogen Conversion	$293	$ 7,223	$2,673	$ 19,105	$3,202	$ 21,327	$ 2,570,835	$ 2,728,483	$ 2,808,552	$ 2,902,339	$ 2,849,518

Integrated Resource Plan 2023

Southwestern Public Service Company

Base Scenarios

Financial Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 5,843	$0	$ 11,733	$0	$ 13,039	$ 1,379,628	$ 1,428,281	$ 1,461,404	$ 1,472,588	$ 1,473,878
Existing Technologies	$205	$ 6,048	$1,829	$ 13,562	$2,556	$ 15,595	$ 1,938,324	$ 1,957,970	$ 2,212,419	$ 2,306,807	$ 2,352,680
Long Duration Storage	$186	$ 6,029	$1,023	$ 12,755	$1,136	$ 14,175	$ 1,594,127	$ 1,548,300	$ 1,616,508	$ 1,615,121	$ 1,555,337
Hydrogen Conversion	$130	$ 5,973	$1,294	$ 13,027	$1,767	$ 14,806	$ 1,789,546	$ 1,805,401	$ 1,978,797	$ 2,010,853	$ 2,015,975

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 6,648	$0	$ 14,034	$0	$ 15,737	$ 1,772,351	$ 1,834,150	$ 1,893,583	$ 1,905,783	$ 1,952,178
Existing Technologies	$381	$ 7,029	$2,753	$ 16,787	$4,149	$ 19,887	$ 2,706,751	$ 2,707,200	$ 3,264,278	$ 3,535,619	$ 3,690,101
Long Duration Storage	$320	$ 6,968	$1,348	$ 15,382	$1,629	$ 17,367	$ 2,049,103	$ 2,014,190	$ 2,225,385	$ 2,208,252	$ 2,265,279
Hydrogen Conversion	$239	$ 6,887	$1,630	$ 15,664	$2,254	$ 17,991	$ 2,251,944	$ 2,341,812	$ 2,554,388	$ 2,618,410	$ 2,690,271

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 6,930	$0	$ 16,431	$0	$ 18,125	$ 2,076,962	$ 2,023,278	$ 1,947,496	$ 1,884,043	$ 1,880,122
Existing Technologies	$554	$ 7,485	$4,208	$ 20,639	$5,066	$ 23,191	$ 3,074,990	$ 2,907,252	$ 2,867,933	$ 2,837,150	$ 2,909,688
Long Duration Storage	$471	$ 7,401	$2,125	$ 18,557	$2,242	$ 20,367	$ 2,410,793	$ 2,243,761	$ 2,138,193	$ 2,021,682	$ 1,936,786
Hydrogen Conversion	$293	$ 7,223	$2,673	$ 19,105	$3,202	$ 21,327	$ 2,747,145	$ 2,665,609	$ 2,574,657	$ 2,478,973	$ 2,439,017

Integrated Resource Plan 2023

Southwestern Public Service Company

18% Resource Adequacy

Financial Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	$ 5,843	$0	$ 11,733	$0	$ 13,039	$ 845,410	$ 1,090,607	$ 1,015,224	$ 1,070,051	$ 998,533
Existing Technologies	$304	$ 6,148	$2,169	$ 13,902	$2,927	$ 15,966	$ 845,333	$ 1,090,494	$ 1,015,262	$ 1,070,090	$ 1,080,535
Long Duration Storage	$279	$ 6,123	$1,332	$ 13,065	$1,472	$ 14,511	$ 845,364	$ 1,090,637	$ 1,015,194	$ 1,070,288	$ 994,940
Hydrogen Conversion	$188	$ 6,031	$1,571	$ 13,304	$2,097	$ 15,136	$ 845,382	$ 1,091,622	$ 1,015,242	$ 1,070,439	$ 1,036,684

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	$ 6,648	$0	$ 14,034	$0	$ 15,737	$ 909,397	$ 1,178,905	$ 1,130,660	$ 1,199,358	$ 1,147,829
Existing Technologies	$479	$ 7,127	$3,156	$ 17,191	$4,577	$ 20,315	$ 909,422	$ 1,178,809	$ 1,130,708	$ 1,199,076	$ 1,296,490
Long Duration Storage	$433	$ 7,081	$1,709	$ 15,743	$2,000	$ 17,738	$ 909,347	$ 1,179,169	$ 1,130,714	$ 1,199,232	$ 1,264,316
Hydrogen Conversion	$316	$ 6,964	$1,982	$ 16,017	$2,667	$ 18,404	$ 909,417	$ 1,178,921	$ 1,130,741	$ 1,199,085	$ 1,245,845

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Multi-Jurisdictional Baseline*	$0	$ 6,930	$0	$ 16,431	$0	$ 18,125	$ 834,828	$ 1,095,675	$ 1,082,255	$ 1,207,055	$ 1,279,595
Existing Technologies	$707	$ 7,637	$4,849	$ 21,281	$5,813	$ 23,938	$ 835,019	$ 1,096,359	$ 1,082,364	$ 1,207,035	$ 1,482,536
Long Duration Storage	$674	$ 7,604	$2,695	$ 19,126	$2,863	$ 20,988	$ 834,843	$ 1,095,904	$ 1,082,260	$ 1,206,809	$ 1,482,636
Hydrogen Conversion	$427	$ 7,358	$3,228	$ 19,659	$3,838	$ 21,963	$ 834,758	$ 1,095,806	$ 1,082,263	$ 1,207,017	$ 1,464,339

Xcel Energy®

Integrated Resource Plan 2023
Southwestern Public Service Company

18% Resource Adequacy

Financial Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	$ 5,843	$0	$ 11,733	$0	$ 13,039	$ 1,007,044	$ 1,108,271	$ 1,165,474	$ 1,183,814	$ 1,208,142
Existing Technologies	$304	$ 6,148	$2,169	$ 13,902	$2,927	$ 15,966	$ 1,194,970	$ 1,270,223	$ 1,337,435	$ 1,387,575	$ 1,533,175
Long Duration Storage	$279	$ 6,123	$1,332	$ 13,065	$1,472	$ 14,511	$ 1,226,626	$ 1,296,576	$ 1,347,614	$ 1,373,212	$ 1,462,010
Hydrogen Conversion	$188	$ 6,031	$1,571	$ 13,304	$2,097	$ 15,136	$ 1,125,391	$ 1,218,659	$ 1,298,719	$ 1,332,910	$ 1,502,635

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	$ 6,648	$0	$ 14,034	$0	$ 15,737	$ 1,250,625	$ 1,354,995	$ 1,436,065	$ 1,461,101	$ 1,492,647
Existing Technologies	$479	$ 7,127	$3,156	$ 17,191	$4,577	$ 20,315	$ 1,534,159	$ 1,600,053	$ 1,681,696	$ 1,750,509	$ 1,914,710
Long Duration Storage	$433	$ 7,081	$1,709	$ 15,743	$2,000	$ 17,738	$ 1,516,260	$ 1,587,322	$ 1,666,824	$ 1,677,039	$ 1,794,410
Hydrogen Conversion	$316	$ 6,964	$1,982	$ 16,017	$2,667	$ 18,404	$ 1,431,744	$ 1,523,661	$ 1,581,929	$ 1,633,658	$ 1,781,644

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Multi-Jurisdictional Baseline*	$0	$ 6,930	$0	$ 16,431	$0	$ 18,125	$ 1,433,716	$ 1,714,697	$ 1,803,677	$ 1,860,313	$ 1,997,271
Existing Technologies	$707	$ 7,637	$4,849	$ 21,281	$5,813	$ 23,938	$ 1,869,732	$ 2,074,786	$ 2,259,604	$ 2,396,779	$ 2,742,079
Long Duration Storage	$674	$ 7,604	$2,695	$ 19,126	$2,863	$ 20,988	$ 1,857,334	$ 2,040,414	$ 2,201,486	$ 2,309,706	$ 2,485,476
Hydrogen Conversion	$427	$ 7,358	$3,228	$ 19,659	$3,838	$ 21,963	$ 1,687,110	$ 1,873,207	$ 2,075,452	$ 2,223,528	$ 2,490,407

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Integrated Resource Plan 2023

Southwestern Public Service Company

18% Resource Adequacy

Financial Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	**$ 5,843**	$0	**$ 11,733**	$0	**$ 13,039**	$ 1,238,781	$ 1,241,386	$ 1,247,114	$ 1,313,344	$ 1,329,374
Existing Technologies	$304	**$ 6,148**	$2,169	**$ 13,902**	$2,927	**$ 15,966**	$ 1,608,774	$ 1,714,958	$ 1,710,552	$ 1,843,010	$ 1,858,292
Long Duration Storage	$279	**$ 6,123**	$1,332	**$ 13,065**	$1,472	**$ 14,511**	$ 1,485,887	$ 1,499,557	$ 1,488,978	$ 1,557,309	$ 1,555,916
Hydrogen Conversion	$188	**$ 6,031**	$1,571	**$ 13,304**	$2,097	**$ 15,136**	$ 1,494,173	$ 1,555,252	$ 1,568,838	$ 1,693,330	$ 1,733,608

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	**$ 6,648**	$0	**$ 14,034**	$0	**$ 15,737**	$ 1,531,953	$ 1,545,540	$ 1,581,569	$ 1,655,548	$ 1,711,547
Existing Technologies	$479	**$ 7,127**	$3,156	**$ 17,191**	$4,577	**$ 20,315**	$ 2,030,509	$ 2,193,476	$ 2,203,543	$ 2,389,788	$ 2,520,663
Long Duration Storage	$433	**$ 7,081**	$1,709	**$ 15,743**	$2,000	**$ 17,738**	$ 1,816,352	$ 1,866,900	$ 1,869,325	$ 1,952,393	$ 1,974,985
Hydrogen Conversion	$316	**$ 6,964**	$1,982	**$ 16,017**	$2,667	**$ 18,404**	$ 1,840,236	$ 1,958,423	$ 1,984,149	$ 2,129,596	$ 2,207,873

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Multi-Jurisdictional Baseline*	$0	**$ 6,930**	$0	**$ 16,431**	$0	**$ 18,125**	$ 2,063,483	$ 2,116,735	$ 2,173,426	$ 2,206,248	$ 2,153,693
Existing Technologies	$707	**$ 7,637**	$4,849	**$ 21,281**	$5,813	**$ 23,938**	$ 2,938,941	$ 3,183,738	$ 3,282,417	$ 3,448,684	$ 3,262,585
Long Duration Storage	$674	**$ 7,604**	$2,695	**$ 19,126**	$2,863	**$ 20,988**	$ 2,537,744	$ 2,591,799	$ 2,616,321	$ 2,657,796	$ 2,547,629
Hydrogen Conversion	$427	**$ 7,358**	$3,228	**$ 19,659**	$3,838	**$ 21,963**	$ 2,661,667	$ 2,845,247	$ 2,918,520	$ 3,007,037	$ 2,950,369

Integrated Resource Plan 2023

Southwestern Public Service Company

18% Resource Adequacy

Financial Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 5,843	$0	$ 11,733	$0	$ 13,039	$ 1,379,628	$ 1,428,281	$ 1,461,404	$ 1,472,588	$ 1,473,878
Existing Technologies	$304	$ 6,148	$2,169	$ 13,902	$2,927	$ 15,966	$ 1,990,077	$ 2,009,704	$ 2,251,129	$ 2,343,187	$ 2,381,793
Long Duration Storage	$279	$ 6,123	$1,332	$ 13,065	$1,472	$ 14,511	$ 1,632,442	$ 1,590,008	$ 1,652,432	$ 1,639,272	$ 1,581,862
Hydrogen Conversion	$188	$ 6,031	$1,571	$ 13,304	$2,097	$ 15,136	$ 1,839,206	$ 1,871,059	$ 2,041,938	$ 2,073,032	$ 2,069,991

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 6,648	$0	$ 14,034	$0	$ 15,737	$ 1,772,351	$ 1,834,150	$ 1,893,583	$ 1,905,783	$ 1,952,178
Existing Technologies	$479	$ 7,127	$3,156	$ 17,191	$4,577	$ 20,315	$ 2,756,652	$ 2,761,546	$ 3,293,372	$ 3,560,973	$ 3,717,321
Long Duration Storage	$433	$ 7,081	$1,709	$ 15,743	$2,000	$ 17,738	$ 2,097,401	$ 2,052,074	$ 2,251,291	$ 2,209,626	$ 2,271,611
Hydrogen Conversion	$316	$ 6,964	$1,982	$ 16,017	$2,667	$ 18,404	$ 2,322,054	$ 2,417,710	$ 2,619,408	$ 2,682,815	$ 2,764,618

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Multi-Jurisdictional Baseline*	$0	$ 6,930	$0	$ 16,431	$0	$ 18,125	$ 2,076,962	$ 2,023,278	$ 1,947,496	$ 1,884,043	$ 1,880,122
Existing Technologies	$707	$ 7,637	$4,849	$ 21,281	$5,813	$ 23,938	$ 3,177,546	$ 3,064,725	$ 3,044,574	$ 2,938,303	$ 2,978,882
Long Duration Storage	$674	$ 7,604	$2,695	$ 19,126	$2,863	$ 20,988	$ 2,476,733	$ 2,310,510	$ 2,197,287	$ 2,093,648	$ 1,979,100
Hydrogen Conversion	$427	$ 7,358	$3,228	$ 19,659	$3,838	$ 21,963	$ 2,845,609	$ 2,763,077	$ 2,668,454	$ 2,571,706	$ 2,525,720

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	$ 6,783	$0	$ 16,506	$0	$ 19,689	$ 917,543	$ 1,183,373	$ 1,081,073	$ 1,107,382	$ 1,224,577
Long Duration Storage	($44)	$ 6,739	($1,400)	$ 15,106	($2,364)	$ 17,326	$ 909,357	$ 1,179,052	$ 1,073,971	$ 1,096,187	$ 1,154,099
Hydrogen Conversion	($154)	$ 6,629	($1,209)	$ 15,297	($2,067)	$ 17,623	$ 909,424	$ 1,179,079	$ 1,074,056	$ 1,096,580	$ 1,117,185

Planning Forecast - 15% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	$ 7,271	$0	$ 16,876	$0	$ 19,672	$ 917,445	$ 1,183,058	$ 1,196,568	$ 1,321,851	$ 1,361,263
Long Duration Storage	($126)	$ 7,145	($1,324)	$ 15,552	($2,276)	$ 17,396	$ 909,411	$ 1,179,842	$ 1,188,164	$ 1,307,804	$ 1,222,403
Hydrogen Conversion	($189)	$ 7,081	($899)	$ 15,977	($1,391)	$ 18,281	$ 909,404	$ 1,179,099	$ 1,188,120	$ 1,307,279	$ 1,248,468

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Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	$ 6,783	$0	$ 16,506	$0	$ 19,689	$ 1,391,867	$ 1,477,769	$ 1,575,725	$ 1,653,438	$ 1,830,813
Long Duration Storage	($44)	$ 6,739	($1,400)	$ 15,106	($2,364)	$ 17,326	$ 1,420,569	$ 1,502,571	$ 1,583,479	$ 1,604,123	$ 1,725,925
Hydrogen Conversion	($154)	$ 6,629	($1,209)	$ 15,297	($2,067)	$ 17,623	$ 1,346,851	$ 1,459,001	$ 1,508,011	$ 1,556,576	$ 1,709,925

Planning Forecast - 15% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	$ 7,271	$0	$ 16,876	$0	$ 19,672	$ 1,483,070	$ 1,541,850	$ 1,622,044	$ 1,680,183	$ 1,838,872
Long Duration Storage	($126)	$ 7,145	($1,324)	$ 15,552	($2,276)	$ 17,396	$ 1,485,719	$ 1,554,218	$ 1,630,775	$ 1,640,023	$ 1,752,083
Hydrogen Conversion	($189)	$ 7,081	($899)	$ 15,977	($1,391)	$ 18,281	$ 1,419,901	$ 1,501,122	$ 1,578,927	$ 1,617,274	$ 1,753,349

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Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 6,783	$0	$ 16,506	$0	$ 19,689	$ 1,951,610	$ 2,107,712	$ 2,126,372	$ 2,343,813	$ 2,479,191
Long Duration Storage	($44)	$ 6,739	($1,400)	$ 15,106	($2,364)	$ 17,326	$ 1,748,662	$ 1,800,197	$ 1,800,691	$ 1,883,962	$ 1,910,939
Hydrogen Conversion	($154)	$ 6,629	($1,209)	$ 15,297	($2,067)	$ 17,623	$ 1,753,603	$ 1,868,191	$ 1,895,444	$ 2,040,235	$ 2,125,652

Planning Forecast - 15% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 7,271	$0	$ 16,876	$0	$ 19,672	$ 1,965,925	$ 2,103,519	$ 2,127,842	$ 2,292,501	$ 2,356,966
Long Duration Storage	($126)	$ 7,145	($1,324)	$ 15,552	($2,276)	$ 17,396	$ 1,768,728	$ 1,822,718	$ 1,825,836	$ 1,890,332	$ 1,918,389
Hydrogen Conversion	($189)	$ 7,081	($899)	$ 15,977	($1,391)	$ 18,281	$ 1,802,969	$ 1,911,258	$ 1,949,456	$ 2,090,402	$ 2,156,464

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Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 6,783	$0	$ 16,506	$0	$ 19,689	$ 2,735,219	$ 2,717,482	$ 3,295,769	$ 3,630,968	$ 3,854,643
Long Duration Storage	($44)	$ 6,739	($1,400)	$ 15,106	($2,364)	$ 17,326	$ 2,087,715	$ 2,022,624	$ 2,380,054	$ 2,483,665	$ 2,646,916
Hydrogen Conversion	($154)	$ 6,629	($1,209)	$ 15,297	($2,067)	$ 17,623	$ 2,244,758	$ 2,325,119	$ 2,546,370	$ 2,619,087	$ 2,692,017

Planning Forecast - 15% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 7,271	$0	$ 16,876	$0	$ 19,672	$ 2,551,181	$ 2,607,596	$ 2,978,810	$ 3,173,470	$ 3,306,993
Long Duration Storage	($126)	$ 7,145	($1,324)	$ 15,552	($2,276)	$ 17,396	$ 1,967,050	$ 1,967,627	$ 2,122,066	$ 2,101,411	$ 1,992,181
Hydrogen Conversion	($189)	$ 7,081	($899)	$ 15,977	($1,391)	$ 18,281	$ 2,267,945	$ 2,365,633	$ 2,551,961	$ 2,596,502	$ 2,631,968

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Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	$ 6,844	$0	$ 16,865	$0	$ 20,059	$ 909,421	$ 1,179,000	$ 1,074,005	$ 1,096,289	$ 1,216,097
Long Duration Storage	($2)	$ 6,842	($1,403)	$ 15,462	($2,351)	$ 17,708	$ 909,367	$ 1,178,928	$ 1,074,020	$ 1,096,468	$ 1,211,022
Hydrogen Conversion	($144)	$ 6,700	($1,179)	$ 15,687	($1,990)	$ 18,069	$ 909,380	$ 1,178,842	$ 1,073,932	$ 1,096,439	$ 1,168,930

Planning Forecast - 18% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	$ 7,324	$0	$ 17,266	$0	$ 20,181	$ 909,426	$ 1,179,331	$ 1,188,089	$ 1,307,815	$ 1,349,097
Long Duration Storage	($78)	$ 7,246	($1,365)	$ 15,900	($2,405)	$ 17,777	$ 909,367	$ 1,178,934	$ 1,188,133	$ 1,307,586	$ 1,268,944
Hydrogen Conversion	($142)	$ 7,182	($953)	$ 16,312	($1,518)	$ 18,663	$ 909,397	$ 1,179,156	$ 1,188,179	$ 1,307,492	$ 1,286,654

Integrated Resource Plan 2023

Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	$ 6,844	$0	$ 16,865	$0	$ 20,059	$ 1,461,832	$ 1,545,862	$ 1,644,546	$ 1,731,456	$ 1,902,778
Long Duration Storage	($2)	$ 6,842	($1,403)	$ 15,462	($2,351)	$ 17,708	$ 1,465,223	$ 1,544,350	$ 1,633,731	$ 1,654,263	$ 1,781,081
Hydrogen Conversion	($144)	$ 6,700	($1,179)	$ 15,687	($1,990)	$ 18,069	$ 1,371,384	$ 1,480,874	$ 1,566,352	$ 1,618,985	$ 1,770,925

Planning Forecast - 18% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	$ 7,324	$0	$ 17,266	$0	$ 20,181	$ 1,550,664	$ 1,608,685	$ 1,689,733	$ 1,755,241	$ 1,910,077
Long Duration Storage	($78)	$ 7,246	($1,365)	$ 15,900	($2,405)	$ 17,777	$ 1,534,408	$ 1,602,333	$ 1,679,344	$ 1,691,952	$ 1,806,831
Hydrogen Conversion	($142)	$ 7,182	($953)	$ 16,312	($1,518)	$ 18,663	$ 1,471,334	$ 1,552,979	$ 1,615,245	$ 1,656,664	$ 1,796,899

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 6,844	$0	$ 16,865	$0	$ 20,059	$ 2,020,519	$ 2,176,133	$ 2,197,570	$ 2,412,575	$ 2,531,300
Long Duration Storage	($2)	$ 6,842	($1,403)	$ 15,462	($2,351)	$ 17,708	$ 1,804,245	$ 1,862,432	$ 1,861,900	$ 1,942,956	$ 1,969,556
Hydrogen Conversion	($144)	$ 6,700	($1,179)	$ 15,687	($1,990)	$ 18,069	$ 1,817,892	$ 1,941,657	$ 1,967,843	$ 2,115,104	$ 2,199,322

Planning Forecast - 18% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 7,324	$0	$ 17,266	$0	$ 20,181	$ 2,042,159	$ 2,178,539	$ 2,202,694	$ 2,366,243	$ 2,427,184
Long Duration Storage	($78)	$ 7,246	($1,365)	$ 15,900	($2,405)	$ 17,777	$ 1,823,678	$ 1,881,490	$ 1,879,707	$ 1,944,460	$ 1,970,320
Hydrogen Conversion	($142)	$ 7,182	($953)	$ 16,312	($1,518)	$ 18,663	$ 1,856,052	$ 1,970,826	$ 2,004,117	$ 2,148,016	$ 2,213,325

Integrated Resource Plan 2023

Southwestern Public Service Company

Market & Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - Low Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 6,844	$0	$ 16,865	$0	$ 20,059	$ 2,745,787	$ 2,773,119	$ 3,326,037	$ 3,665,270	$ 3,819,589
Long Duration Storage	($2)	$ 6,842	($1,403)	$ 15,462	($2,351)	$ 17,708	$ 2,130,862	$ 2,066,413	$ 2,398,444	$ 2,511,953	$ 2,687,148
Hydrogen Conversion	($144)	$ 6,700	($1,179)	$ 15,687	($1,990)	$ 18,069	$ 2,317,206	$ 2,404,200	$ 2,613,601	$ 2,682,922	$ 2,753,480

Planning Forecast - 18% Resource Adequacy - High Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 7,324	$0	$ 17,266	$0	$ 20,181	$ 2,609,883	$ 2,682,891	$ 3,119,936	$ 3,333,428	$ 3,406,122
Long Duration Storage	($78)	$ 7,246	($1,365)	$ 15,900	($2,405)	$ 17,777	$ 2,017,415	$ 2,016,395	$ 2,155,660	$ 2,137,780	$ 2,030,355
Hydrogen Conversion	($142)	$ 7,182	($953)	$ 16,312	($1,518)	$ 18,663	$ 2,322,589	$ 2,425,485	$ 2,602,374	$ 2,649,274	$ 2,688,656

Integrated Resource Plan 2023

Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	**$ 7,158**	$0	**$ 17,587**	$0	**$ 20,893**	$ 917,554	$ 1,184,445	$ 1,139,134	$ 1,211,737	$ 1,327,270
Long Duration Storage	($66)	**$ 7,092**	($1,393)	**$ 16,194**	($2,318)	**$ 18,575**	$ 909,345	$ 1,179,169	$ 1,130,714	$ 1,199,255	$ 1,254,786
Hydrogen Conversion	($199)	**$ 6,959**	($1,268)	**$ 16,319**	($2,066)	**$ 18,827**	$ 909,413	$ 1,179,197	$ 1,131,006	$ 1,199,549	$ 1,215,004

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	**$ 7,214**	$0	**$ 17,969**	$0	**$ 21,301**	$ 909,422	$ 1,178,809	$ 1,130,730	$ 1,199,169	$ 1,317,051
Long Duration Storage	$13	**$ 7,226**	($1,374)	**$ 16,596**	($2,299)	**$ 19,002**	$ 909,343	$ 1,179,834	$ 1,130,874	$ 1,199,450	$ 1,318,942
Hydrogen Conversion	($137)	**$ 7,077**	($1,244)	**$ 16,725**	($2,012)	**$ 19,289**	$ 909,404	$ 1,179,042	$ 1,130,724	$ 1,199,127	$ 1,362,468

Integrated Resource Plan 2023
Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	**$ 7,158**	$0	**$ 17,587**	$0	**$ 20,893**	$ 1,506,408	$ 1,594,986	$ 1,697,550	$ 1,781,121	$ 1,970,222
Long Duration Storage	($66)	**$ 7,092**	($1,393)	**$ 16,194**	($2,318)	**$ 18,575**	$ 1,523,237	$ 1,606,574	$ 1,698,576	$ 1,723,337	$ 1,859,221
Hydrogen Conversion	($199)	**$ 6,959**	($1,268)	**$ 16,319**	($2,066)	**$ 18,827**	$ 1,432,340	$ 1,548,921	$ 1,624,349	$ 1,668,364	$ 1,834,755

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	**$ 7,214**	$0	**$ 17,969**	$0	**$ 21,301**	$ 1,575,617	$ 1,662,953	$ 1,766,403	$ 1,857,510	$ 2,044,275
Long Duration Storage	$13	**$ 7,226**	($1,374)	**$ 16,596**	($2,299)	**$ 19,002**	$ 1,584,557	$ 1,668,309	$ 1,759,614	$ 1,782,859	$ 1,919,848
Hydrogen Conversion	($137)	**$ 7,077**	($1,244)	**$ 16,725**	($2,012)	**$ 19,289**	$ 1,437,287	$ 1,552,753	$ 1,655,903	$ 1,722,702	$ 1,891,250

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 7,158	$0	$ 17,587	$0	$ 20,893	$ 2,099,695	$ 2,274,276	$ 2,306,401	$ 2,494,736	$ 2,650,506
Long Duration Storage	($66)	$ 7,092	($1,393)	$ 16,194	($2,318)	$ 18,575	$ 1,896,895	$ 1,963,051	$ 1,973,241	$ 2,058,252	$ 2,093,559
Hydrogen Conversion	($199)	$ 6,959	($1,268)	$ 16,319	($2,066)	$ 18,827	$ 1,892,058	$ 2,023,965	$ 2,062,781	$ 2,215,971	$ 2,304,706

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	$ 7,214	$0	$ 17,969	$0	$ 21,301	$ 2,173,570	$ 2,344,287	$ 2,377,770	$ 2,567,718	$ 2,719,172
Long Duration Storage	$13	$ 7,226	($1,374)	$ 16,596	($2,299)	$ 19,002	$ 1,955,009	$ 2,024,704	$ 2,034,421	$ 2,116,456	$ 2,151,046
Hydrogen Conversion	($137)	$ 7,077	($1,244)	$ 16,725	($2,012)	$ 19,289	$ 1,954,137	$ 2,093,826	$ 2,134,743	$ 2,288,493	$ 2,376,052

Integrated Resource Plan 2023

Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 7,158	$0	$ 17,587	$0	$ 20,893	$ 2,894,712	$ 2,891,557	$ 3,437,415	$ 3,819,596	$ 3,931,978
Long Duration Storage	($66)	$ 7,092	($1,393)	$ 16,194	($2,318)	$ 18,575	$ 2,278,489	$ 2,259,965	$ 2,580,545	$ 2,687,041	$ 2,779,517
Hydrogen Conversion	($199)	$ 6,959	($1,268)	$ 16,319	($2,066)	$ 18,827	$ 2,423,773	$ 2,505,463	$ 2,741,164	$ 2,824,989	$ 2,908,090

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 7,214	$0	$ 17,969	$0	$ 21,301	$ 2,945,486	$ 2,953,524	$ 3,491,314	$ 3,851,637	$ 3,928,932
Long Duration Storage	$13	$ 7,226	($1,374)	$ 16,596	($2,299)	$ 19,002	$ 2,319,808	$ 2,299,722	$ 2,594,023	$ 2,724,558	$ 2,817,471
Hydrogen Conversion	($137)	$ 7,077	($1,244)	$ 16,725	($2,012)	$ 19,289	$ 2,492,101	$ 2,585,029	$ 2,805,637	$ 2,886,007	$ 2,972,236

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Hydrogen Conversion	$0	$ 7,223	$0	$ 19,105	$0	$ 21,327	$ 834,828	$ 1,096,374	$ 1,082,347	$ 1,206,916	$ 1,399,921
Increased Hydrogen Blending	($3)	$ 7,221	($3)	$ 19,101	($4)	$ 21,324	$ 834,933	$ 1,096,370	$ 1,082,419	$ 1,207,235	$ 1,398,595

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Hydrogen Conversion	$0	$ 7,484	$0	$ 20,639	$0	$ 23,191	$ 841,726	$ 1,099,135	$ 1,089,639	$ 1,219,254	$ 1,411,228
Dynamic Load Shifting	($92)	$ 7,393	($268)	$ 20,371	($297)	$ 22,894	$ 841,725	$ 1,099,071	$ 1,089,686	$ 1,219,216	$ 1,369,517

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Long Duration Storage	$0	$ 7,401	$0	$ 18,557	$0	$ 20,367	$ 834,843	$ 1,095,658	$ 1,082,254	$ 1,206,912	$ 1,385,136
Virtual Power Plant	$1	$ 7,402	$1	$ 18,558	$1	$ 20,369	$ 834,988	$ 1,096,229	$ 1,082,314	$ 1,207,033	$ 1,385,258
Virtual Power Plant in 2028	$11	$ 7,413	$65	$ 18,622	$82	$ 20,450	$ 834,845	$ 1,096,118	$ 1,082,301	$ 1,206,992	$ 1,387,286

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Hydrogen Conversion	$0	$ 7,223	$0	$ 19,105	$0	$ 21,327	$ 1,625,605	$ 1,810,355	$ 2,016,690	$ 2,171,078	$ 2,396,163
Increased Hydrogen Blending	($3)	$ 7,221	($3)	$ 19,101	($4)	$ 21,324	$ 1,623,953	$ 1,808,772	$ 2,015,083	$ 2,169,637	$ 2,397,413

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Hydrogen Conversion	$0	$ 7,484	$0	$ 20,639	$0	$ 23,191	$ 1,789,847	$ 1,974,568	$ 2,163,059	$ 2,306,562	$ 2,639,067
Dynamic Load Shifting	($92)	$ 7,393	($268)	$ 20,371	($297)	$ 22,894	$ 1,747,342	$ 1,930,382	$ 2,123,079	$ 2,268,235	$ 2,597,784

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Long Duration Storage	$0	$ 7,401	$0	$ 18,557	$0	$ 20,367	$ 1,762,743	$ 1,948,712	$ 2,117,287	$ 2,224,945	$ 2,402,528
Virtual Power Plant	$1	$ 7,402	$1	$ 18,558	$1	$ 20,369	$ 1,762,713	$ 1,948,670	$ 2,117,253	$ 2,225,008	$ 2,402,483
Virtual Power Plant in 2028	$11	$ 7,413	$65	$ 18,622	$82	$ 20,450	$ 1,769,520	$ 1,955,389	$ 2,125,351	$ 2,234,402	$ 2,412,546

Integrated Resource Plan 2023

Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Hydrogen Conversion	$0	$ 7,223	$0	$ 19,105	$0	$ 21,327	$ 2,570,835	$ 2,728,483	$ 2,808,552	$ 2,902,339	$ 2,849,518
Increased Hydrogen Blending	($3)	$ 7,221	($3)	$ 19,101	($4)	$ 21,324	$ 2,572,062	$ 2,729,531	$ 2,809,355	$ 2,903,160	$ 2,848,367

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Hydrogen Conversion	$0	$ 7,484	$0	$ 20,639	$0	$ 23,191	$ 2,846,822	$ 3,074,998	$ 3,160,975	$ 3,347,472	$ 3,170,706
Dynamic Load Shifting	($92)	$ 7,393	($268)	$ 20,371	($297)	$ 22,894	$ 2,810,467	$ 3,038,553	$ 3,123,054	$ 3,313,308	$ 3,137,696

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Long Duration Storage	$0	$ 7,401	$0	$ 18,557	$0	$ 20,367	$ 2,456,828	$ 2,513,524	$ 2,534,822	$ 2,585,739	$ 2,474,780
Virtual Power Plant	$1	$ 7,402	$1	$ 18,558	$1	$ 20,369	$ 2,457,249	$ 2,513,351	$ 2,534,901	$ 2,586,065	$ 2,474,684
Virtual Power Plant in 2028	$11	$ 7,413	$65	$ 18,622	$82	$ 20,450	$ 2,467,442	$ 2,525,156	$ 2,547,404	$ 2,598,342	$ 2,489,388

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Hydrogen Conversion	$0	$ 7,223	$0	$ 19,105	$0	$ 21,327	$ 2,747,145	$ 2,665,609	$ 2,574,657	$ 2,478,973	$ 2,439,017
Increased Hydrogen Blending	($3)	$ 7,221	($3)	$ 19,101	($4)	$ 21,324	$ 2,745,893	$ 2,664,977	$ 2,573,565	$ 2,478,400	$ 2,438,610

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Hydrogen Conversion	$0	$ 7,484	$0	$ 20,639	$0	$ 23,191	$ 3,074,990	$ 2,907,252	$ 2,867,933	$ 2,837,150	$ 2,909,688
Dynamic Load Shifting	($92)	$ 7,393	($268)	$ 20,371	($297)	$ 22,894	$ 3,038,314	$ 2,867,311	$ 2,833,659	$ 2,810,447	$ 2,872,346

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Long Duration Storage	$0	$ 7,401	$0	$ 18,557	$0	$ 20,367	$ 2,410,793	$ 2,243,761	$ 2,138,193	$ 2,021,682	$ 1,936,786
Virtual Power Plant	$1	$ 7,402	$1	$ 18,558	$1	$ 20,369	$ 2,411,203	$ 2,243,891	$ 2,138,410	$ 2,021,488	$ 1,936,833
Virtual Power Plant in 2028	$11	$ 7,413	$65	$ 18,622	$82	$ 20,450	$ 2,424,219	$ 2,259,285	$ 2,155,300	$ 2,039,565	$ 1,960,380

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Stakeholder Requests

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Long Duration Storage	$0	$ 6,968	$0	$ 15,382	$0	$ 17,367	$ 909,406	$ 1,179,761	$ 1,130,883	$ 1,199,823	$ 1,209,947
Demand Response	($132)	$ 6,836	($413)	$ 14,969	($439)	$ 16,927	$ 909,345	$ 1,179,169	$ 1,130,718	$ 1,199,180	$ 1,158,476

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Hydrogen Conversion	$0	$ 6,964	$0	$ 16,017	$0	$ 18,404	$ 909,417	$ 1,178,921	$ 1,130,741	$ 1,199,085	$ 1,245,845
RICE	$20	$ 6,984	($329)	$ 15,688	($519)	$ 17,885	$ 909,478	$ 1,179,382	$ 1,130,754	$ 1,199,343	$ 1,234,582
RICE - Sub-Hourly	($339)	$ 6,625	($2,619)	$ 13,398	($3,271)	$ 15,133	$ 909,420	$ 1,179,140	$ 1,130,659	$ 1,199,319	$ 1,189,311

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2024	2025	2026	2027	2028
Existing Technologies	$0	$ 7,029	$0	$ 16,787	$0	$ 19,887	$ 909,422	$ 1,178,809	$ 1,130,708	$ 1,199,076	$ 1,296,489
SMR	$1	$ 7,029	$1	$ 16,788	$1	$ 19,888	$ 909,422	$ 1,179,155	$ 1,130,800	$ 1,199,279	$ 1,296,542
SMR - Forced 37, 39, and 41	$1	$ 7,030	$48	$ 16,835	($114)	$ 19,773	$ 909,426	$ 1,179,285	$ 1,130,781	$ 1,199,315	$ 1,296,713

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Southwestern Public Service Company

Stakeholder Requests

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Long Duration Storage	$0	**$ 6,968**	$0	**$ 15,382**	$0	**$ 17,367**	$ 1,463,689	$ 1,533,998	$ 1,611,844	$ 1,621,394	$ 1,738,021
Demand Response	($132)	**$ 6,836**	($413)	**$ 14,969**	($439)	**$ 16,927**	$ 1,395,916	$ 1,469,216	$ 1,548,680	$ 1,560,979	$ 1,679,436

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Hydrogen Conversion	$0	**$ 6,964**	$0	**$ 16,017**	$0	**$ 18,404**	$ 1,431,744	$ 1,523,661	$ 1,581,929	$ 1,633,658	$ 1,781,644
RICE	$20	**$ 6,984**	($329)	**$ 15,688**	($519)	**$ 17,885**	$ 1,442,063	$ 1,554,623	$ 1,604,623	$ 1,602,450	$ 1,736,223
RICE - Sub-Hourly	($339)	**$ 6,625**	($2,619)	**$ 13,398**	($3,271)	**$ 15,133**	$ 1,228,869	$ 1,295,571	$ 1,322,446	$ 1,316,217	$ 1,360,297

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2029	2030	2031	2032	2033
Existing Technologies	$0	**$ 7,029**	$0	**$ 16,787**	$0	**$ 19,887**	$ 1,461,919	$ 1,530,245	$ 1,612,275	$ 1,673,107	$ 1,844,469
SMR	$1	**$ 7,029**	$1	**$ 16,788**	$1	**$ 19,888**	$ 1,461,944	$ 1,530,238	$ 1,612,317	$ 1,672,931	$ 1,844,452
SMR - Forced 37, 39, and 41	$1	**$ 7,030**	$48	**$ 16,835**	($114)	**$ 19,773**	$ 1,461,941	$ 1,530,256	$ 1,612,304	$ 1,673,018	$ 1,844,413

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Long Duration Storage	$0	**$ 6,968**	$0	**$ 15,382**	$0	**$ 17,367**	$ 1,763,996	$ 1,811,146	$ 1,816,080	$ 1,898,162	$ 1,922,142
Demand Response	($132)	**$ 6,836**	($413)	**$ 14,969**	($439)	**$ 16,927**	$ 1,703,606	$ 1,751,037	$ 1,754,970	$ 1,837,726	$ 1,862,554

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Hydrogen Conversion	$0	**$ 6,964**	$0	**$ 16,017**	$0	**$ 18,404**	$ 1,840,236	$ 1,958,423	$ 1,984,149	$ 2,129,596	$ 2,207,873
RICE	$20	**$ 6,984**	($329)	**$ 15,688**	($519)	**$ 17,885**	$ 1,771,466	$ 1,858,322	$ 1,882,941	$ 2,013,930	$ 2,096,289
RICE - Sub-Hourly	($339)	**$ 6,625**	($2,619)	**$ 13,398**	($3,271)	**$ 15,133**	$ 1,405,240	$ 1,429,604	$ 1,432,517	$ 1,517,340	$ 1,580,109

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2034	2035	2036	2037	2038
Existing Technologies	$0	**$ 7,029**	$0	**$ 16,787**	$0	**$ 19,887**	$ 1,961,990	$ 2,120,169	$ 2,139,144	$ 2,332,113	$ 2,467,767
SMR	$1	**$ 7,029**	$1	**$ 16,788**	$1	**$ 19,888**	$ 1,962,123	$ 2,120,243	$ 2,138,857	$ 2,332,490	$ 2,467,782
SMR - Forced 37, 39, and 41	$1	**$ 7,030**	$48	**$ 16,835**	($114)	**$ 19,773**	$ 1,962,544	$ 2,118,450	$ 2,152,869	$ 2,388,508	$ 2,487,121

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Southwestern Public Service Company

Stakeholder Requests

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Long Duration Storage	$0	$ 6,968	$0	$ 15,382	$0	$ 17,367	$ 2,049,103	$ 2,014,190	$ 2,225,385	$ 2,208,252	$ 2,265,279
Demand Response	($132)	$ 6,836	($413)	$ 14,969	($439)	$ 16,927	$ 1,988,287	$ 1,961,360	$ 2,175,695	$ 2,212,982	$ 2,221,210

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Hydrogen Conversion	$0	$ 6,964	$0	$ 16,017	$0	$ 18,404	$ 2,322,054	$ 2,417,710	$ 2,619,408	$ 2,682,815	$ 2,764,618
RICE	$20	$ 6,984	($329)	$ 15,688	($519)	$ 17,885	$ 2,197,299	$ 2,251,500	$ 2,440,355	$ 2,475,730	$ 2,503,202
RICE - Sub-Hourly	($339)	$ 6,625	($2,619)	$ 13,398	($3,271)	$ 15,133	$ 1,686,958	$ 1,654,310	$ 1,922,715	$ 1,980,202	$ 1,953,967

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2030	Delta ($M)	NPV ($M) 2024-2040	Delta ($M)	NPV ($M) 2024-2043	2039	2040	2041	2042	2043
Existing Technologies	$0	$ 7,029	$0	$ 16,787	$0	$ 19,887	$ 2,706,751	$ 2,707,200	$ 3,264,278	$ 3,535,619	$ 3,690,101
SMR	$1	$ 7,029	$1	$ 16,788	$1	$ 19,888	$ 2,707,362	$ 2,707,065	$ 3,264,389	$ 3,535,902	$ 3,690,686
SMR - Forced 37, 39, and 41	$1	$ 7,030	$48	$ 16,835	($114)	$ 19,773	$ 2,687,620	$ 2,759,848	$ 3,157,016	$ 3,318,047	$ 3,458,613

Appendix J

Scenario Expansion Plan

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Integrated Resource Plan 2023

Southwestern Public Service Company

Appendix J - Scenario Expansion Plan

The five (5) tabs herein contain the Scenario Expansion Plans throughout the entire planning horizon for every scenario Southwestern Public Service Company ran in their 2023 Integrated Resource Plan analysis.
The units are in Megawatts
October 11, 2023

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Base Scenarios

Financial Forecast - 15% Resource Adequacy - Base Market and Gas

Multi-Jurisdictional Baseline	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130
Wind	1,500	1,000	890	20	-	-	-	420	350	60	40	50	-	140	170	100	4,740
Solar	295	726	-	244	243	-	-	533	-	339	-	339	-	340	-	-	3,059
Firm Peaking	467	467	-	233	467	467	233	233	-	467	-	467	233	467	467	-	4,666
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,262	2,323	890	497	710	467	233	1,186	350	866	40	856	233	947	637	100	12,595

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	380	1,000	-	280	470	950	490	760	80	770	100	790	220	1,000	540	130	7,960
Wind	1,500	1,000	1,000	910	420	570	90	780	410	40	60	-	-	420	290	230	7,720
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,175	2,726	1,000	1,434	1,133	1,520	580	1,783	490	1,149	160	1,129	220	1,760	830	360	18,449

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	1,280	-	150	270	530	170	290	40	370	30	400	30	600	230	80	4,470
Wind	1,500	1,000	1,000	1,000	370	450	180	780	360	210	220	-	390	-	640	40	8,140
Solar	335	756	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,839
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1,835	3,036	1,000	1,394	883	980	350	1,313	400	919	250	739	420	940	870	120	15,449

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	110	-	350	360	-	-	560	20	630	70	790	150	1,000	500	170	4,710
Wind	1,500	1,000	750	330	400	-	-	860	330	490	260	190	20	450	430	70	7,080
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	-	-	-	-	837	-	-	-	-	-	-	-	-	-	-	837
Total	2,262	2,303	750	924	1,003	837	-	1,663	350	1,459	330	1,319	170	1,790	930	240	16,329

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Base Scenarios

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

Multi-Jurisdictional Baseline	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	100	-	-	-	-	-	-	100	-	-	-	-	80	110	-	390
Wind	1,500	1,000	1,000	370	90	30	110	520	630	50	-	10	140	250	420	-	6,120
Solar	555	746	-	244	243	-	-	693	430	339	-	339	-	340	280	-	4,209
Firm Peaking	467	233	-	467	467	467	233	233	-	467	233	467	233	467	233	233	4,899
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**2,522**	**2,916**	**1,000**	**1,081**	**800**	**497**	**343**	**1,446**	**1,160**	**856**	**233**	**816**	**373**	**1,137**	**1,043**	**233**	**16,455**

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,200	20	480	610	1,000	510	1,000	190	840	270	830	480	1,000	600	360	10,390
Wind	1,500	1,000	1,000	1,000	1,000	1,000	420	1,000	330	160	190	-	-	710	350	180	9,840
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**2,926**	**1,020**	**1,724**	**1,853**	**2,000**	**930**	**2,243**	**520**	**1,339**	**460**	**1,169**	**480**	**2,050**	**950**	**540**	**22,999**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	540	1,430	10	300	230	620	150	410	100	450	110	430	140	640	230	210	6,000
Wind	1,500	1,000	1,000	1,000	1,000	1,000	440	990	410	-	410	20	390	110	940	-	10,210
Solar	1,105	726	-	244	243	-	-	243	-	339	-	339	-	340	70	-	3,649
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**3,145**	**3,156**	**1,010**	**1,544**	**1,473**	**1,620**	**590**	**1,643**	**510**	**789**	**520**	**789**	**530**	**1,090**	**1,240**	**210**	**19,859**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	40	130	-	320	160	1,000	290	820	180	790	200	790	510	1,000	560	300	7,090
Wind	1,500	1,000	1,000	850	160	1,000	260	880	520	340	480	140	-	590	520	400	9,640
Solar	325	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,799
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**2,332**	**3,160**	**1,000**	**1,414**	**563**	**2,000**	**550**	**1,943**	**700**	**1,469**	**680**	**1,269**	**510**	**1,930**	**1,080**	**700**	**21,299**

Integrated Resource Plan 2023
Southwestern Public Service Company

Base Scenarios

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

Multi-Jurisdictional Baseline	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	10	-	-	20	540	-	-	-	-	-	-	-	-	-	-	570
Wind	1,500	1,000	1,000	480	350	900	-	470	-	-	-	-	-	-	-	-	5,700
Solar	485	726	-	244	243	280	-	873	-	339	-	339	-	340	-	-	3,869
Firm Peaking	467	467	-	233	467	467	467	467	233	233	-	-	-	-	-	-	3,500
CC	837	837	837	-	-	-	-	-	-	-	-	-	-	-	-	-	2,511
Total	**3,289**	**3,040**	**1,837**	**957**	**1,080**	**2,187**	**467**	**1,810**	**233**	**572**	**-**	**339**	**-**	**340**	**-**	**-**	**16,149**

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,360	1,920	530	1,000	1,000	1,690	1,010	1,440	550	700	-	-	-	-	-	-	11,200
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	230	-	-	-	-	-	-	-	8,730
Solar	1,545	726	-	244	243	-	-	243	-	339	-	-	-	-	340	-	3,680
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**4,405**	**3,646**	**1,530**	**2,244**	**2,243**	**2,690**	**2,010**	**2,683**	**780**	**1,039**	**-**	**-**	**-**	**-**	**340**	**-**	**23,610**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,220	1,720	320	590	600	880	320	510	230	360	-	-	-	-	-	-	6,750
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	580	-	-	-	-	-	-	-	9,080
Solar	2,285	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,759
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**5,005**	**3,446**	**1,320**	**1,834**	**1,843**	**1,880**	**1,320**	**1,753**	**810**	**699**	**-**	**339**	**-**	**340**	**-**	**-**	**20,589**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	170	1,000	410	1,000	1,000	1,270	1,000	1,060	530	700	-	-	-	-	-	-	8,140
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	240	-	-	-	-	-	-	-	8,740
Solar	615	726	-	244	243	-	-	243	-	339	-	-	-	-	-	340	2,750
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**3,589**	**3,193**	**1,410**	**2,244**	**2,243**	**2,270**	**2,000**	**2,303**	**770**	**1,039**	**-**	**-**	**-**	**-**	**-**	**340**	**21,400**

Xcel Energy | **Integrated Resource Plan 2023**
Southwestern Public Service Company

18% Resource Adequacy

Financial Forecast - 18% Resource Adequacy - Base Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	670	1,000	-	300	470	970	510	840	60	780	110	790	230	1,000	550	160	8,440
Wind	1,500	1,000	1,000	1,000	470	580	150	580	470	40	60	-	-	430	290	170	7,740
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,465**	**2,726**	**1,000**	**1,544**	**1,183**	**1,550**	**660**	**1,663**	**530**	**1,159**	**170**	**1,129**	**230**	**1,770**	**840**	**330**	**18,949**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	670	1,000	-	300	470	970	510	840	60	780	110	790	230	1,000	550	160	8,440
Wind	1,500	1,000	1,000	1,000	500	470	200	820	360	110	280	10	140	190	690	-	8,270
Solar	365	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,839
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,535**	**2,726**	**1,000**	**1,544**	**1,213**	**1,440**	**710**	**1,903**	**420**	**1,229**	**390**	**1,139**	**370**	**1,530**	**1,240**	**160**	**19,549**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	410	-	320	400	-	-	540	120	660	80	750	240	1,000	500	160	5,180
Wind	1,500	1,000	1,000	300	410	-	-	870	340	430	170	200	-	370	450	180	7,220
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	-	-	-	-	837	-	-	-	-	-	-	-	-	-	-	837
Total	**2,262**	**2,603**	**1,000**	**864**	**1,053**	**837**	**-**	**1,653**	**460**	**1,429**	**250**	**1,289**	**240**	**1,710**	**950**	**340**	**16,939**

Integrated Resource Plan 2023
Southwestern Public Service Company

18% Resource Adequacy

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,500	30	510	670	1,000	570	1,000	200	850	300	840	500	1,000	630	380	10,980
Wind	1,500	1,000	1,000	1,000	1,000	1,000	510	1,000	310	170	170	-	-	750	280	180	9,870
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,795	3,226	1,030	1,754	1,913	2,000	1,080	2,243	510	1,359	470	1,179	500	2,090	910	560	23,619

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	860	1,430	20	320	250	640	130	430	100	460	110	430	170	620	230	210	6,410
Wind	1,500	1,000	1,000	1,000	1,000	1,000	620	980	350	-	460	-	220	290	990	-	10,410
Solar	1,045	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	3,519
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	3,405	3,156	1,020	1,564	1,493	1,640	750	1,653	450	799	570	769	390	1,250	1,220	210	20,339

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	360	-	-	220	470	1,000	360	840	170	800	240	820	530	1,000	580	330	7,720
Wind	1,500	1,000	1,000	910	270	1,000	130	1,000	570	350	370	70	-	630	500	310	9,610
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	2,622	3,030	1,000	1,374	983	2,000	490	2,083	740	1,489	610	1,229	530	1,970	1,080	640	21,869

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

18% Resource Adequacy

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,690	1,940	660	1,000	1,000	1,740	1,070	1,500	560	710	-	-	-	-	-	-	11,870
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	260	-	-	-	-	-	-	-	8,760
Solar	1,645	726	-	244	243	-	-	243	-	339	-	-	-	-	340	-	3,780
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**4,835**	**3,666**	**1,660**	**2,244**	**2,243**	**2,740**	**2,070**	**2,743**	**820**	**1,049**	**-**	**-**	**-**	**-**	**340**	**-**	**24,410**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,520	1,730	330	580	620	890	330	520	240	360	-	-	-	-	70	-	7,190
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	570	-	-	-	-	-	-	-	9,070
Solar	2,405	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,879
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**5,425**	**3,456**	**1,330**	**1,824**	**1,863**	**1,890**	**1,330**	**1,763**	**810**	**699**	**-**	**339**	**-**	**340**	**70**	**-**	**21,139**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	550	1,000	440	1,000	1,000	1,460	1,000	1,180	500	690	-	-	-	-	-	-	8,820
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	480	-	-	-	-	-	-	-	8,980
Solar	295	726	-	244	243	-	-	243	-	339	-	-	-	-	-	340	2,430
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**3,649**	**3,193**	**1,440**	**2,244**	**2,243**	**2,460**	**2,000**	**2,423**	**980**	**1,029**	**-**	**-**	**-**	**-**	**-**	**340**	**22,000**

Integrated Resource Plan 2023

Southwestern Public Service Company

Market and Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - Low Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,200	20	480	610	1,000	590	1,000	200	880	250	830	510	1,000	610	370	10,550
Wind	1,500	1,000	1,000	1,000	1,000	1,000	80	1,000	290	30	310	-	-	620	320	140	9,290
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**2,926**	**1,020**	**1,724**	**1,853**	**2,000**	**670**	**2,243**	**490**	**1,249**	**560**	**1,169**	**510**	**1,960**	**930**	**510**	**22,609**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	650	1,460	10	280	240	610	140	440	70	450	150	410	210	650	240	160	6,170
Wind	1,500	1,000	1,000	1,000	1,000	1,000	460	700	550	-	110	-	-	-	760	250	9,330
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	170	-	2,939
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,445**	**3,186**	**1,010**	**1,524**	**1,483**	**1,610**	**600**	**1,383**	**620**	**789**	**260**	**749**	**210**	**990**	**1,170**	**410**	**18,439**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	40	160	-	90	420	1,000	330	810	180	770	250	820	500	1,000	550	360	7,280
Wind	1,500	1,000	1,000	520	400	850	100	930	530	420	300	-	-	640	530	170	8,890
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**2,302**	**3,190**	**1,000**	**854**	**1,063**	**1,850**	**430**	**1,983**	**710**	**1,529**	**550**	**1,159**	**500**	**1,980**	**1,080**	**530**	**20,709**

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

Market and Gas Sensitivities

Planning Forecast - 15% Resource Adequacy - High Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,040	30	490	600	1,000	630	1,000	190	820	290	830	490	1,000	610	310	10,330
Wind	1,500	1,000	1,000	1,000	1,000	1,000	90	830	390	290	160	-	-	700	340	390	9,690
Solar	1,575	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,049
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**4,075**	**2,766**	**1,030**	**1,734**	**1,843**	**2,000**	**720**	**2,073**	**580**	**1,449**	**450**	**1,169**	**490**	**2,040**	**950**	**700**	**24,069**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	310	1,450	20	310	230	630	140	470	100	400	150	380	180	640	230	180	5,820
Wind	1,500	1,000	1,000	1,000	1,000	890	380	500	410	470	90	310	130	100	910	40	9,730
Solar	2,695	726	-	244	243	-	-	243	-	339	-	339	-	340	-	130	5,299
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**4,505**	**3,176**	**1,020**	**1,554**	**1,473**	**1,520**	**520**	**1,213**	**510**	**1,209**	**240**	**1,029**	**310**	**1,080**	**1,140**	**350**	**20,849**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	340	-	360	410	450	270	790	230	790	210	800	550	1,000	580	290	7,070
Wind	1,500	1,000	1,000	780	480	620	250	980	340	390	450	130	-	410	410	450	9,190
Solar	1,495	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	3,969
Firm Peaking	467	-	-	-	-	467	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**3,462**	**2,903**	**1,000**	**1,384**	**1,133**	**1,537**	**520**	**2,013**	**570**	**1,519**	**660**	**1,269**	**550**	**1,750**	**990**	**740**	**21,999**

Integrated Resource Plan 2023
Southwestern Public Service Company

Market and Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - Low Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,500	30	510	670	1,000	660	1,000	210	890	250	840	530	1,000	640	410	11,140
Wind	1,500	1,000	1,000	1,000	1,000	1,000	170	1,000	270	20	350	-	-	650	260	60	9,280
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**3,226**	**1,030**	**1,754**	**1,913**	**2,000**	**830**	**2,243**	**480**	**1,249**	**600**	**1,179**	**530**	**1,990**	**900**	**470**	**23,189**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	970	1,430	10	320	250	640	140	480	70	440	170	420	200	670	260	180	6,650
Wind	1,500	1,000	1,000	1,000	1,000	1,000	580	660	590	20	-	60	10	-	690	230	9,340
Solar	305	726	-	244	243	-	-	243	-	339	-	339	-	340	50	-	2,829
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,775**	**3,156**	**1,010**	**1,564**	**1,493**	**1,640**	**720**	**1,383**	**660**	**799**	**170**	**819**	**210**	**1,010**	**1,000**	**410**	**18,819**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	350	-	-	320	450	1,000	340	860	180	790	280	840	530	1,000	570	360	7,870
Wind	1,500	1,000	1,000	830	360	690	240	910	550	380	200	-	-	600	520	250	9,030
Solar	305	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,779
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**2,622**	**3,030**	**1,000**	**1,394**	**1,053**	**1,690**	**580**	**2,013**	**730**	**1,509**	**480**	**1,179**	**530**	**1,940**	**1,090**	**610**	**21,449**

Integrated Resource Plan 2023

Southwestern Public Service Company

Market and Gas Sensitivities

Planning Forecast - 18% Resource Adequacy - High Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,340	40	510	660	1,000	700	1,000	190	860	290	840	520	1,000	600	330	10,880
Wind	1,500	1,000	1,000	1,000	1,000	1,000	110	860	430	180	210	-	-	670	400	390	9,750
Solar	1,615	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,089
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4,115	3,066	1,040	1,754	1,903	2,000	810	2,103	620	1,379	500	1,179	520	2,010	1,000	720	24,719

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	620	1,450	20	320	250	650	150	500	90	410	150	420	160	650	230	210	6,280
Wind	1,500	1,000	1,000	1,000	1,000	890	490	450	380	430	170	140	290	30	1,000	-	9,770
Solar	2,795	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	5,269
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4,915	3,176	1,020	1,564	1,493	1,540	640	1,193	470	1,179	320	899	450	1,020	1,230	210	21,319

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,340	40	510	660	1,000	700	1,000	190	860	290	840	520	1,000	600	330	10,880
Wind	1,500	1,000	1,000	900	380	880	220	990	380	300	420	110	-	460	380	440	9,360
Solar	1,245	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	3,719
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	4,212	4,370	1,040	1,654	1,283	1,880	920	2,233	570	1,499	710	1,289	520	1,800	980	770	25,729

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,200	20	480	610	1,000	560	1,000	210	770	320	830	470	1,000	690	270	10,430
Wind	1,500	1,000	1,000	1,000	1,000	1,000	200	1,000	270	450	-	-	10	770	-	550	9,750
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,795	2,926	1,020	1,724	1,853	2,000	760	2,243	480	1,559	320	1,169	480	2,110	690	820	22,949

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	650	1,420	-	300	240	620	140	450	80	440	140	420	190	620	270	150	6,130
Wind	1,500	1,000	1,000	1,000	1,000	1,000	460	720	450	90	190	-	-	210	480	320	9,420
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	370	250	3,389
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2,445	3,146	1,000	1,544	1,483	1,620	600	1,413	530	869	330	759	190	1,170	1,120	720	18,939

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	40	50	-	210	380	1,000	330	790	150	780	220	810	460	1,000	680	260	7,160
Wind	1,500	1,000	1,000	590	350	980	90	1,000	610	410	390	80	-	770	40	560	9,370
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	2,302	3,080	1,000	1,044	973	1,980	420	2,033	760	1,529	610	1,229	460	2,110	720	820	21,069

Xcel Energy

Integrated Resource Plan 2023

Southwestern Public Service Company

High Transmission Cost

Planning Forecast - 18% Resource Adequacy - Base Market and Gas

Existing Technology Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,500	30	510	670	1,000	630	1,000	220	800	340	840	480	1,000	700	280	11,000
Wind	1,500	1,000	1,000	1,000	1,000	1,000	270	1,000	270	390	-	-	-	840	-	560	9,830
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**3,226**	**1,030**	**1,754**	**1,913**	**2,000**	**900**	**2,243**	**490**	**1,529**	**340**	**1,179**	**480**	**2,180**	**700**	**840**	**23,599**

Long Duration Storage Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	950	1,430	20	310	250	640	140	470	80	440	150	420	200	700	270	100	6,570
Wind	1,500	1,000	1,000	1,000	1,000	1,000	580	620	530	20	140	70	10	220	640	90	9,420
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	90	380	3,239
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,745**	**3,156**	**1,020**	**1,554**	**1,493**	**1,640**	**720**	**1,333**	**610**	**799**	**290**	**829**	**210**	**1,260**	**1,000**	**570**	**19,229**

Hydrogen Conversion Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	-	170	-	380	530	1,000	370	840	180	780	240	830	510	1,000	700	280	7,810
Wind	1,500	1,000	1,000	760	310	1,000	120	1,000	580	440	370	30	20	690	-	560	9,380
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**3,099**	**2,363**	**1,000**	**1,384**	**1,083**	**2,000**	**490**	**2,083**	**760**	**1,559**	**610**	**1,199**	**530**	**2,030**	**700**	**840**	**21,729**

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Planning Forecast - 15% Resource Adequacy - Base Market and Gas

SMR Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,200	20	480	610	1,000	510	1,000	190	840	270	830	480	1,000	600	360	10,390
Wind	1,500	1,000	1,000	1,000	1,000	1,000	420	1,000	330	160	190	-	-	710	350	180	9,840
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**2,926**	**1,020**	**1,724**	**1,853**	**2,000**	**930**	**2,243**	**520**	**1,339**	**460**	**1,169**	**480**	**2,050**	**950**	**540**	**22,999**

SMR - Forced 37, 39, and 41 Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,200	20	480	610	1,000	520	1,000	270	300	320	250	380	690	690	330	9,060
Wind	1,500	1,000	1,000	1,000	1,000	1,000	370	1,000	-	-	-	-	-	-	20	290	8,180
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Nuclear	-	-	-	-	-	-	-	-	-	300	-	300	-	300	-	-	900
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,795**	**2,926**	**1,020**	**1,724**	**1,853**	**2,000**	**890**	**2,243**	**270**	**939**	**320**	**889**	**380**	**1,330**	**710**	**620**	**20,909**

Demand Response Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	280	1,380	-	290	220	620	150	400	80	450	100	420	130	650	240	190	5,600
Wind	1,500	1,000	1,000	1,000	1,000	940	240	1,000	450	30	490	-	470	30	890	-	10,040
Solar	875	996	-	244	243	-	-	243	-	339	-	339	-	340	-	150	3,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Demand Response	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
Total	**2,855**	**3,376**	**1,000**	**1,534**	**1,463**	**1,560**	**390**	**1,643**	**530**	**819**	**590**	**759**	**600**	**1,020**	**1,130**	**340**	**19,609**

Integrated Resource Plan 2023

Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 15% Resource Adequacy - Base Market and Gas

Increased Hydrogen Blending Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	160	1,000	410	1,000	1,000	1,270	1,000	1,060	530	700	-	-	-	-	-	-	8,130
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	250	-	-	-	-	-	-	-	8,750
Solar	615	726	-	244	243	-	-	243	-	339	-	-	-	-	-	340	2,750
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
Total	**3,579**	**3,193**	**1,410**	**2,244**	**2,243**	**2,270**	**2,000**	**2,303**	**780**	**1,039**	**-**	**-**	**-**	**-**	**-**	**340**	**21,400**

Dynamic Load Shifting Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,190	1,910	510	1,000	1,000	1,670	1,000	1,420	550	700	-	-	-	-	-	-	10,950
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	200	-	-	-	-	-	-	-	8,700
Solar	1,535	726	-	244	243	-	-	243	-	339	-	-	-	-	340	-	3,670
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Demand Response	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119
Total	**4,344**	**3,636**	**1,510**	**2,244**	**2,243**	**2,670**	**2,000**	**2,663**	**750**	**1,039**	**-**	**-**	**-**	**-**	**340**	**-**	**23,439**

Virtual Power Plant Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,220	1,720	320	590	600	880	320	510	230	360	-	-	-	-	-	-	6,750
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	580	-	-	-	-	-	-	-	9,080
Solar	2,285	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,759
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**5,005**	**3,446**	**1,320**	**1,834**	**1,843**	**1,880**	**1,320**	**1,753**	**810**	**699**	**-**	**339**	**-**	**340**	**-**	**-**	**20,589**

Virtual Power Plant in 2028 Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,237	1,730	320	590	600	880	320	510	230	360	-	-	-	-	-	-	6,777
Wind	1,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	580	-	-	-	-	-	-	-	9,080
Solar	2,348	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	4,822
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**5,085**	**3,456**	**1,320**	**1,834**	**1,843**	**1,880**	**1,320**	**1,753**	**810**	**699**	**-**	**339**	**-**	**340**	**-**	**-**	**20,679**

Integrated Resource Plan 2023
Southwestern Public Service Company

Stakeholder Requests

Electrification & Emerging Technology Forecast - 18% Resource Adequacy - Base Market and Gas

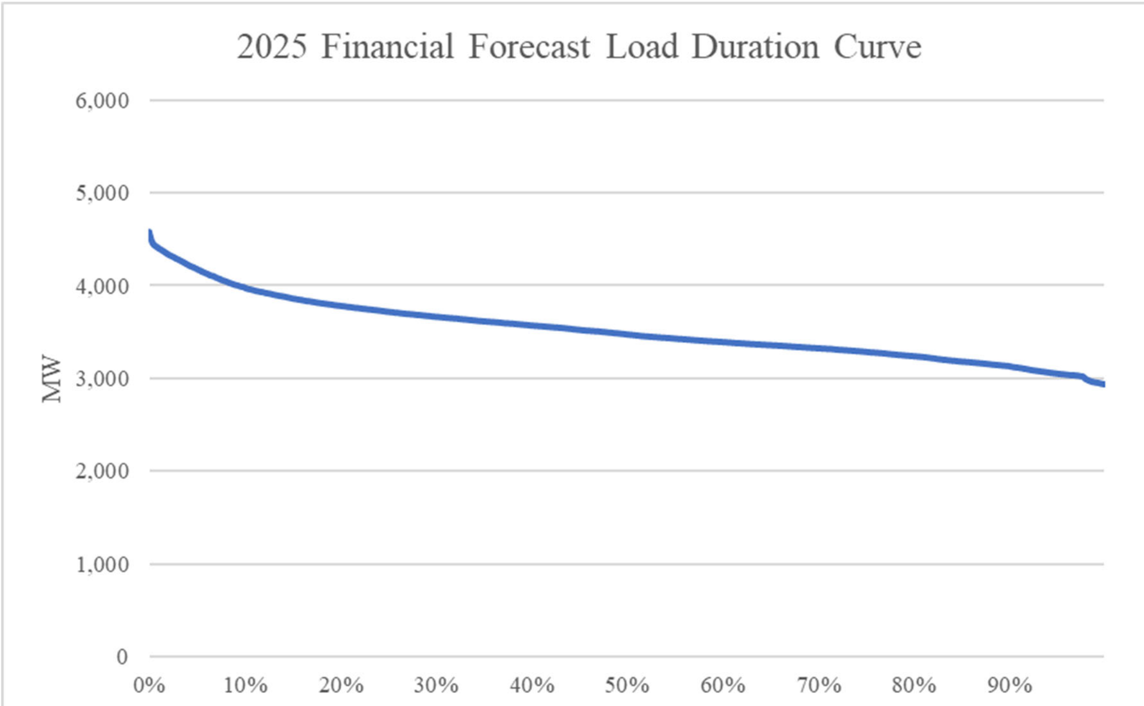
RICE Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	200	-	-	-	-	850	70	490	-	560	40	570	150	930	370	100	4,330
Wind	1,500	1,000	1,000	600	-	900	160	760	390	450	290	200	70	550	410	390	8,670
Solar	325	726	-	244	243	-	-	903	-	339	-	339	-	340	-	-	3,459
Firm Peaking	467	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933
CC	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837
RICE	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	1,807
Total	**2,605**	**3,142**	**1,113**	**957**	**356**	**1,863**	**343**	**2,266**	**503**	**1,462**	**443**	**1,222**	**333**	**1,933**	**893**	**603**	**20,036**

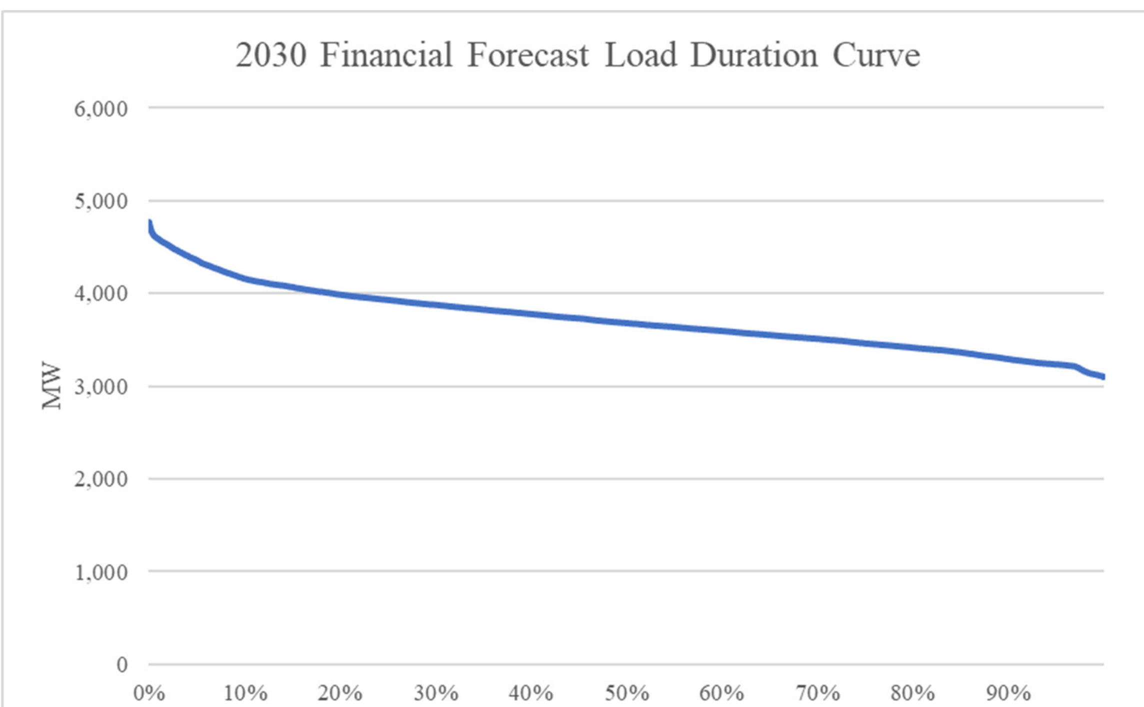
RICE - Sub-Hourly Nameplate	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
BESS	1,000	1,230	20	480	620	1,000	590	1,000	210	820	330	1,000	200	1,000	350	60	9,910
Wind	1,500	1,000	1,000	1,000	1,000	1,000	180	1,000	280	260	30	-	260	120	490	560	9,680
Solar	295	726	-	244	243	-	-	243	-	339	-	339	-	340	-	-	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RICE	113	113	-	-	-	-	-	-	-	-	-	-	-	113	113	113	565
Total	**2,908**	**3,069**	**1,020**	**1,724**	**1,863**	**2,000**	**770**	**2,243**	**490**	**1,419**	**360**	**1,339**	**460**	**1,573**	**953**	**733**	**22,924**

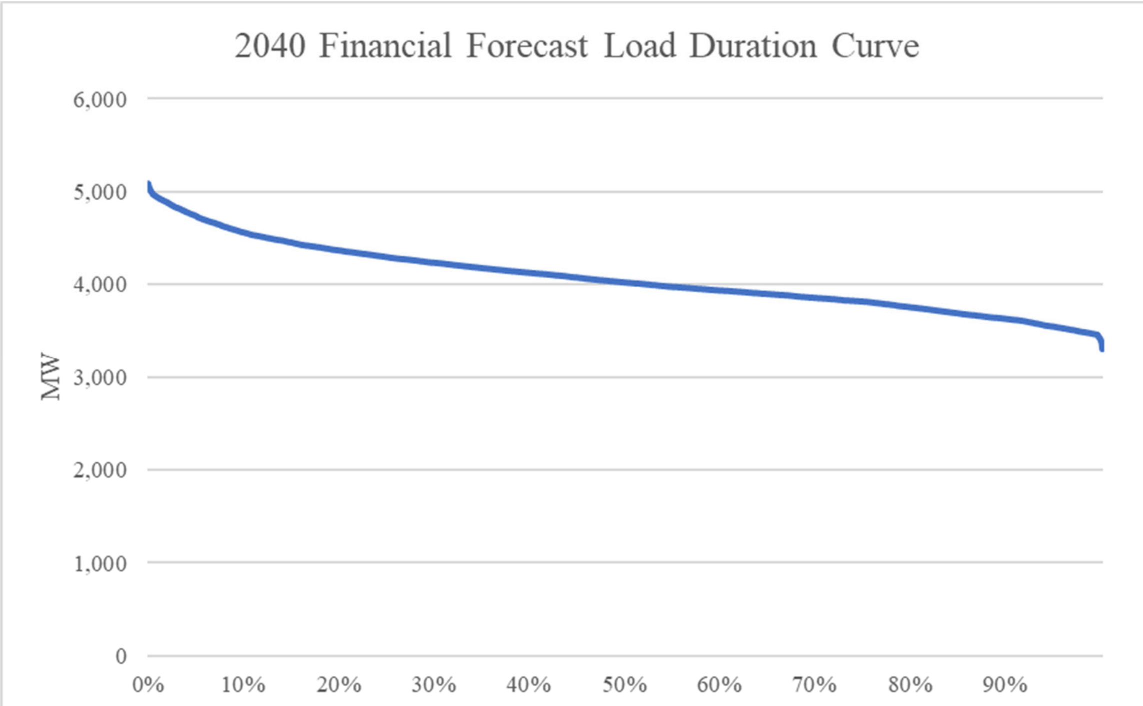
Appendix K

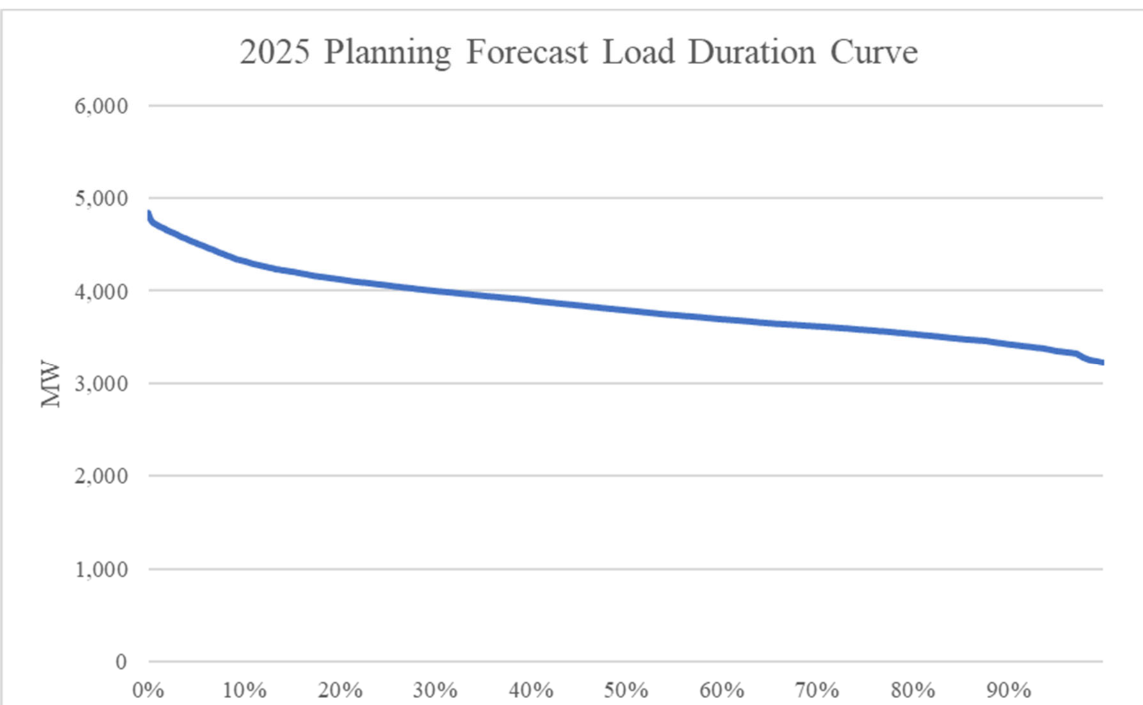
Load Duration Curves and Net Peak Duration Curves

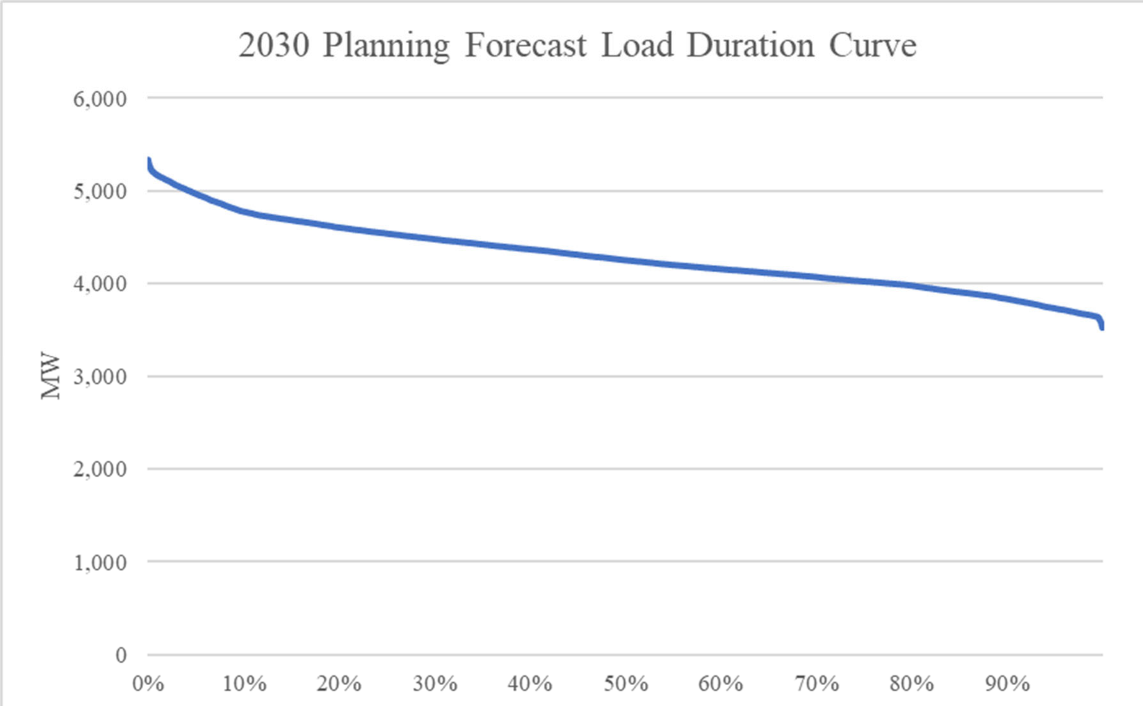
Load Duration Curves

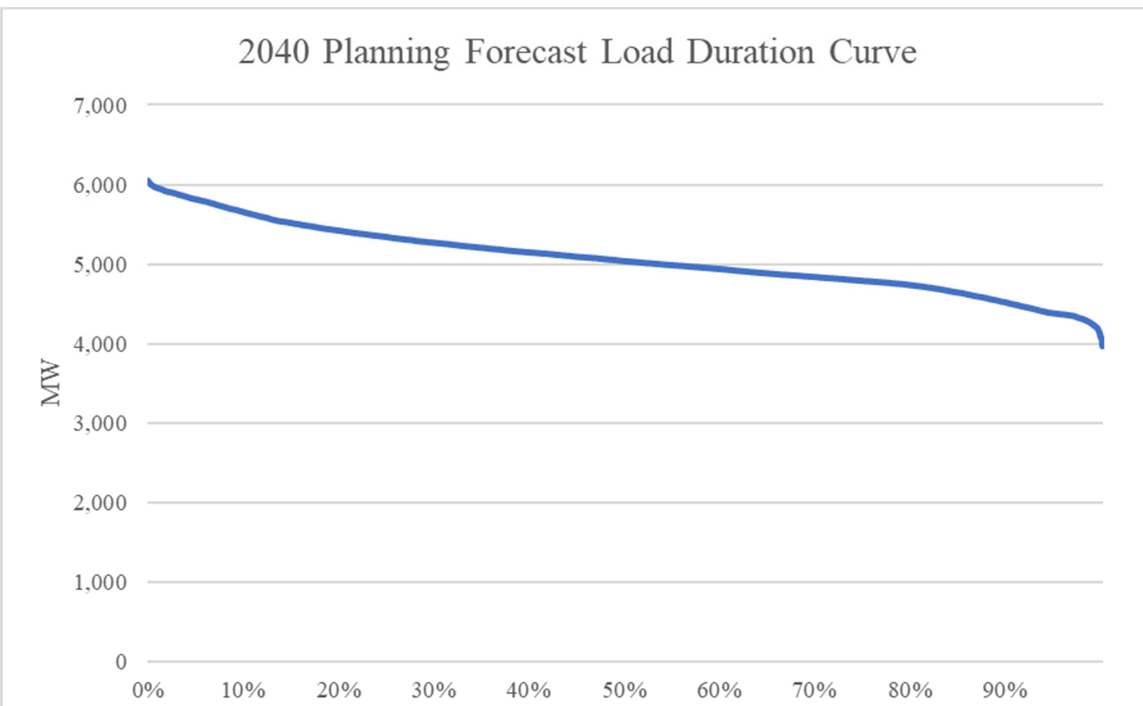





2040 Financial Forecast Load Duration Curve
6,000
5,000
4,000
3,000
2,000
1,000
0
MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%


2025 Planning Forecast Load Duration Curve
6,000
5,000
4,000
3,000
2,000
1,000
0
MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%


2030 Planning Forecast Load Duration Curve
6,000
5,000
4,000
3,000
2,000
1,000
0
MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%


2040 Planning Forecast Load Duration Curve
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
MW
0%
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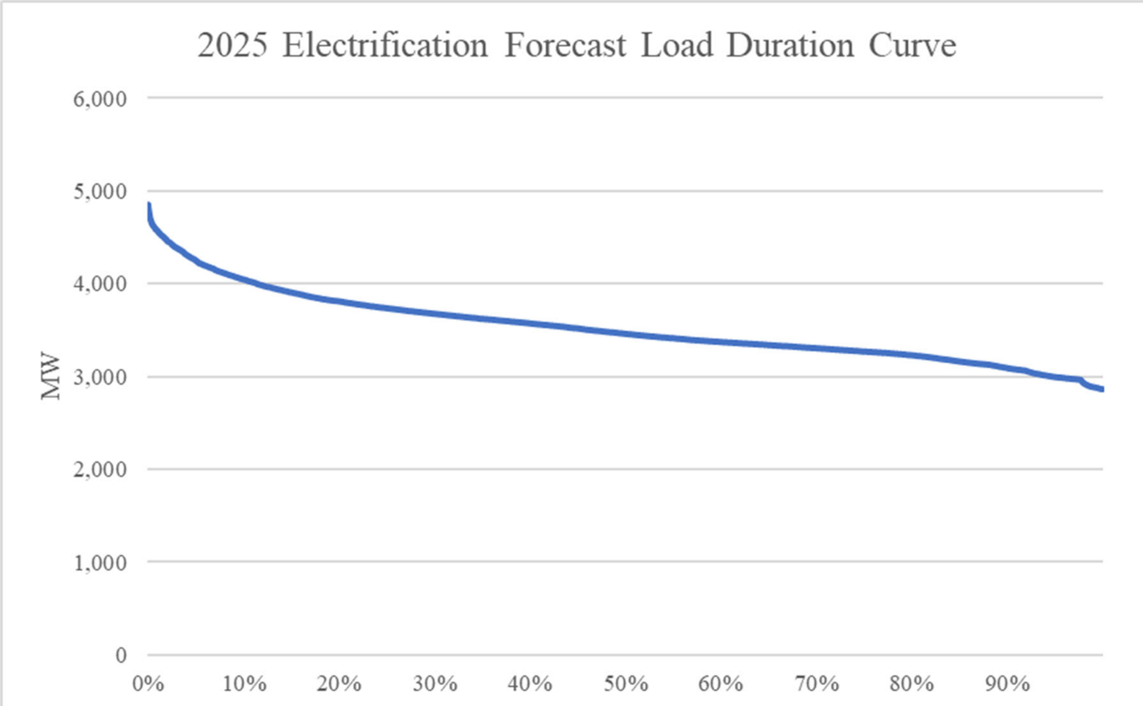
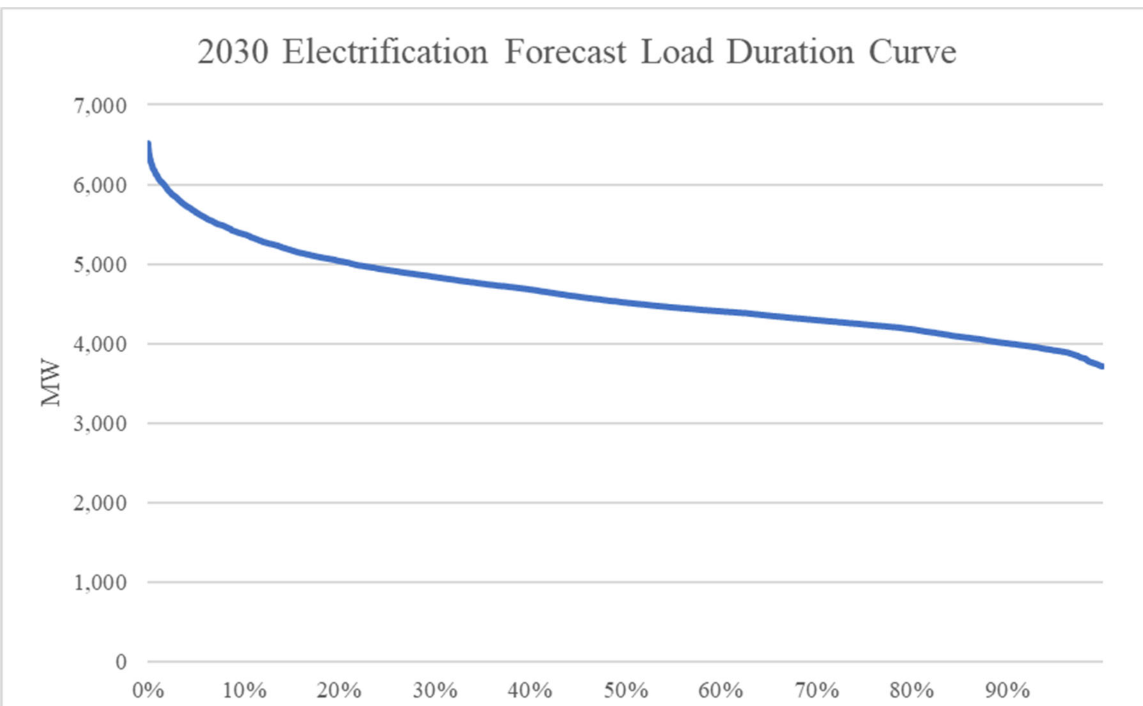
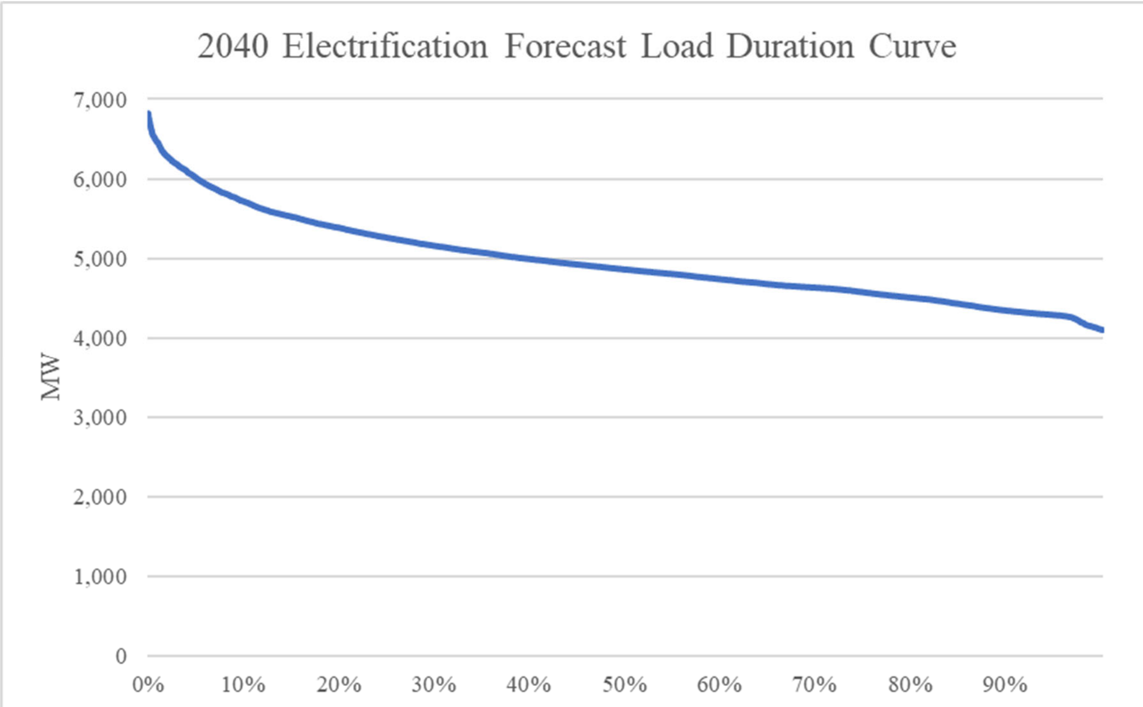
20%
30%
40%
50%
60%
70%
80%
90%


2025 Electrification Forecast Load Duration Curve
MW
6,000
5,000
4,000
3,000
2,000
1,000
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%


2030 Electrification Forecast Load Duration Curve
MW
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%


2040 Electrification Forecast Load Duration Curve
MW
7,000
6,000
5,000
4,000
3,000
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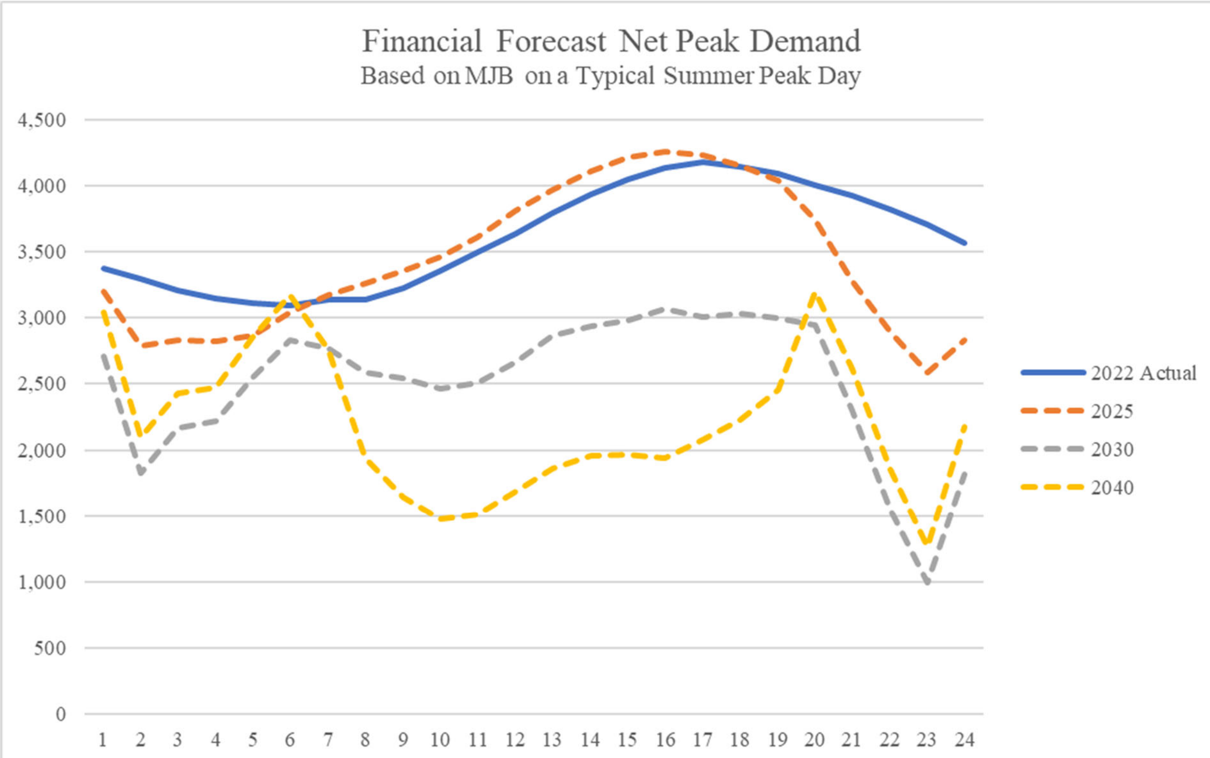
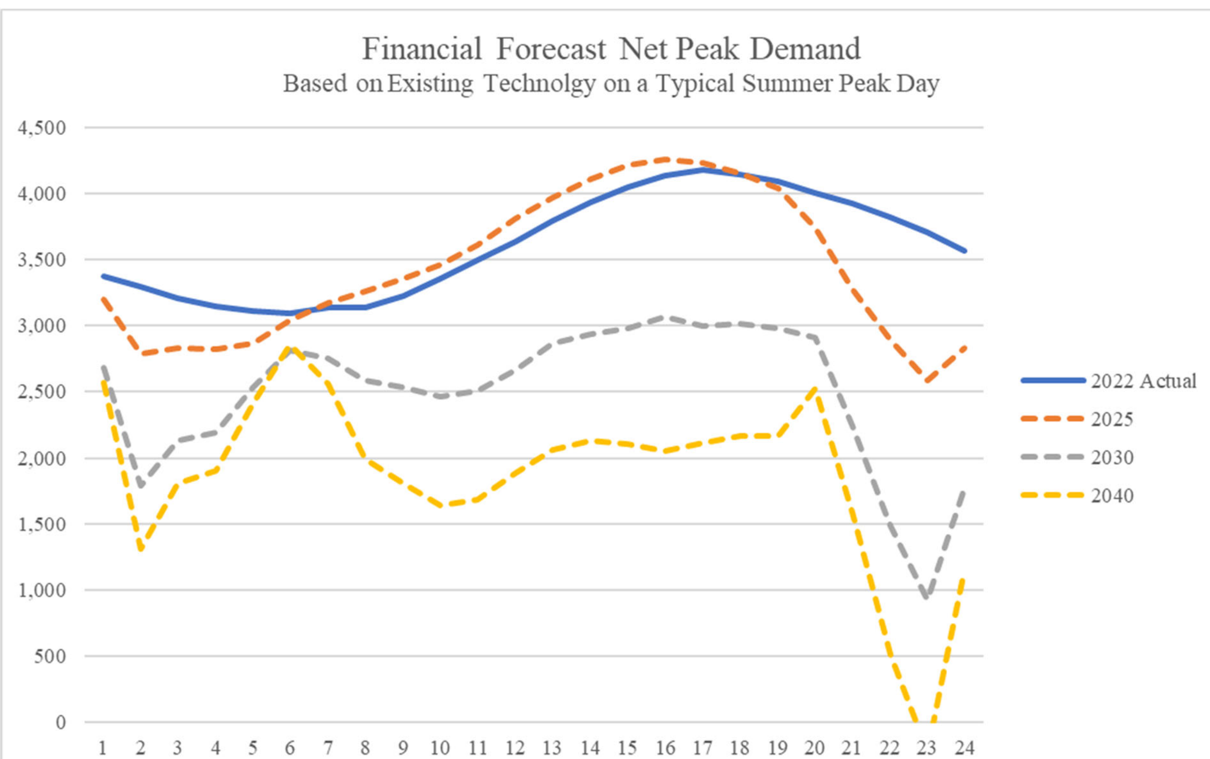
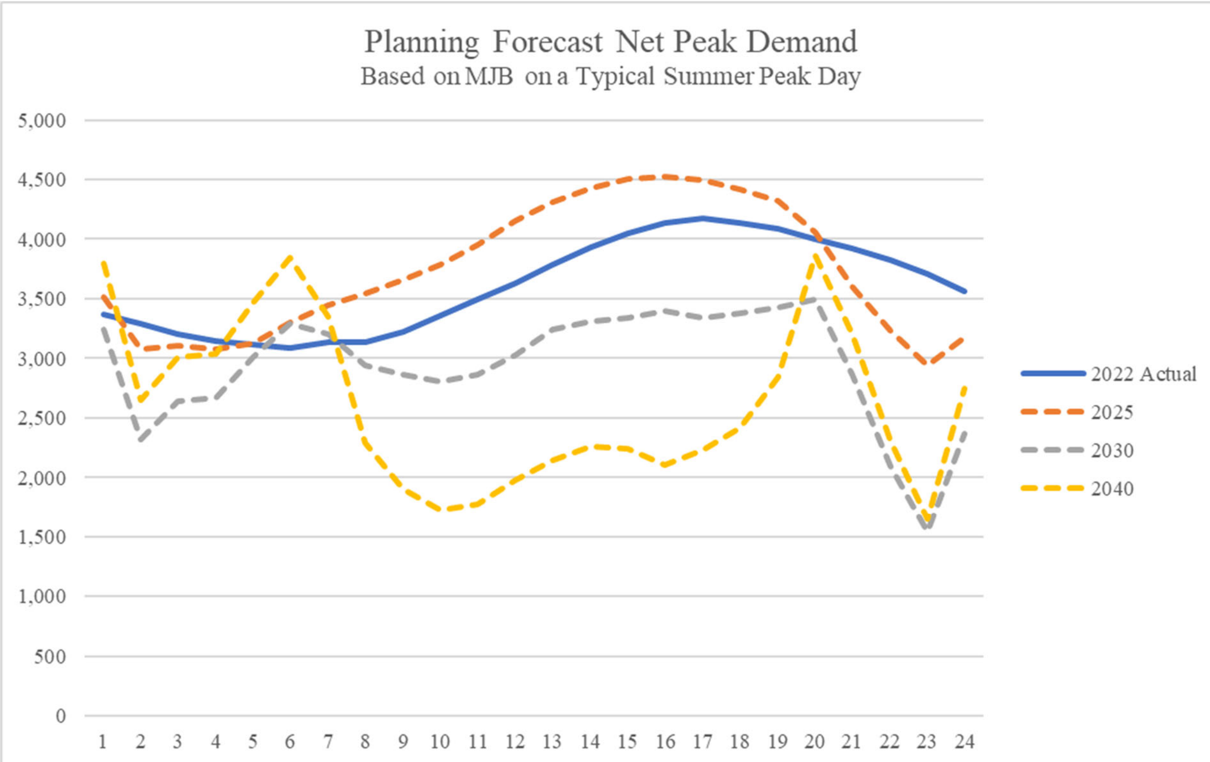
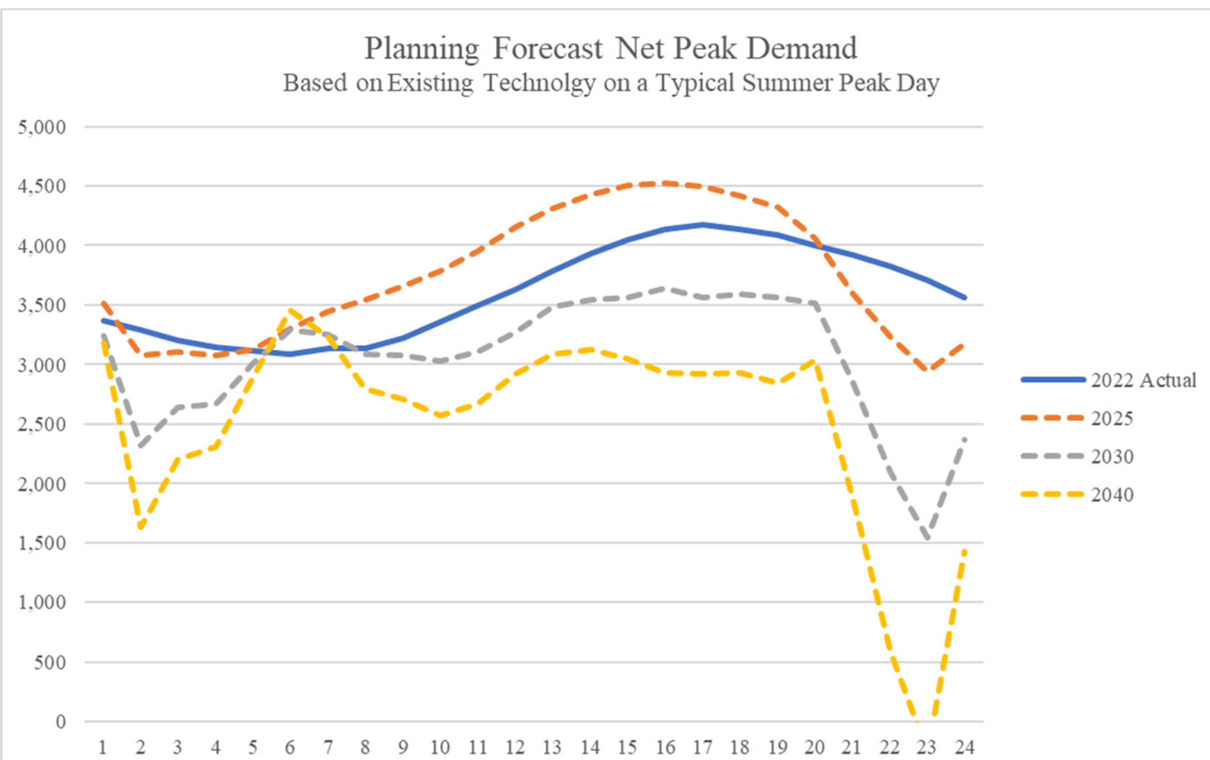
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%

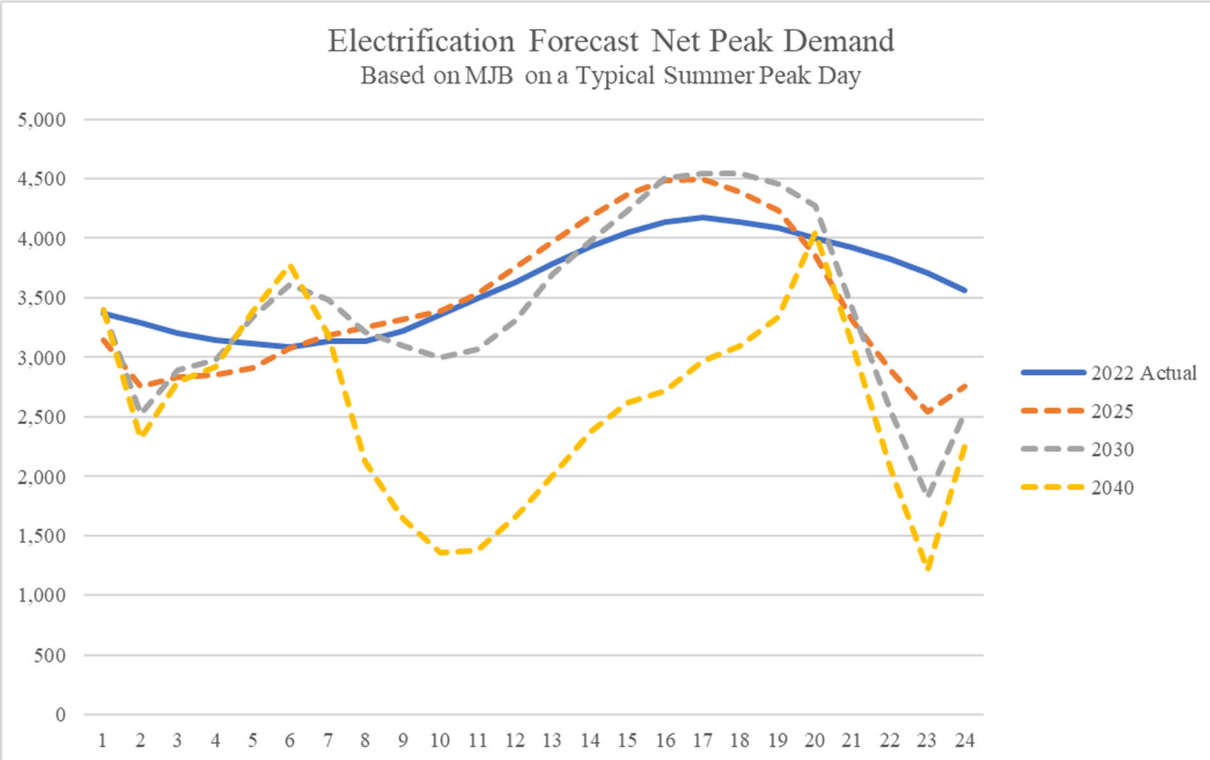
Net Peak Demand Curves






Planning Forecast Net Peak Demand
Based on MJB on a Typical Summer Peak Day
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
2022 Actual
2025
2030
2040


Planning Forecast Net Peak Demand
Based on Existing Technolgy on a Typical Summer Peak Day
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
2022 Actual
2025
2030
2040


Electrification Forecast Net Peak Demand
Based on MJB on a Typical Summer Peak Day
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
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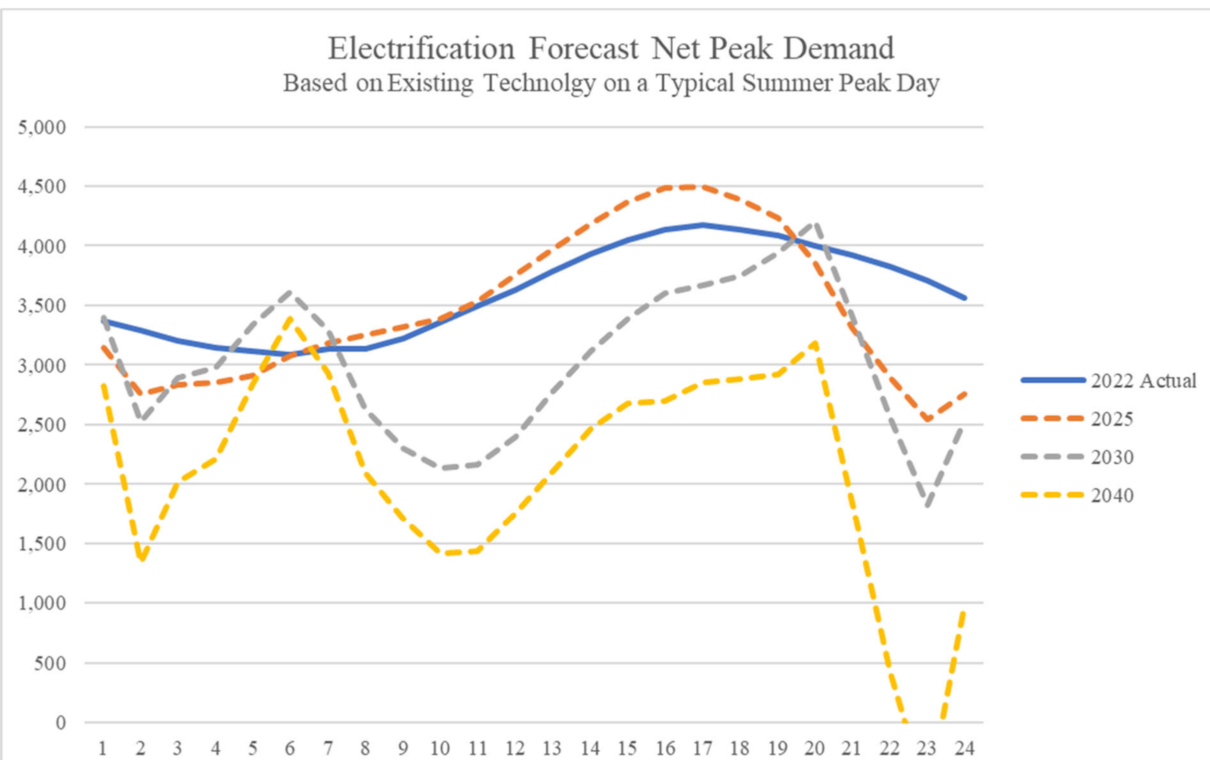
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
2022 Actual
2025
2030
2040


Electrification Forecast Net Peak Demand
Based on Existing Technolgy on a Typical Summer Peak Day
5,000
4,500
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2,000
1,500
1,000
500
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
2022 Actual
2025
2030
2040

Appendix L

Illustrative Timeline -
Actions Following IRP Filing

Task Timing per NM Rules	TASK	2023	2024	2025	2026	2027	2028
	Integrated Resource Plan Filing & Subsequent Processes						
	SPS Files IRP						
* 30 days after filing	Deadline for Written Public Comments on IRP						
* 60 days after filing	Deadline for SPS's Response to Written Comments						
* 90 days after filing	Deadline for NMPRC Utility Division Staff's Statement						
* 120 days after filing	Deadline for Commission to Act on Filed IRP						
	Independent Monitor						
* Following Comm Acceptance of SON & Action Plan	Commission Appoints Independent Monitor						
not specified	SPS Provides Parties with RFP Documents and Timelines						
* Within 21 days of receipt of RFP Docs	Parties Submit Comments on RFP Documents and Timeline						
* Within 28 days of receipt of RFP Docs	Independent Monitor Files Design Report						
* Within 14 days of Design Report filing	Comments Received on Independent Monitor's Design Report						
	RFP Issuance						
Within 5 months of Commission Acceptance of SON & Action Plan AND After comments are submitted on the IM Design Report	SPS Issues RFP						
not specified	RFP Bid Deadline						
Within 120 days after SPS receives bids	Provide Independent Monitor with Evaluation of Bids						
* Within 30 days of SPS submission of short list	Independent Monitor Files Final Report						
not specified	SPS Conveys Results to Bidders and Awards Proposals						
	Generation CCN and PPA Pre-Approval Applications						
not specified	SPS Files CCN(s) and/or PPA Pre-Approval Applications						
* Within 9 months per Section 62-9-1 of the PUA	SPS Receives Commission Decision on CCN and PPA Pre-Approval Applications						
	SPS and Developers Procure Equipment and Materials						
	New Generation Resources Online						
	Post IRP Reporting						
	SPS Files One-Year IRP Update Report						
	SPS Files Two-Year IRP Update Report						
	Regulatory Procedures Other than IRP						
	SPS Files EE Reconciliation Including ICO Proposal						
	SPS Issues RFI for long-lead time emerging dispatchable resources						
* May 15, 2025 per NM Rule	SPS Files Triennial Energy Efficiency Plan						
	SPS Evaluate Expansion of Renewable*Connect after initial program is approved.						
	TOU Study According to Rate Case Stipulation						

* Timing depends on NM Rules and Commission Action

Appendix M

Documents Pertaining to Facilitate Stakeholder Process

GRIDWORKS

Stakeholder Summary
SPS IRP Facilitated Stakeholder Process
May – October 2023

Gridworks was appointed by the New Mexico Public Regulation Commission to conduct the facilitated stakeholder process in support of Southwestern Public Service's (SPS) 2023 Integrated Resource Plan (IRP). Gridworks conducted eight stakeholder meetings plus several interim meetings between May and October of 2023. Stakeholders provided input to the modeling efforts, the statement of need, and the action plan, all which are critical to the IRP. This document summarizes the participation of stakeholders in this process.

Gridworks and SPS worked together to identify and contact stakeholders with a wide range of perspectives. All interested individuals were included on the distribution list for the six-month facilitated stakeholder process. The list included 275 individuals (not including 49 individuals from Xcel Energy/SPS and their consultants nor the four Gridworks personnel.) Over 116 organizations comprised the distribution list. Invitees included city, state and county officials from New Mexico and Texas; New Mexico state legislators; private industry; nonprofit groups; federal agencies; and research organizations. A particular challenge was to reach disadvantaged communities.

146 individuals from 78 different organizations (in addition to utility and facilitator representatives) attended one or more stakeholder meetings. The attached list includes the organizations represented at one or more meetings. 33 individuals attended at least half of the meetings. A summary of the number of individuals and number of organizations attending the eight meetings is shown below.

GRIDWORKS

Organizations/Affiliations of Individuals Participating in the Facilitated Stakeholder Meetings

AES Clean Energy
Air Force
Apex Clean Energy
Assistant County Manager, Lea County
Betty & Wozniak, P.C./Oil & Gas Attorneys
Bureau of Land Management, Carlsbad Field Office
Block Energy
Chevron
Citizens Caring for the Future
City of Artesia
City of Clovis- City Manager
City of Eunice, Acting Manager
City of Hobbs, Mayor
City of Jal, Manager
City of Portales, Manager
City of Roswell
City of Sudan, TX
Coalition for Clean Affordable Energy
Coalition for Community Solar Access
County Manager Chaves County
County Manager Eddy County
County Manager Lea County
County Manager Lincoln County
Crestwood Midstream
Csol Power/NM Solar Energy Association
Curry County
Devon Energy
Economic Development Council of Lea County
EDF Renewables
Eastern Plains Council of Governments
Electric Power Research Institute
ExxonMobil
Help New Mexico/Gonzales Strategies
Holland Hart
House Energy Committee Member (New Mexico Legislature)
House Minority Leader (New Mexico Legislature)

GRIDWORKS

Independent Petroleum Association of NM
Innerex
Interfaith Power and Light
Interwest
Kelly Cable of New Mexico
Louisiana Energy Services dba URENCO
Lincoln County Land and Natural Resource Advisory
Los Alamos National Laboratory
Mad Energy
Marathon Oil
Mewbourne Oil
New Law Group
New Mexico Association of Counties
New Mexico Renewable Energy Industries Association
Nextera Energy
NGL Water Solutions
NM Chamber of Commerce
NM Department of Transportation
NM EMNRD, Energy Conservation and Management Division
NM Environment Dept
NM Large Customer Group
NM Legislature, President Pro-Tempore
NM State Land Office
NM Office of the Attorney General
NM Public Regulation Commission
NM Renewable Energy Transmission Authority
Natural Resources Defense Council
OPL
P 66
Quay County
Roswell Chaves County EDC
Roswell Customer
Senate - Hobbs (New Mexico Legislature)
Sierra Club
Southwest Energy Efficiency Project
Talon/Ipe Environmental Consulting
Targa Resources
The Mosaic Company

GRIDWORKS

Walmart
Wartsila North America
Western Environmental Law Center
Western Resource Advocates

May 16, 2023 Stakeholder Meeting

GRIDWORKS

Stakeholder Orientation

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

May 16, 2023

SUMMARY

Representatives from over 50 different organizations attended a meeting focused on orienting stakeholders to participate in discussions pertaining to Xcel Energy/SPS's Integrated Resource Plan. Following an overview by SPS, participants introduced themselves and offered a topic that is most important to them related to the IRP. Topics mentioned included reliability, affordability, economic vitality during resource transitions, power pool dynamics, transitioning to clean fuels, timing of new resources, modeling assumptions, electrification of transportation and electrification of some industrial operations in the area. The group was asked to identify missing voices who should be invited to participate in this process. The list of meeting participants and their affiliations is attached.

A three-phase stakeholder engagement process was presented by Gridworks, the NM PRC appointed facilitator for this process. Phase 1 focuses on building a shared foundation of knowledge and engaging diverse stakeholders to create a statement of need. Phase 2 has a strong modeling element and aims to develop actions that can meet the statement of need. Phase 3 involves reviews and feedback on the IRP itself.

Roles of stakeholders were presented and the idea of forming smaller working groups was also discussed.

The next meeting of the group, Meeting #2, is scheduled for June 1 from 2-4 PM via ZOOM.
https://us02web.zoom.us/j/8569536132 (ID: 8569536132)
Join by phone
(US) +1 301-715-8592

The June 1 meeting will focus on continuing to learn more about the SPS system requirements and candidate resources for satisfying those requirements. We will also form working groups for the Statement of Need and for modeling.

Meeting #3 of this group will be an in-person workshop held June 13-14 in Roswell, NM. Virtual participation will be available, yet stakeholders are STRONGLY encouraged to attend in person.

Questions, concerns, and suggestions are welcome through info@gridworks.org or by contacting Margie Tatro at mtatro@gridworks.org, 505-205-0838.

GRIDWORKS

MEETING MATERIALS

Materials related to this meeting are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks; https://gridworks.org/initiatives/xcel-sps/

Materials include: this meeting summary, presentation materials, the schedule of the remaining stakeholder meetings, and a copy of the most current NM PRC rule regarding Integrated Resource Planning and the associated Facilitated Stakeholder Process.

A recording of the meeting will also be posted at the above site.

MEETING PARTICIPANTS - In addition to those listed below, 14 participants of unknown organizations were present.

Greg	Link	Air Force, Office of Energy Assurance
Robert	Gomez	BLM, Carlsbad Field Office
Gary	Oppedahl	Block Energy
Kayley	Shoup	Citizens Caring for the Future
Byron	Landfair	City of Artesia
Shannon	Cummins	City of Eunice
Sam	Cobb	City of Hobbs
Matt	White	City of Jal
Sarah	Austin	City of Portales
Chad	Cole	City of Roswell
Louis	Najar	City of Roswell
Mechele	Edwards	City of Sudan, TX
Paula	Chacon	City of Tucumcari
Cara	Lynch	Coalition for Clean Affordable Energy
Kevin	Cray	Coalition for Community Solar Access
Bill	Williams	Chaves County
Roberta	Gonzales	Eddy County
Michael	Gallagher	Lea County
Corey	Needham	Lea County
Athena	Christodoulou	Csol Power/NM Solar Energy Association
Lance	Pyle	Curry County
Jennifer		Economic Development Council of Lea County
Cynthia	Mitchell	Energy Economist

GRIDWORKS

Jerry	Isachiw	EPRI
Jay	Griffin	Gridworks
Margie	Tatro	Gridworks
Deborah	Shields	Gridworks
Roger	Gonzales	Help New Mexico/Gonzales Strategies
Meredith	Dixon	House Energy Comm Member
Jim	Townsend	House Minority Leader
Joan	Brown	Interfaith Power and Light
Chris	Leger	Interwest Energy Alliance
Scott	Lopez	Kelly Cable of New Mexico
Joan	Drake	LES (Louisiana Energy Services) dba URENCO
Nikolas	Stoffel	NM Large Customer Group
Austin	Rueschhoff	NM Large Customer Group
Chelsea	Canada	NM Chamber of Commerce
Jerry	Valdez	NM Dept of Transportation, Office of Special Projects
Daren	Zigich	NM EMNRD, ECMD
Fernando	Martinez	NM RETA
Chris	Hyer	NM RETA
Erik	Aaboe	NM RETA
Grady	Barrens	NM State Land Office
Jim	Bordegaray	NM State Land Office
Craig	Johnson	NM State Land Office, Office of Renewable Energy
Kevin	Gedko	NMAG
Arthur	O'Donnell	NMPRC
Christopher	Dunn	NMPRC
Jonah	Mauldin	NMPRC
Marc	Tupler	NMPRC
Claire	Lang-Reed	NRDC
Melissa	Trevino	OPL
Michael	McMIllin	OPL
Ryan	Pfefferle	OPL
Daniel	Zamora	Quay County
UNKNOWN		Roosevelt County Electric Coop
J.	Griego	Roswell
Mike	Espiritu	Roswell Chaves County EDC
Gay	Kernan	Senate - Hobbs
Joshua	Smith	Sierra Club

GRIDWORKS

Ramona	Blaber	Sierra Club
Michael	Kenney	SWEEP
Jocelyn	Barrett-Kapin	Walmart
David	Millar	Wartsila North America
Thomas	Singer	Western Environmental Law Center
Aaron	Gould	Western Resource Advocates
Cydney	Beadles	Western Resource Advocates
Matthew	Larsen	Wilkinson Barker Knauer LLP, Counsel to Xcel Energy
Ben R.	Elsey	Xcel Energy
Brad	Baldridge	Xcel Energy
Bradley	Morrison	Xcel Energy
Brooke	Trammell	Xcel Energy
Chris	Lefevre	Xcel Energy
Jared	Nelson	Xcel Energy
Linda	Hudgins	Xcel Energy
Luis	Saenz	Xcel Energy
Michael	D'Antonio	Xcel Energy
Mike	McLeod	Xcel Energy
Shirin	Cupples	Xcel Energy
Tara	Fowler	Xcel Energy
Zoe	Lees	Xcel Energy
Chris	Whiteside	Xcel Energy
Luis	Saenz	Xcel Energy
Bernarr	Treat	Xcel Energy

Xcel Energy®

SOUTHWESTERN PUBLIC SERVICE COMPANY 2023 NEW MEXICO INTEGRATED RESOURCE PLAN

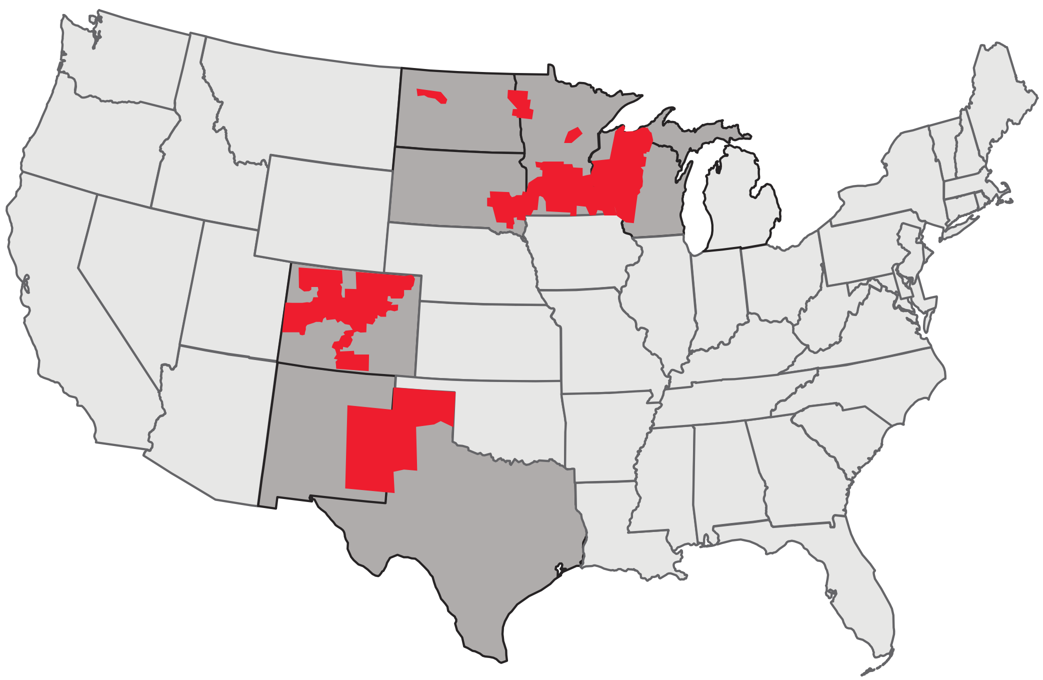
1st Facilitated Stakeholder Meeting

May 16, 2023

WELCOME

Zoë Lees| Regional VP, Regulatory Policy

Xcel Energy



Serving eight states

3.7 million electricity customers

2.1 million natural gas customers

Nationally recognized leader:

- Wind energy
- Energy efficiency
- Carbon emissions reductions
- Innovative technology
- Storm restoration

Data based on 2021 Sustainability Report. To view full report: xcelenergy.com/sustainability.

Xcel Energy's Mission Is Built for Sustainability

Providing customers with safe, clean, reliable energy services at a competitive price is core to our sustainability. We're committed to delivering the essentials while driving positive change that supports the environment and the people and places we serve.

Reach Net Zero Responsibly

Achieve climate goals without compromising reliability or affordability

Value People

Cultivate a diverse, best-in-class workforce, champion safety, inclusion and equity for everyone

Strengthen Communities

Deliver exceptional service and partnership to help the places we serve thrive

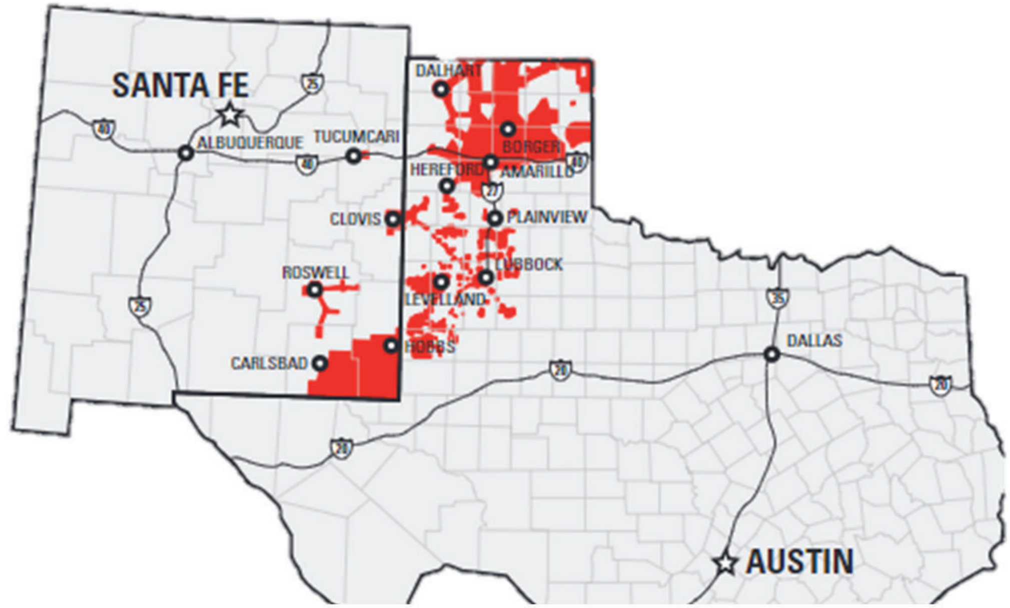
Operate With Integrity

Live our values, govern with discipline and respect human rights

SPS New Mexico service territory

SPS serves approx. 125,000 customers in the following 16 towns in New Mexico:

Artesia	Carlsbad
Clovis	Dexter
Eunice	Hagerman
Hobbs	Jal
Lake Arthur	Loving
Malaga	Otis
Portales	Roswell
Texico	Tucumcari



Employees	1,711	**Property Taxes Paid**	$62 million
		Franchise Fees	$22.3 million
		Spending with local vendors	$744.7 million

Powering the New Mexico Economy

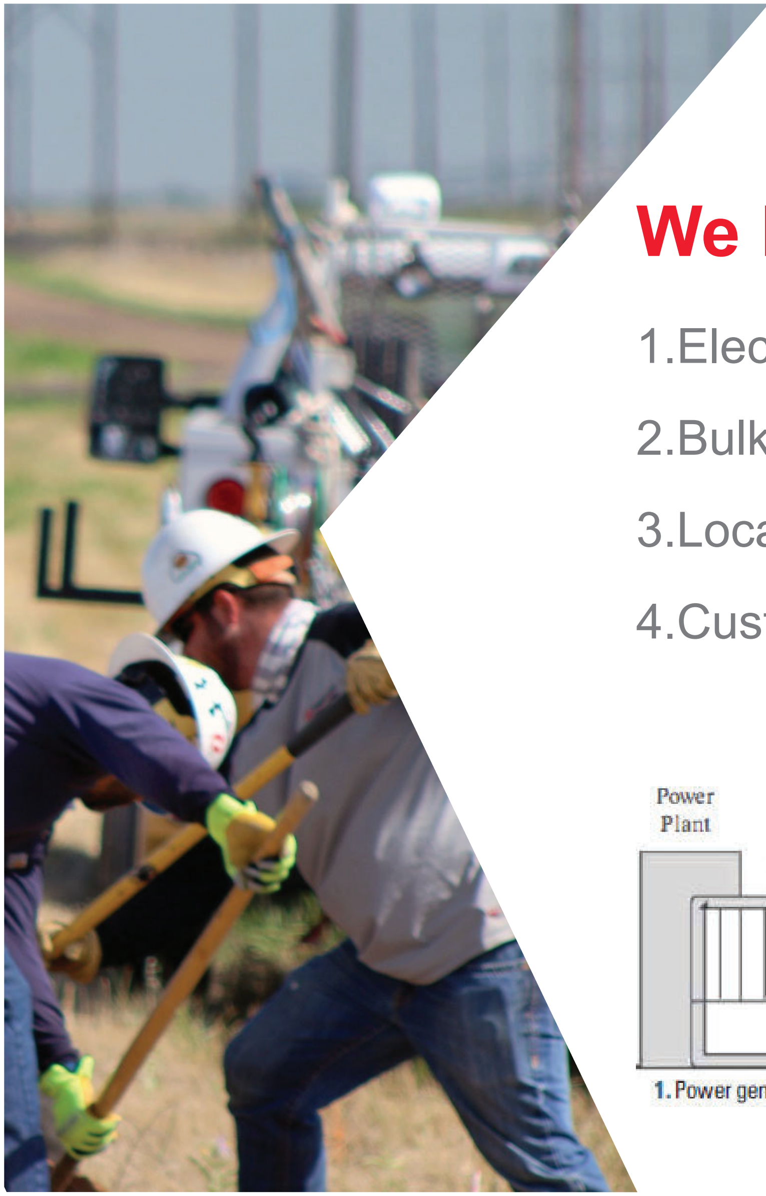
$51 million spent with local suppliers

256 Xcel Energy jobs in 2021

$34 million spent with diverse suppliers

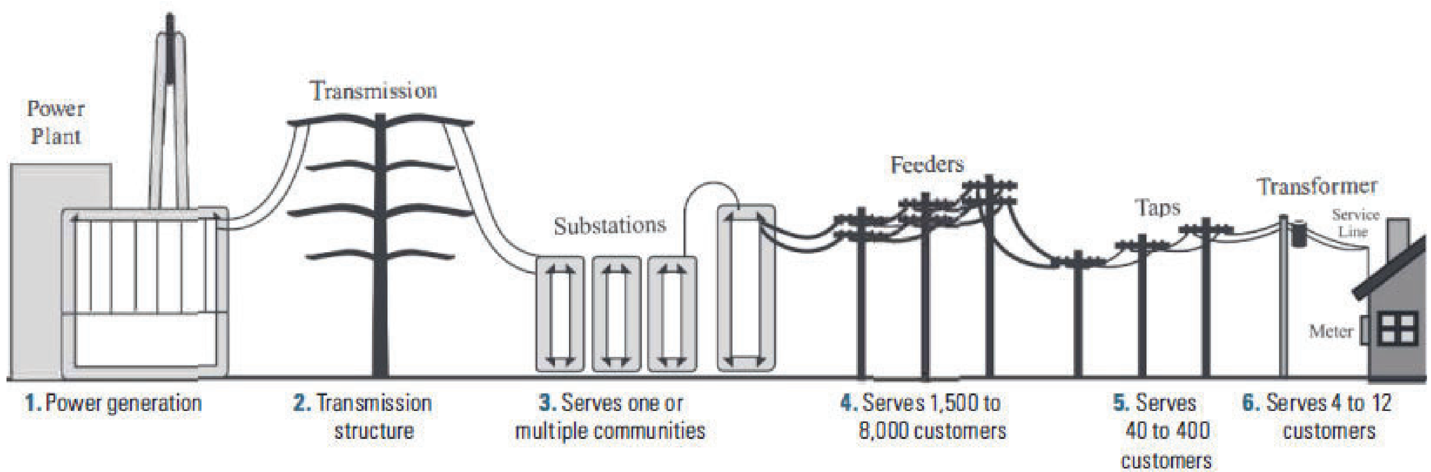
$10.7 million in property taxes

2021 Data



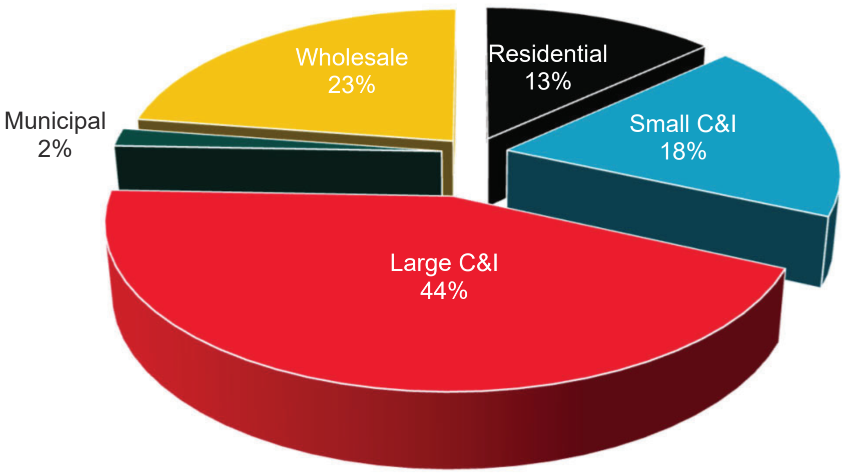
We Do It All

1. Electric generation
2. Bulk Transmission
3. Local Distribution
4. Customer Care

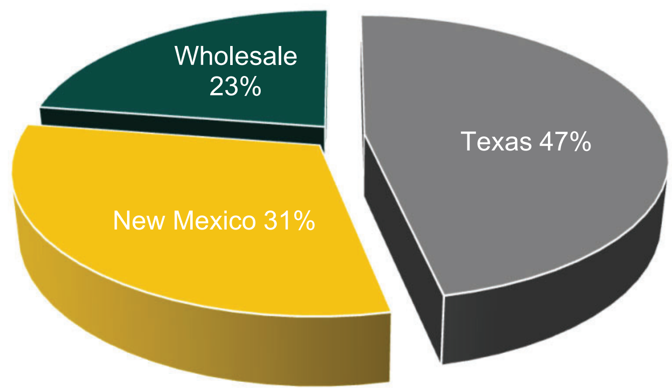


SPS Customers

Sales by Class



Jurisdictional Sales Split

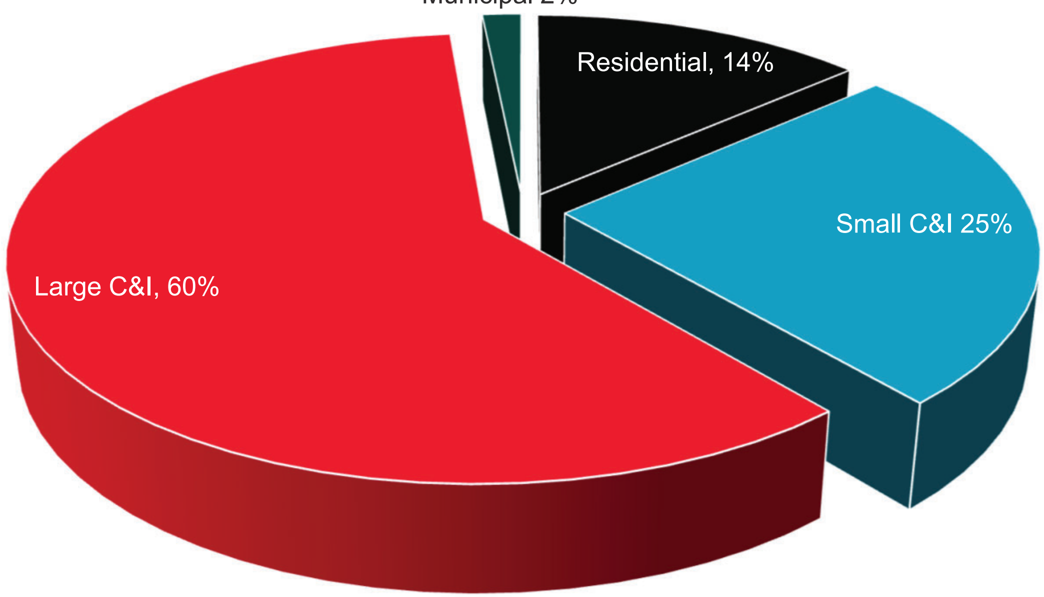


* SPS operates its production and transmission system as an integrated whole

Note: Data Represents Calendar 2022.

New Mexico Customers

Sales by Class



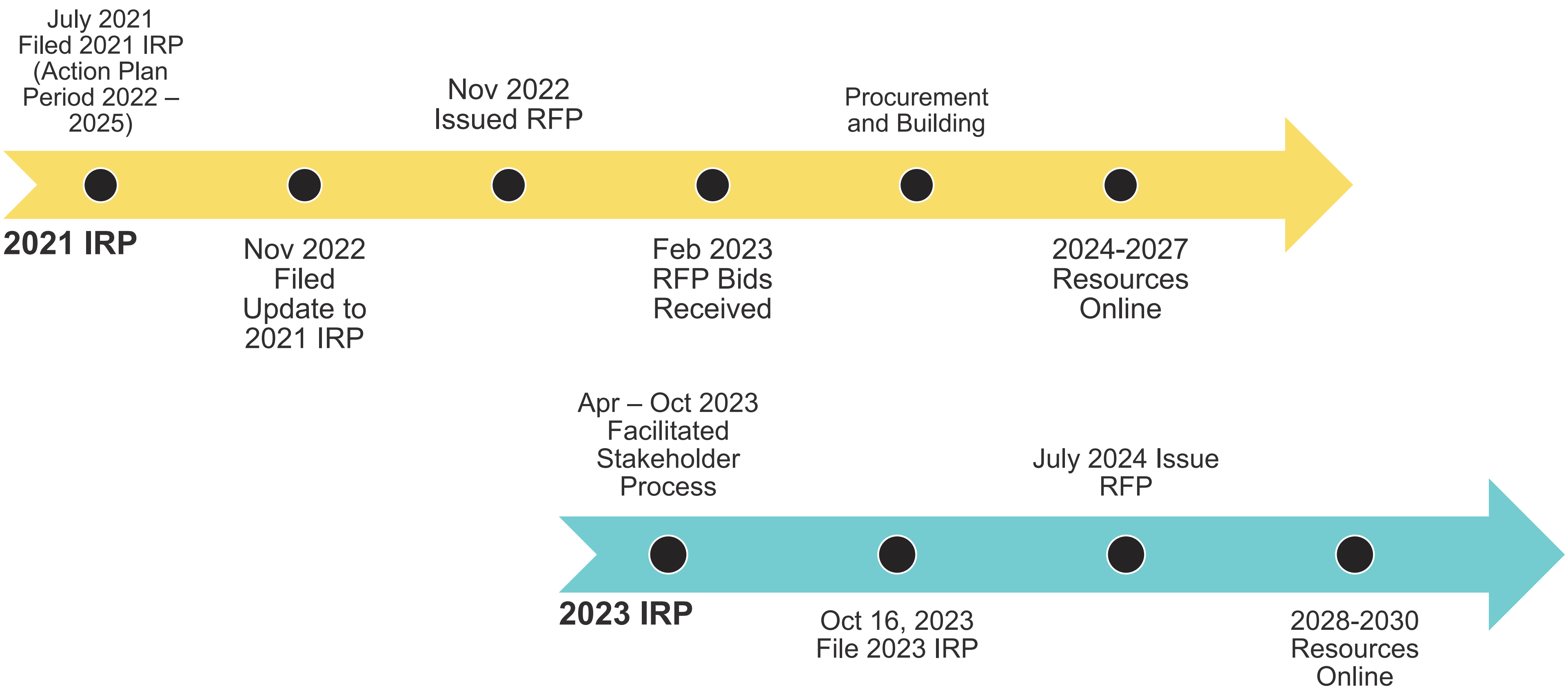
Note: Data Represents Calendar 2022.

NM IOU Comparison

2021 Information	SPS	EPE	PNM
Customer Sales Mix (2021)*			
Residential	15%	45%	36%
Commercial	27%	50%	41%
Industrial	59%	4%	23%
Production Peak (2021)**	4,018 MW	2,051 MW	1,968 MW

*Source – NMPRC Website
**Source - FERC Form 1

SPS IRP Overview

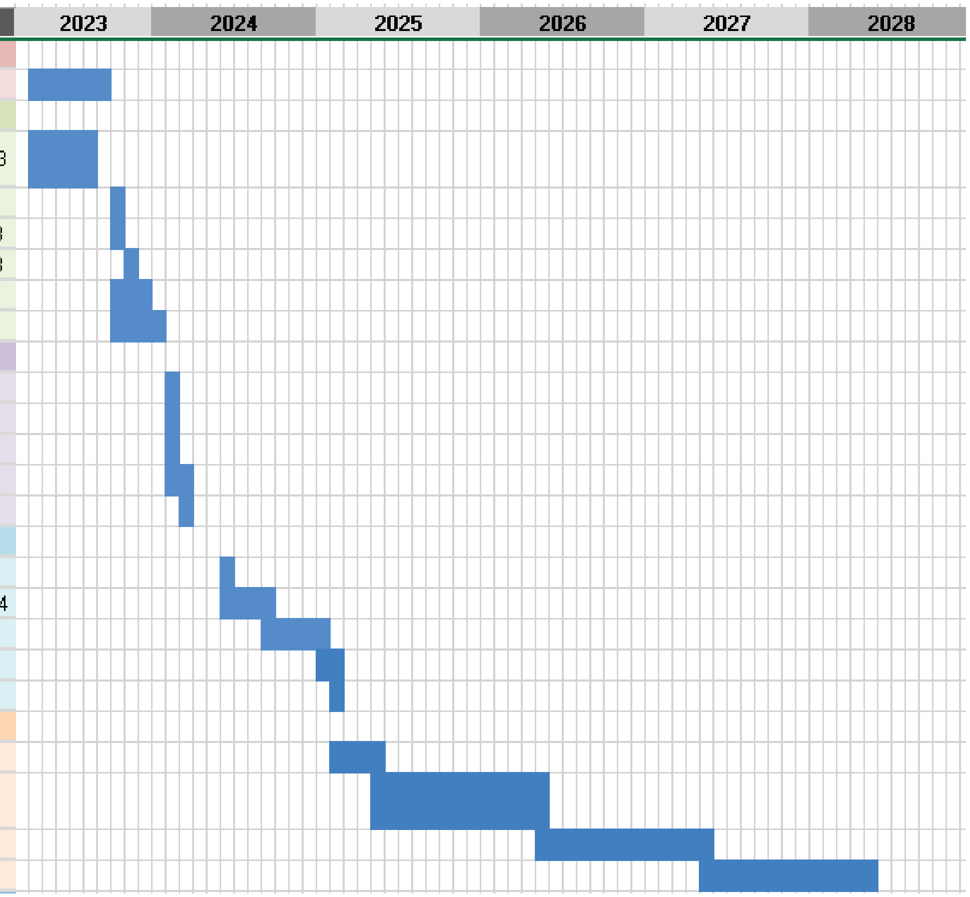


SPS 2023 IRP


New IRP Rule
Changing System Requirements
Generating Unit Retirements
2023 IRP

SPS IRP Timeline

TASK	START	END
Facilitated Stakeholder Process		
SPS Conducts Six-Month Facilitated Stakeholder Process	April 15, 2023	October 15, 2023
Integrated Resource Plan Filing & Subsequent Processes		
SPS Pursues Agreement Among Stakeholders Regarding Modeling Inputs	April 15, 2023	September 13, 2023
SPS Files IRP	October 15, 2023	October 15, 2023
Deadline for Written Public Comments on IRP	October 15, 2023	November 14, 2023
Deadline for SPS's Response to Written Comments	November 15, 2023	December 14, 2023
Deadline for NMPRC Utility Division Staff's Statement	October 15, 2023	January 13, 2024
Deadline for Commission to Act on Filed IRP	October 15, 2023	February 12, 2024
Independent Monitor		
Commission Appoints Independent Monitor	February 12, 2024	February 15, 2024
SPS Provides Parties with RFP Documents and Timelines	February 15, 2024	February 16, 2024
Parties Submit Comments on RFP Documents and Timeline	February 16, 2024	March 8, 2024
Independent Monitor Files Design Report	February 16, 2024	March 15, 2024
Comments Received on Independent Monitor's Design Report	March 15, 2024	March 29, 2024
RFP Issuance		
SPS Issues RFP	July 1, 2024	July 1, 2024
RFP Bid Deadline	July 1, 2024	September 29, 2024
Provide Independent Monitor with Evaluation of Bids	September 29, 2024	January 27, 2025
Independent Monitor Files Final Report	January 27, 2025	February 26, 2025
SPS Conveys Results to Bidders and Awards Proposals	February 26, 2025	February 27, 2025
Generation CCN and PPA Pre-Approval Applications		
SPS Files CCN(s) and/or PPA Pre-Approval Applications	February 27, 2025	June 7, 2025
SPS Receives Commission Decision on CCN and PPA Pre-Approval Applications	June 7, 2025	June 7, 2026
SPS and Developers Procure Equipment and Materials	June 7, 2026	June 7, 2027
New Generation Resources Online	June 7, 2027	June 6, 2028



RELIABILITY FIRST

Ben Elsey | Director, Resource Planning & Bidding
Chris Whiteside | Resource Planning Analyst

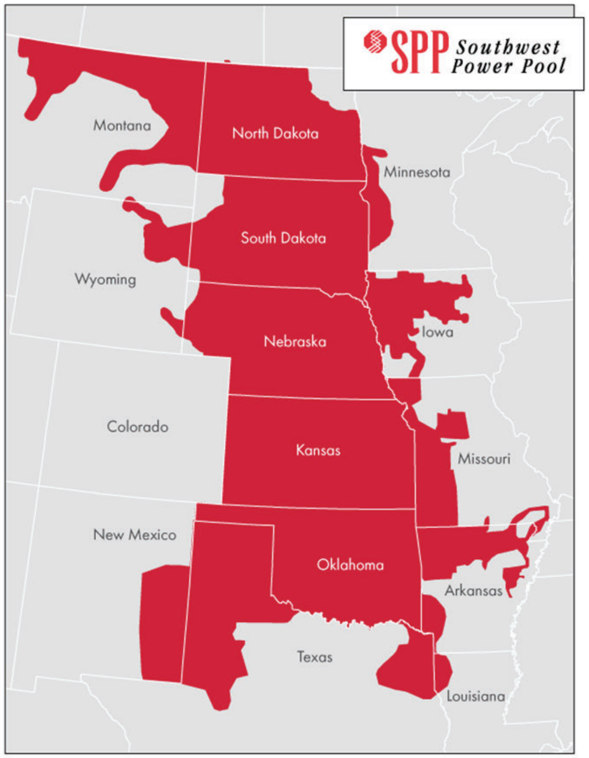
General Terms

- Megawatt (“MW”) – A unit of instantaneous power equal to one million watts, or one thousand kilowatts. Used as a measure of power station output.
- Megawatt-hour (“MWh”) – A megawatt hour equals 1,000 kilowatts of electricity generated per hour and is used to measure electric output (energy).
- Capacity – The maximum level of electric power output that a power plant can supply at a defined point of delivery.
- Capacity Accreditation – The amount of capacity a generation resource is allowed to apply to resource adequacy.
- Resource Adequacy – The ability of a utility’s accredited capacity resources (supply) to meet energy and system loads (demands) at all hours.
- Regional transmission organization (“RTO”) – An electric power transmission system operator (TSO) that coordinates, controls, and monitors a multi-state electric grid.

NORTH AMERICAN POWER GRIDS

Xcel Energy®

Southwest Power Pool Membership



SPS is a member of the Southwest Power Pool ("SPP").

SPP is a regional transmission organization (“RTO”) approved by FERC that oversees the bulk electric grid and wholesale power market in the central United States, providing a portfolio of services, including reliability coordination, tariff administration, regional scheduling, and market operations.

SPP also performs coordinated and transparent regional planning for more than 60,000 miles of high-voltage transmission facilities in the SPP footprint, is the balancing authority for the consolidated 14-state balancing area and operates the SPP Integrated Marketplace.

Reliability Overview

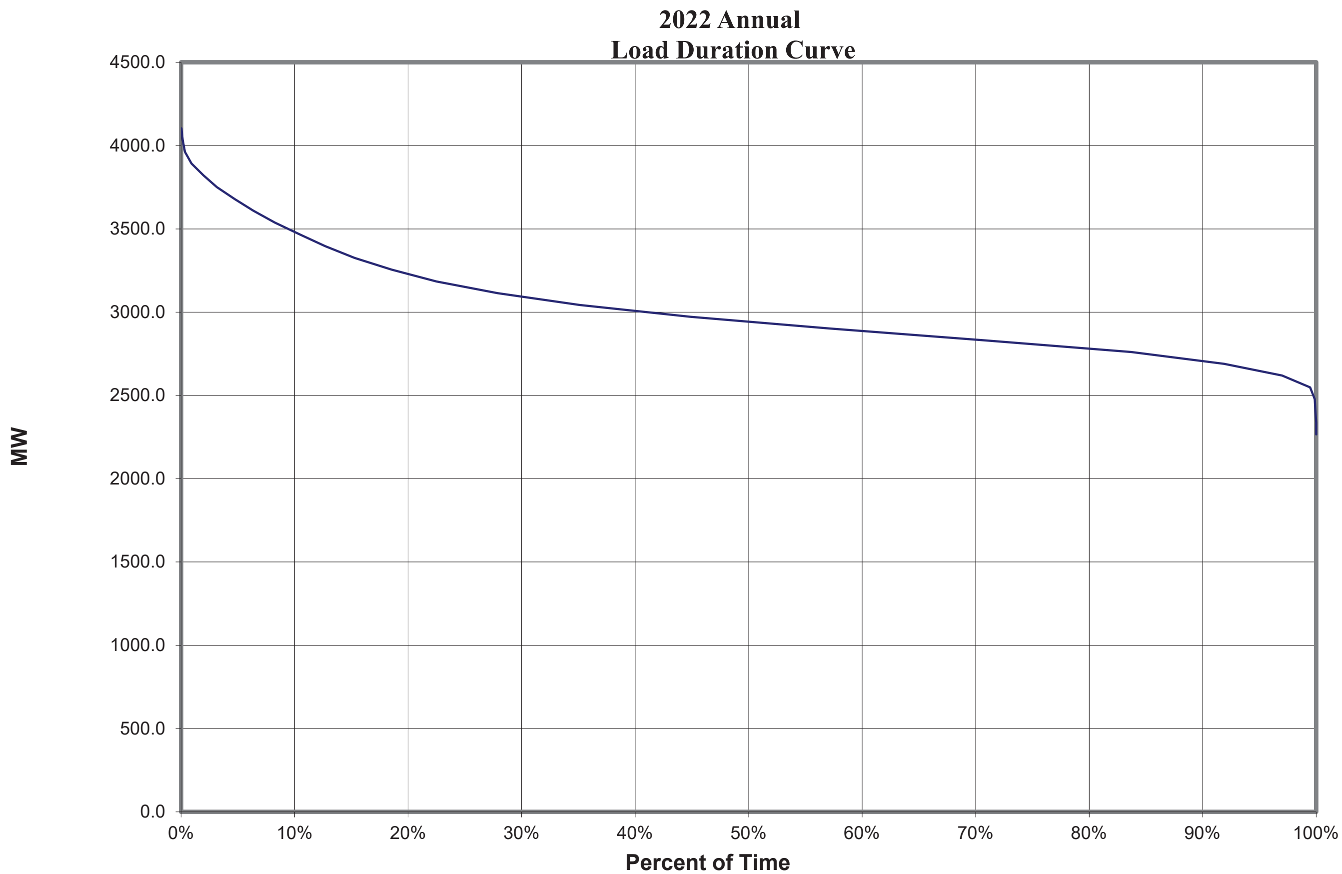
- Ensure sufficient resources to meet demand (load)
- Historical emphasis on planning for resources to meet peak demand (i.e., the single hour in a year when demand is highest)
- As the resource mix transitions towards more intermittent renewable resources a greater focus is needed on meeting demand in all hours (e.g., when the wind is not blowing, or the sun is not shining)
- Contingency resources above peak demand are required and set by the Southwest Power Pool
- A comparison of resources and load is often summarized in a ‘Loads and Resources Table’

Current Summer SPS Loads and Resources Table

LINE NO.	DESCRIPTION	2024	2025	2026	2027	2028	2029	2030
1	TOTAL ACCREDITED CAPACITY (MW)	5,418	5,411	5,158	4,918	4,472	3,178	3,170
2	FIRM LOAD OBLIGATION	4,332	4,580	4,680	4,735	4,881	4,898	5,032
3	TOTAL PLANNING RESERVE MARGIN	650	687	702	710	732	735	755
4	CAPACITY NEED	4,982	5,267	5,383	5,446	5,613	5,633	5,787
5	RESOURCE POSITION (MW): LONG/(SHORT)	436	144	(224)	(527)	(1,141)	(2,455)	(2,618)

- Resource position (line 5) is decreasing due to a combination of decreasing total accredited capacity (line 1) and increasing load (line 2)
- Total planning reserve margin (line 3) is currently set at 15% but is increasingly volatile

Load Duration Curve



Existing Generation

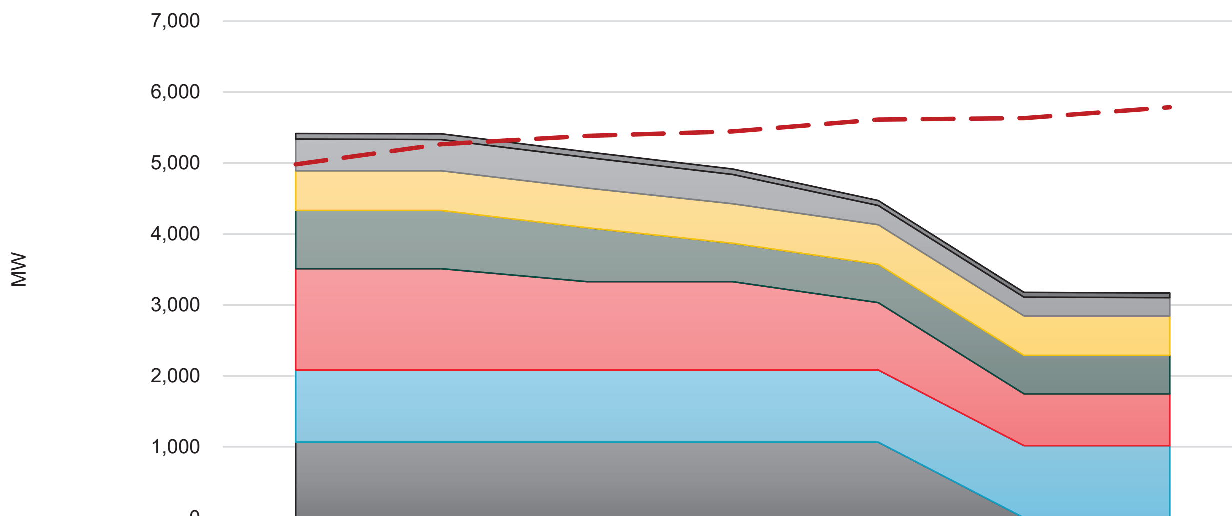
Capacity Overview by Resource Type

Resource Type	Nameplate Capacity (MW)	Accredited Capacity (MW)
Coal	1,069	1,069
Coal to Gas	1,050	1,050
Gas – Steam	1,578	1,578
Gas – CT	828	828
Gas – CC	558	558
Wind	2,451	415
Solar	106	86
Total	7,650	5,584

Decreasing Accredited Capacity

- Aging and retiring gas steam fleet
- Retirement of Tolk coal plant
- Expiring wind and gas PPAs
- 'Firm and dispatchable' resources will be required to replace retiring gas and coal resources
- Multi-year process to procure and construct new generating resources includes obtaining a Generator Interconnection Agreement from the SPP

Accredited Capacity Mix (Not nameplate)



	2024	2025	2026	2027	2028	2029	2030
Solar	78	78	78	78	69	67	65
Wind	447	440	432	412	270	264	257
Gas CC	558	558	558	558	558	558	558
Gas CT	822	822	761	541	541	541	541
Gas Steam	1,427	1,427	1,244	1,244	949	730	730
Coal to Gas	1,018	1,018	1,018	1,018	1,018	1,018	1,018
Coal	1,067	1,067	1,067	1,067	1,067	0	0
Capacity Need	4,982	5,267	5,383	5,446	5,613	5,633	5,787

SPS's Changing Capacity Position

SPP Planning Reserve Margin Increases

Increased Load

Generation Unit Retirements

Increasing Resource Adequacy Requirements

- The transition from traditional thermal resources to more intermittent resources requires additional consideration and evaluation (e.g., ensuring grid stability)
- Recent winter weather events (e.g., Winter Storm Uri) have identified other areas requiring consideration
- Increased Resource Adequacy Requirements to ensure system reliability are required

Increasing Load

- SPS service territory includes the rapidly expanding Permian Basin
- Push towards electrification of other industries and transportation to reduce carbon emissions
- Low rates attracting high energy ‘emerging’ customers (e.g., data centers, clean fuel producers, and cryptocurrency miners)
- Creates economic opportunities for New Mexico and/or reduces carbon emissions from other industries

COMMUNITY & WORKFORCE TRANSITION

Zoë Lees| Regional VP, Regulatory Policy

Our Commitment

Leading the Clean Energy Transition

- 80% reduction in carbon emissions by 2030
- 100% reduction of carbon emission by 2050

A "just transition" of our workforce and communities

- Do not anticipate layoffs
- We anticipate new jobs and opportunities

We will build upon our long and successful history of transition

A RELIABLE & AFFORDABLE FLEET TRANSITION

Brooke Trammell | Regional VP, Regulatory and Pricing

Foundation for the Future

- Fleet transition components in current SPS rate case
- Ratemaking considerations for new generation technologies like battery storage
- Cost recovery of new generation resources

GRIDWORKS

Gridworks would like to invite you and your organization to engage with us in shaping Xcel Energy/Southwestern Public Service Company's 20-year Integrated Resource Plan

WHEN: Tuesday, May 16, 2023

TIME: 2:00 PM – 4:30 PM Mountain Daylight Time

WHERE: Join Zoom Meeting

https://us02web.zoom.us/j/8569536132

Meeting ID: 856 953 6132

The purpose of the meeting is to hear from and enlist the help of people who have a stake in Xcel Energy/Southwestern Public Service Company's 20-year plan. This plan, known as the Integrated Resource Plan (or IRP), covers the 2023-2043 timeframe.

MAY 16 MEETING TOPICS

- Introductions of stakeholders and facilitation team.
- Describe how stakeholders can participate and how much time may be required.
- Answer questions you might have.
- Develop a basic understanding of SPS's electric system.
- Identify critical missing voices or organizations we should invite.
- Discuss meeting schedule and expectations of stakeholders.
- Discuss next steps in preparation for June 13-14 (in-person) workshop, including a set of informational tutorials by SPS on June 1 via ZOOM.

BACKGROUND

In November of 2022, the New Mexico Public Regulation Commission (PRC) put new procedures in place for the state's investor-owned electric utilities to follow to engage stakeholders in developing their 20-year Integrated Resource Plans (IRP). SPS will be filing their plan by Oct. 16th, 2023. The PRC appointed Gridworks (www.gridworks.org) as the independent facilitator to lead a stakeholder process intended to advise the utility and reach potential agreement on two key elements of the IRP – the statement of need and action plan.

WHY WE WOULD LIKE YOU TO CONSIDER PARTICIPATING

A few questions might help to explain why we would like you to consider participating in this process:

1) Why is my voice important to this planning process?

SPS will deliver energy to serve you, your business or community and you will pay for the energy they choose. You may be a customer or provider (current or future) to SPS, you may be responsible for land on which SPS has facilities, or you may care about how this utility is planning to meet the electricity needs of over 400,000 customers systemwide over the next 20 years. You might be interested in how the New Mexico Energy Transition Act and other recent laws are changing the landscape in which our electricity is

GRIDWORKS

produced and delivered. Finally, you may feel strongly about how electricity decisions made today may affect future generations or potential economic development within New Mexico.

2) What makes this process different from past Public Advisory efforts regarding IRPs?

In the past, utilities have conducted public advisory activities to inform stakeholders about the development of the IRP. Now, an independent facilitator has been appointed by the New Mexico Public Regulation Commission to bring stakeholders together to provide input on the plan, to help expand and make it easier for stakeholders' opinions to be included. Gridworks is interested in your views and wants you to have opportunities to hear the views of other stakeholders.

3) Why is it critical to be involved at this time?

The electrical grid is undergoing a significant transformation. The transition to carbon free sources and continued need for system reliability combined with the goal of minimizing costs for customers makes the current decisions regarding this transition critical to all New Mexicans. The voice of all New Mexicans is important as we look to balance the direction and the speed of this transition.

4) What would be expected of me if I decide to participate?

The most important contribution you can make to this effort is to provide feedback and opinions regarding SPS's 2023 Integrated Resource Plan.

You will be asked to attend as many meetings as possible. The current plan includes 6 meetings via ZOOM and two in-person workshops. A schedule of meetings is shown on page 3. The following is a list of roles and responsibilities for stakeholders who choose to participate:

- Review meeting materials in advance.
- Work offline in small subgroups, if interested.
- Serve as respectful, active participants during discussions.
- Consider views and input of other stakeholders.
- Share experiences and expertise.
- Attend as many meetings as possible.
- Review the notes and materials from any missed meetings.

5) Who should I contact for more information? info@gridworks.org or Margie Tatro, mtatro@gridworks.org, 505-205-0838.

GRIDWORKS

SCHEDULE OF STAKEHOLDER MEETINGS

Below is the schedule as it currently exists. Meeting dates are not expected to change, but adjustments to exact times and agenda topics are possible. Locations for in-person workshops are open to input from stakeholders.

DATE	TIME (Mountain Daylight Time)	VENUE	PURPOSE
May 16, 2023	2:00 – 4:30 PM	ZOOM	Orientation meeting. Begin creating a shared foundation of knowledge about the SPS system. Hear from stakeholders about how they would like to engage going forward. Share plan for next 5 months.
June 1, 2023	2:00 – 4:00 PM	ZOOM	Continue building a shared foundation of knowledge. Preview working group opportunities for upcoming workshops.
June 13 and June 14, 2023	12 Noon – 5:00 PM 9:00 AM – 3:00 PM	IN PERSON, Roswell, NM	Develop content for Statement of Need. Build a shared understanding of modeling limitations. Begin discussion of scenarios, futures, and sensitives to inform modeling.
July 6, 2023	1:00 – 5:00 PM	ZOOM	Modeling Forum. Review modeling results to date and select any additional model runs. Enable those who wish to run models with the tools to do so.
Aug. 1-2, 2023	12 Noon – 5:00 PM 9:00 AM – 3:00 PM	IN PERSON, Location TBD	Assess degree of consensus around the Statement of Need. Discuss all modeling results and formulate input for Action Plan.
Aug. 29, 2023	2:00 – 3:30 PM	ZOOM	Assess degree of consensus around the Action Plan.
Sept. 21, 2023	1:00 – 5:00 PM	ZOOM	Review key issues being addressed in IRP, pose any outstanding questions of stakeholders.
Oct. 26, 2023	2:00 – 3:30 PM	ZOOM	Reflect on effectiveness, best practices, and suggestions for future IRP stakeholder processes.

Interests of SPS IRP Stakeholders in attendance at Meeting #1, May 16, 2023

Also included are questions submitted via the meeting chat function and questions posed verbally following the SPS overview presentation.

First Name	Last Name	Organization	Interest and Questions (from chat and Q&A)
Aaron	Gould	WRA	Participation within SPP affecting resource adequacy benefits, resource planning, and IRP
Athena	Christodoulou	CSol Power and SEA	Transition to clean fuel - ensure environmental justice. Is SPS considering faster decarbonization than is required by the NM ETA? Is SPS moving to Loss of Load events?
Austin	Rueschhoff	NMLCG	broad interests; affordability and reliability in face of load growth and ETA
Bill	Williams	Chaves County	will let us know
Chad	Cole	City of Roswell	Glad to know this effort is going on, interest in timing of new resources (prior to retirements)
Chelsea	Canada	NM Chamber of Commerce	Reliability, capacity for future economic development
Chris	Dunn	NMPRC	Unspecified
Chris	Leger	Interwest Energy Alliance	100% accredited capacity regarding thermal generation - lessons learned from Xcel Colorado ERP
Claire	Lang-Ree	NRDC	decarbonize while retaining reliability
Cynthia	Mitchell	Consultant to NMPRC	sorting out interests, TBD. Listing of units scheduled for retirement? Are you explicitly considering storage as a resource? SPS response: yes, we are considering storage but currently have none on the SPS system. Clarification of accredited capacity vs. nameplate. Batteries will provide added capacity to wind and solar generation.
Daniel	Zamora	Quay County	help process
Darren	Zigich	EMNRD	SPS and PNM vast differences - resource adequacy
David	Millar	Wartsila North America	Details of modeling - resource adequacy - properly evaluate flexibility/dispatchability. Does SPS self-build or does it rely on project developers to either contract or build-own-transfer?
Fernando	Martinez	NM RETA	high voltage transmission and energy storage planning
Gary	Oppedahl	Block Energy	residential and mixed grid - advocate energy transition
Gay	Kernan	NM Legislature: Eddy/Lea/Chaves Counties	closure of power plants Cunningham/Maddox; what will be available for backup and jobs made available to displaced workers
Grady	Barrens	NMSLO	Understanding relationships between Xcel, PNM, and local community partnerships
Jeffrey Julie	Pollock Moore	OPL	Maintain and improve SPS reliability and affordability of service while meeting ETA goals
Jennifer		EDC of Lea County	retirement of PP (Maddox and Cunningham) without replacements (want replacements in place first)
Jerry	Valdez	NMDOT	Capacity for transportation electrification
Jerry	Iwachiw	EPRI	nonprofit - research in all topics - support - understand SW needs/issues

Jim	Townsend	NM Legislature: Chaves, Eddy, and Otero Counties	Prices paid by consumers. Costs incurred due to increase in PRM reqd by SPP. Differences between load curve and renewables availability curve? How does SPS ensure dispatchability, dependability and competitive price? Is the public aware of cost increases if there are any planned? What will the cost of electricity be after 2024? SPS response: robust modeling, reliability and resiliency analyses helps ensure system performance. Resource costs come from several sources (generic pricing), then actual RFP bid prices are used to fine tune and inform decisions.
Jim	Bordegaray	NMSLO	all interests - help process
Joan	Brown	Interfaith Power and Light	energy equity - climate resiliency for low-income communities. Does analysis account for increasing temperatures and demands of climate change? SPS Reply: Historically have looked at 40-year normalizations, but there is now discussion within the SPP about using 10-year period due to climate volatility. How does EE play into the plan?
Jonah	Mauldin	NMPRC	help process
Joshua	Smith	Sierra Club	Transition from fossil fuels to renewables as fast as possible - leverage IRA to create jobs
Keven	Gedko	NM Attorney General's Office	interest of small biz and residential – reliable, affordable, clean
Lance	Pyle	Curry County	Participate and learn about process
Louis	Najar	City of Roswell	don't retire plants before replacements are in place
Matt	White	City of Jal	Reliability - impact on water supply
Mechele	Edwards	City of Sudan, TX	Closure of Tolk and Plant X and impact on the communities: schools, employees, support businesses, etc. How likely are these facilities to be repowered with alternative energy source plants? When will this be determined?
Michael	Gallagher	Lea County	Scheduled retirement of Hobbs and Maddox facilities. Are these the only planned retirements. SPS response: no, there are several aging gas steam units planned for retirement. Currently planned retirements are: Tolk at end of 2028; soon to retire Plant X units 1 and 2 and Cunningham unit 1; Nichols units 1 and 2 will retire at end of 2028 and 2027, respectively; Cunningham unit 2, end of 2025; Plant X unit 4, end of 2027; Maddox unit 1, end of 2028; Nichols unit 3, end of 2030; and GAS CTs facilities - Maddox 2 and 3, end of 2025.
Michael	Kenney	SWEEP	energy efficiency
Mike	Espiritu	City of Roswell Econ Develop	Energy vital to existing and potential businesses; reliability, sustainability, affordability Will expiring wind and gas PPAs be renewed? SPS response: extension of PPAs would be considered in RFP processes.
Robert	Gomez	BLM Carlsbad office	not sure on topic; glad to participate
Roger	Gonzales	Consultant for HELP NM and	Economic vitality of working families within industry and impacted areas

		Chicanos Por La Causa	
Sarah	Austin	City of Portales	Availability of power for well service
Scott	Lopez	Kelly Cable of NM	Impact of RE mandates - regional growth in new resources beyond the available supply - feasible transition plan. SPS view on nuclear including SMRs?
Thomas	Singer	Western Environmental Law Center	Understanding modeling assumptions - oil and gas industrial demand, hydrogen for generation or storage - specifics on regional hydrogen hub project. How much of C&I customer base is oil and gas sector? Will hydrogen electric generation with the SPP be considered in this IRP?
deniz (unidentified)			I think FERC 841 requires battery storage to be treated as a supply source and paid LMP into an RTO wholesale market. SPS response: SPP treats battery storage as a supply source and paying at current LMP

Gridworks-provided Chat Log from Meeting

Chat 5/1512:42:22 From Deborah Shields - Gridworks to Mechele Edwards(Direct Message):
Hi Michelle - are you joining the SPS IRP Stakeholder meeting?
12:56:28 From Deborah Shields - Gridworks to Margie Tatro (Gridworks)(Direct Message):
Please ask everyone to put their organization in their name
13:00:42 From Anna to Everyone:
Byron Landfair City of Artesia
13:01:02 From City of Eunice to Everyone:
Shannon Cummins- City of Eunice
13:01:24 From Lance A. Pyle, Curry County Manager to Everyone:
Lance A. Pyle, Curry County Manager
13:01:39 From Roger A. to Everyone:
Roger Gonzales, President/CEO of the Gonzales Strategy Group and former President of HELP New Mexico, Inc.
13:01:44 From mike gallagher to Everyone:
Mike Gallagher, County Manager, Lea County NM
13:02:18 From Paula Chacon, City of Tucumcari to Everyone:
Paula Chacon - City of Tucumcari
13:02:20 From Roberta Gonzales to Everyone:
Roberta Gonzales, Eddy County Manager
13:02:39 From Louis Najar to Everyone:
Louis Najar, City Engineer, Roswell, NM   l.najar@roswell-nm.gov
13:04:03 From Mike Espiritu, Roswell-Chaves County EDC to Everyone:
Mike Espiritu, President/CEO, Roswell-Chaves County Economic Development Corporation Mike@ChavesCounty.net
13:05:09 From Jay Griffin to Deborah Shields - Gridworks(Direct Message):
Deborah - I don't see our presentation on the gallery.
13:05:54 From Corey Needham to Everyone:
Corey Needham, Assistant County Manager, Lea County NM
13:05:59 From c.cole to Everyone:
Chad Cole, City Manager, City of Roswell
13:06:16 From Luis Saenz - Xcel Energy to Everyone:
Luis Saenz, Xcel Energy -Case Specialist
13:06:53 From Matt White to Everyone:
Matt White, City Manager, City of Jal
13:06:57 From Craig Johnson to Everyone:
Craig Johnson, Office of Renewable Energy Director, NM State Land Office
13:07:52 From Jerry Valdez, NMDOT to Everyone:
Jerry Valdez, Executive Director NMDOT Office of Special Projects
13:08:05 From Deborah Shields - Gridworks to Jay Griffin(Direct Message):
https://gridworks.org/wp-content/uploads/2023/05/SPS-IRP-Stakeholder-Orientation-2023_05_05-.pptx.pdf
13:09:39 From Zoe Lees to Deborah Shields - Gridworks(Direct Message):
Is there supposed to be slides right now? I do not see any.
13:09:48 From Zoe Lees to Deborah Shields - Gridworks(Direct Message):
Linda doesn't see any either.
13:13:52 From City of Portales to Everyone:
Sarah Austin, City Manager, City of Portales
13:16:20 From cynthiamitchell to Everyone:
Slide 9: Is the SPS production peak MW value of 4,018 for TX and NM? If not, what is the breakdown. Thanks!
13:24:14 From cynthiamitchell to Everyone:

Looks like its slide 10 in the deck you are on; and, is just for NM
13:27:32 From Representative Jim Townsend to Everyone:
will this presentation be provided to all participating today
13:27:56 From Jay Griffin to Everyone:
Yes! It is on the Gridworks website.
13:28:25 From Jay Griffin to Everyone:
https://gridworks.org/wp-content/uploads/2023/05/May-16-SPS-Stakeholder-Meeting-Presentation-3-1.pdf
13:31:11 From Deborah Shields - Gridworks to Margie Tatro (Gridworks)(Direct Message):
Senator Gay Kernan of NM just joined
13:31:39 From Margie Tatro (Gridworks) to Deborah Shields - Gridworks(Direct Message):
excellent, thanks
13:36:50 From William Williams to Deborah Shields - Gridworks(Direct Message):
Why does the accredited capacity go down as years go by? Will you have less available power as years progress?
13:38:07 From cynthiamitchell to Everyone:
On slide 21, existing generation; do you also have storage?
13:38:33 From William Williams to Deborah Shields - Gridworks(Direct Message):
Never mind, I see that as you add renewables you have less dependability
13:41:25 From Deborah Shields - Gridworks to City of Eunice(Direct Message):
Hi Deborah here from Gridworks - may I have your name and email so I can follow up after the meeting- Thanks!
13:42:10 From Deborah Shields - Gridworks to City of Portales(Direct Message):
Hi Deborah here from Gridworks - may I have your name and email so I can follow up after the meeting- Thanks!
13:48:21 From Ben Elsey - Xcel Energy (SPS) to Everyone:
Reacted to "Yes! It is on the..." with ❤️
13:48:24 From Ben Elsey - Xcel Energy (SPS) to Everyone:
Removed a ❤️ from "Yes! It is on the..."
13:48:47 From Jay Griffin to Everyone:
Please use the chat for any questions
13:51:48 From Joan Brown to Everyone:
Does your analysis account for increasing temperatures and demands of climate change?
13:53:05 From Mike Espiritu, Roswell-Chaves County EDC to Everyone:
Slide 21indicates wind and solar capacity differences between Nameplate and Accredited. Please explain.
13:54:01 From Mike Espiritu, Roswell-Chaves County EDC to Everyone:
Slide 22, states expiring wind and gas PPAs. Will these be renewed? Impacts?
13:55:05 From Deborah Shields - Gridworks to Everyone:
Hello Everyone - Deborah Shields here from Gridworks - if you are not already on our list - please make sure I have your name, organization and email address so I can continue to update you on meeting summaries and updates - you can email me at dshields@gridworks.org or chat me here directly - Thank you!
13:56:11 From deniz to Everyone:

I think ferc-841 requires battery storage to be treated as supply source and paid LMP in an RTO wholesale market
13:56:48 From Robert to Everyone:
Robert Barber, Chairman Lincoln County Land and Natural Resource Advisory Committee, Representing Ira Pearson, County Manager
13:56:59 From mike gallagher to Everyone:
Is the Tolk facility the only generation that is scheduled for retirement?
13:57:12 From Representative Jim Townsend to Everyone:
A few questions; 1)THe load generation curve anticipates load, as we transition to more renewables is their another curve that depicts available power(predicted availability) to predicted load 2) price related what are prices doing? and why 3) what is the contract availability of power and what cost? 4) as you have increased the online capacity reserve to 15% what cost is incurred
13:57:26 From mike gallagher to Everyone:
will any expiring gas PPA
13:57:57 From mike gallagher to Everyone:
impact Maddox and cummingham and Hobbs generation?
14:00:33 From Lisa Tormoen Hickey to Deborah Shields - Gridworks(Direct Message):
Hi Deborah, please keep me on the invite list, for both SPS and PNM's IRP
14:00:43 From Representative Jim Townsend to Everyone:
Also a price curve, basing it on source what is the most competitive priced power supply and are you taking measures to provide the lowest priced power to your customers?
14:01:04 From Thomas Singer WELC (he/him) to Everyone:
I'm one of the homework readings there is a pie chart showing the share of sales among SPS's customer classes,. It shows NM large C&I 2022 sales at 60%. How much of this is oil and gas?
14:02:06 From Scott.Lopez to Everyone:
What is the SPS mid or long term view on Small Micro Reactors? Nuclear Energy, overall … thank you
14:02:39 From Joan Brown to Everyone:
Thank you very helpful
14:04:01 From Thomas Singer WELC (he/him) to Everyone:
Xcel is participating in the western hydrogen hub WISHH. Will hydrogen production in CO or NM or hydrogen electric generation with the SPP be considered in the SPS IRP?
14:05:00 From cynthiamitchell to Everyone:
Could for slide 19, the oral listing now of units scheduled for retirement, could we get that later in writing, when convenient? Thank you!
14:07:42 From Sam Cobb - Mayor of Hobbs to Everyone:
Thanks for the invite and the information. I have another meeting to attend.
14:07:54 From Scott.Lopez to Everyone:
I've heard legislated Renewable Mandates in the Western US are close to 100GW by 2050 … SPS is not the only one facing these enormous challenge … and energy demand will continue to grow
14:11:10 From Paula Chacon, City of Tucumcari to Everyone:
Sorry I am having to get off will attend on another date
14:11:58 From Joan Brown to Everyone:

How does energy efficiency, promoting energy efficiency in businesses, churches and households play into a plan for addressing energy needs and cost.

14:12:44 From David Millar to Everyone:

When you go out for all-source RFP, does Xcel also bid for self-build? Or are you completely relying on project developers to either contract with you or do a build-own-transfer?

14:13:04 From Athena Christodoulou to Everyone:

Is SPS considering even faster decarbonization than from the ETA? Climate change is happening faster than scientists modeled?

14:13:55 From Athena Christodoulou to Everyone:

Is SPS moving to loss of load events?

14:15:02 From Deborah Shields - Gridworks to Margie Tatro (Gridworks)(Direct Message):

Mechele Edwards (Guest) 2:13 PM

What concerns do I have? Closing/Retiring Tolk and Plant X. These will tremendously affect our community. I realize that employment may be offered elsewhere which is important. However, our community will lose population, other businesses will be highly impacted. The coal handling employees, our local restaurants, RV park, laundra-mat, city revenue, etc... Also negatively impacted will be our school system.

14:15:47 From Deborah Shields - Gridworks to Margie Tatro (Gridworks)(Direct Message):

Mechele Edwards (Guest) 2:15 PM

What do I want to explorefurther or need more information about? How likely is it that Tolk and Plant X will be utilized with alternative energy source plants? When will this be determined?

14:26:14 From rgomez to Everyone:

Yes I am

14:35:46 From Athena Christodoulou to Everyone:

Too bad climate change requires a world war II build out because we waited

14:42:46 From William Williams to Deborah Shields - Gridworks(Direct Message):

Thank you for the invitation and inclusion into these planning meetings. I will join you next time.

14:54:15 From Kayley Shoup to Everyone:

Have to run to another meeting. Thank you!

15:16:05 From David Millar to Everyone:

Watch out for UFOs

15:16:26 From EDC of Lea County to Everyone:

Please consider Hobbs for August.

15:20:48 From City of Portales to Everyone:

Thank you.

May 16, 2023

Link to recorded meeting:

https://youtu.be/HjjedkOi99E

May 16, 2023 Read Ahead Materials

On Following Pages

Welcome!

Stakeholder Engagement Orientation

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

Tuesday, May 16, 2023

2:00 – 4:30 PM MDT

Purpose of Today's Meeting

- Our primary objective is to create a dialogue among stakeholders to inform the Integrated Resource Plan.
- Discussion topics include:
  - Context for the facilitated stakeholder process
  - Overview of SPS system
  - Stakeholder introductions and areas of interest
  - Identification of missing voices
  - Feedback on proposed plan for engagement
  - Requests of stakeholders
  - Next meeting/workshop

Note: this meeting is being recorded and will be available as public information. The link to the recording will be included in the meeting summary.

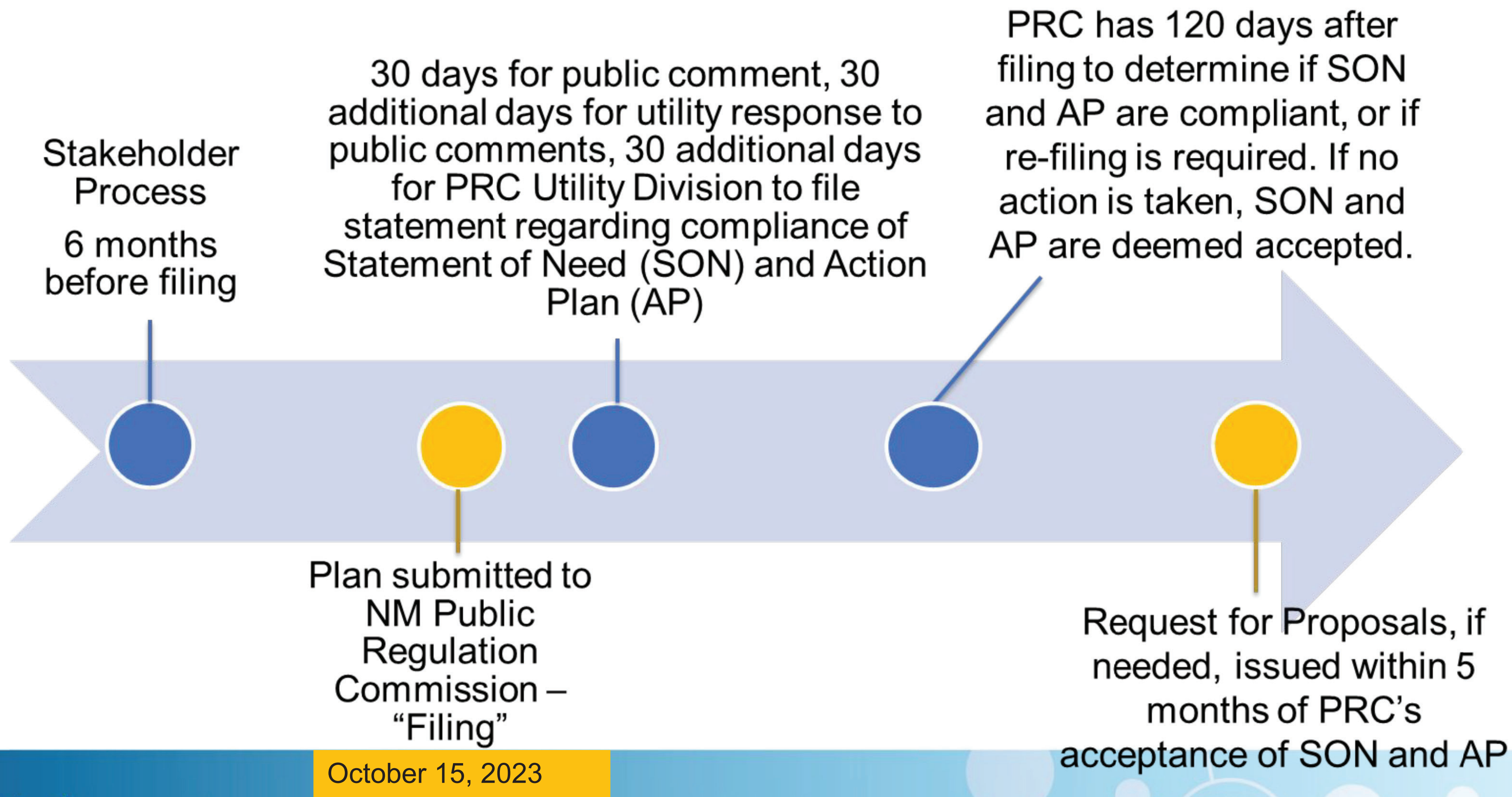
Key ZOOM Features for our Conversation

- Mute (microphone) - please mute when not speaking
- Video button - controls the camera focused on you; please start video when you are speaking
- Reactions button includes the option to raise or lower your hand
- Chat window allows you to offer ideas to entire group or respond to specific questions.

The Facilitated Stakeholder Process is Now Required for Integrated Resource Plans

- November 2022, New Mexico Public Regulation Commission put new procedures in place (Case 21-00128-UT).
- Commission-appointed facilitator enables the stakeholder conversations and produces a report on how this process worked.
- Specific stakeholder deliverables are the Statement of Need and the Action Plan.
- Process required to commence by April 15 for SPS's filing on Oct. 15, 2023.

Sequence of Steps in the Integrated Resource Plan Process



GRIDWORKS' Team Members for New Mexico Stakeholder Engagement

Deborah Shields
Project Administrator

Jay Griffin
Facilitator

Margie Tatro
Facilitator

Gridworks convenes, educates, and empowers stakeholders working to decarbonize our economy.

www.gridworks.org
GRIDWORKS is a non-profit organization.

Amanda Ormond
Strategic Advisor

Matthew Tisdale
Strategic Advisor & Facilitator

GRIDWORKS

SPS IRP Team and System Overview

- Introduce SPS team
- SPS System Overview
- Q&A Session
  - Grounding: What stands out for you?
  - Reflective: What concerns do you have?
  - Interpretive and Decisional: What do I want to explore further or need more information about?
  - Be thinking about: “My top interest as we move forward is …”

Southwestern Public Service

Electric System Overview

GRIDWORKS

Stakeholder Introductions

Organizations in attendance (Roll-call format):
Please come off mute, enable your camera (start video) and share your

- Name
- The topic related to the 20-year plan that you are most interested in

Organizations or people not yet introduced.

Organizations/people who cannot attend today.

Are there organizations not here today who you feel should be in these conversations? (please add suggestions to the “chat”)

You are Invited to Participate as Stakeholders

- We request that stakeholders:
  - **Provide actionable feedback regarding Statement of Need, Action Plan, and IRP Drafts.**
  - Attend as many meetings as possible. Review meeting materials in advance. Review summaries from meetings, especially if a meeting is missed.
  - Work offline in working groups, if interested.
  - Consider views and input of other stakeholders.
  - Share experience and expertise, perhaps presenting to the group, as needed.

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Stakeholder Engagement Includes Three Phases

May - June	July – August	September - October
May 16: 2 – 4:30 PM June 1: 2 - 4 PM **June 13 & 14: 12–5 & 9–3 workshop**	July 6: 1 – 5 PM **August 1 & 2: 12-5 & 9-3 workshop** August 29: 2 – 3:30 PM	Sept. 21: 1 – 5 PM Oct. 26: 2 – 3:30 PM
1: Grounding and Statement of Need, Prepare for Modeling	2: Model Runs and Produce Action Plans	3: IRP Reviews and Process Feedback

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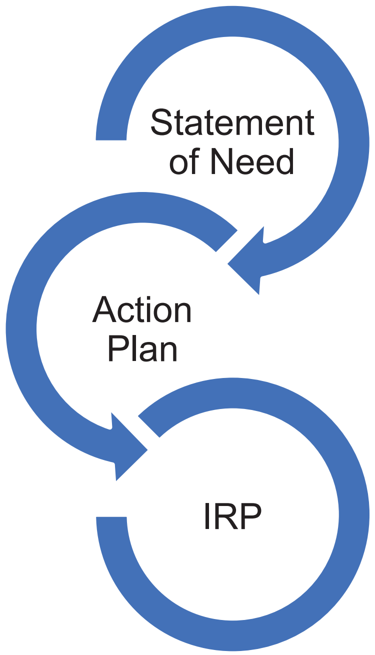
Proposed Next Steps

- June 1, 2:00 – 4:00 PM, Zoom
  - Build a foundation of shared knowledge through electric system tutorials
  - Include missing voices, if any
- June 13-14, In-person attendance encouraged, Zoom participation also available, place TBD
  - Continue building foundation of knowledge
  - Statement of need
  - Modeling scenarios and parameters
  - Other topics of specific interest



Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838

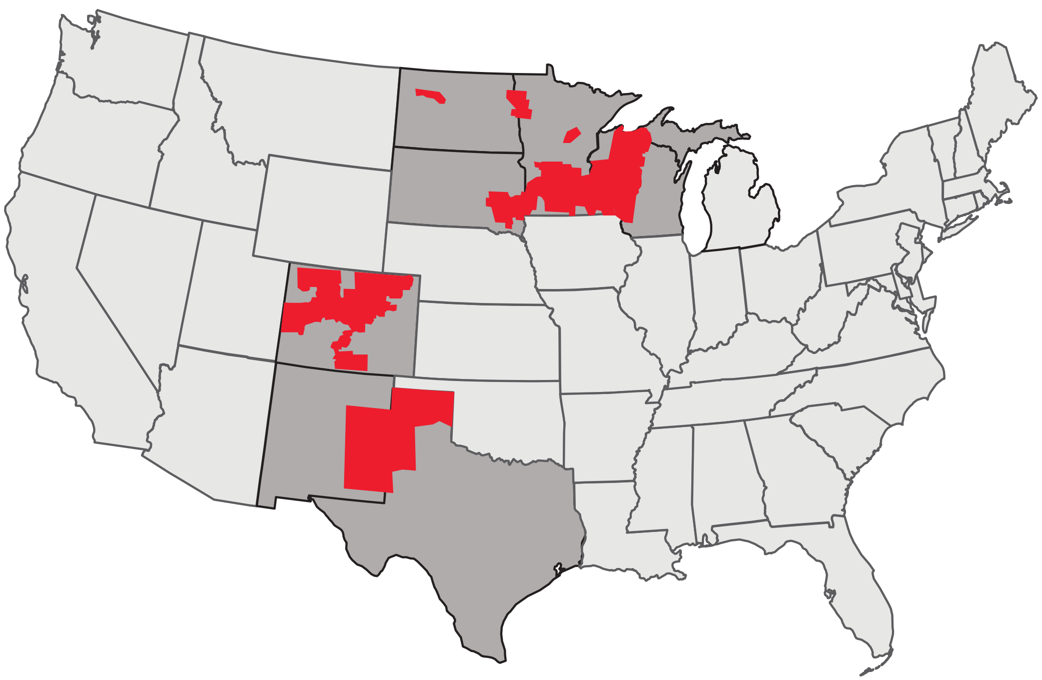
GRIDWORKS

Materials for this and future meetings available at: [New Mexico Energy Planning – Gridworks](https://gridworks.org/initiatives/new-mexico-energy-planning/)
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

BUILDING NEW MEXICO'S ENERGY FUTURE

CLEAN, SAFE, RELIABLE

Xcel Energy



Serving eight states

3.7 million electricity customers

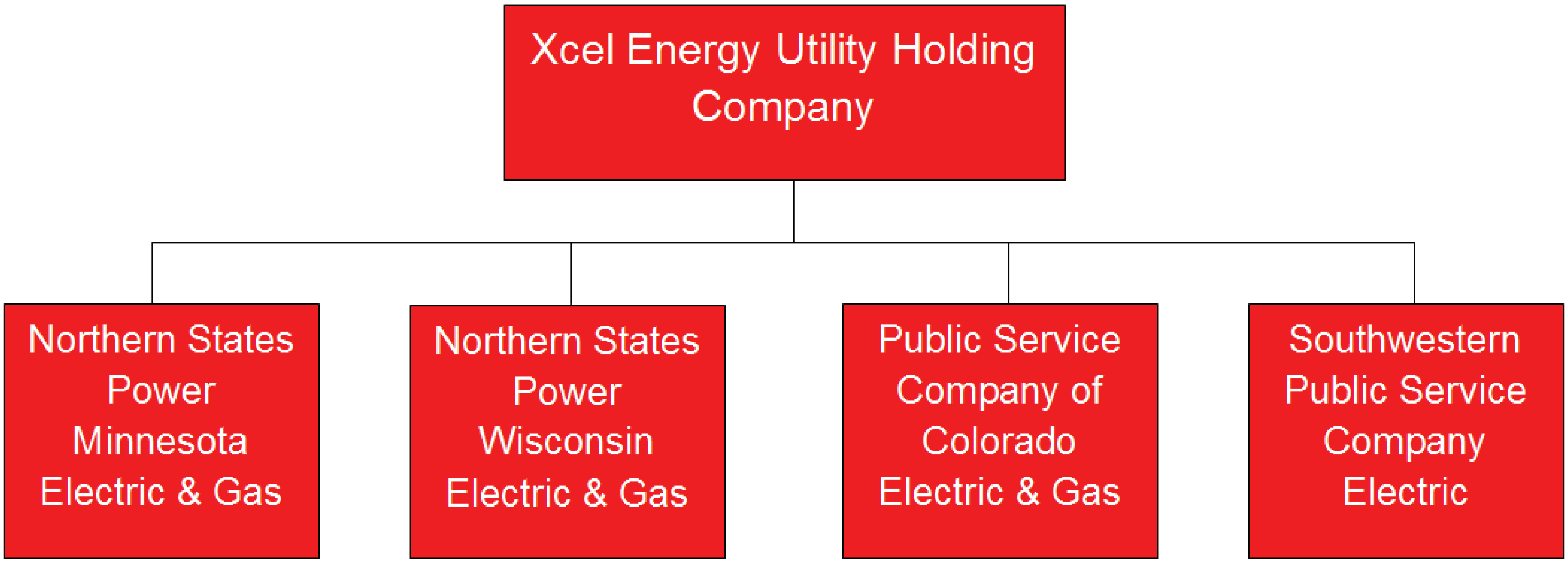
2.1 million natural gas customers

Nationally recognized leader:

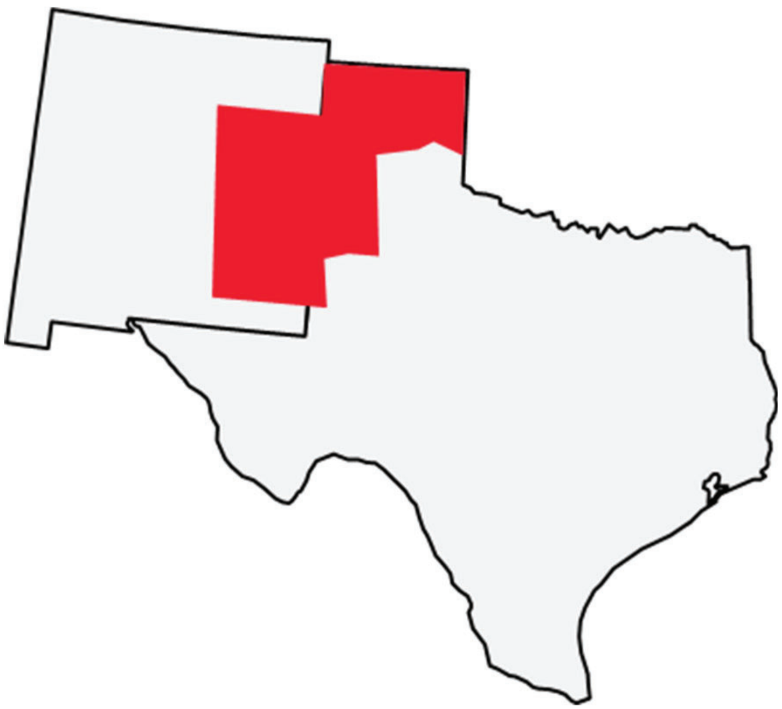
- Wind energy
- Energy efficiency
- Carbon emissions reductions
- Innovative technology
- Storm restoration

Data based on 2021 Sustainability Report. To view full report: xcelenergy.com/sustainability.

Corporate Structure



Powering New Mexico



126,000

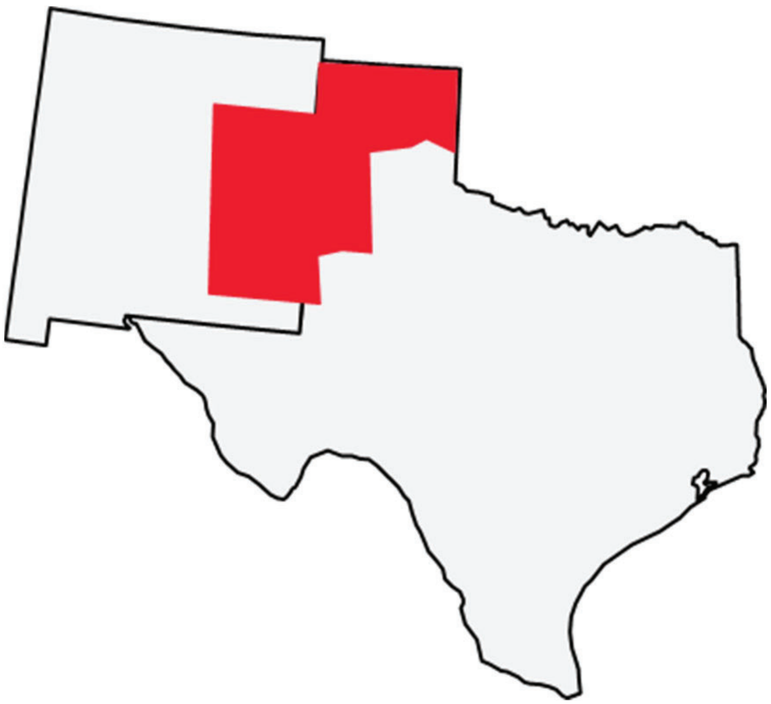
Electric Customers

99.9%

Electric Reliability

Data based on 2021 Sustainability Report. To view full report: xcelenergy.com/sustainability.

Texas Customers



276,000

Electric Customers

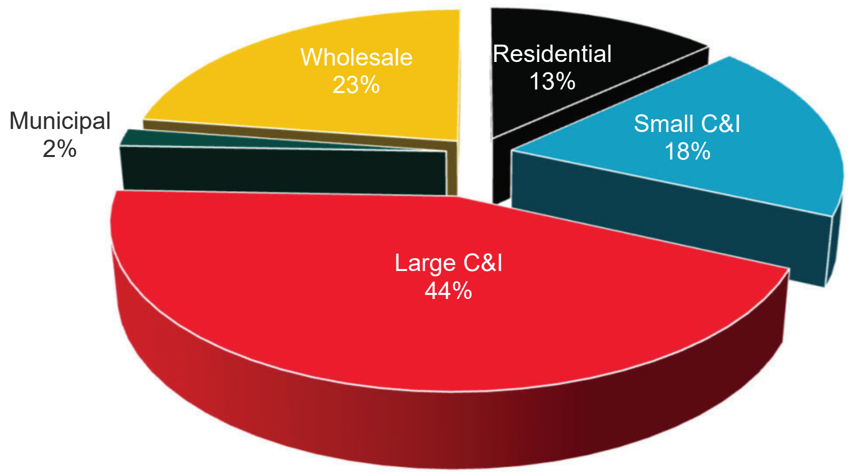
99.9%

Electric Reliability

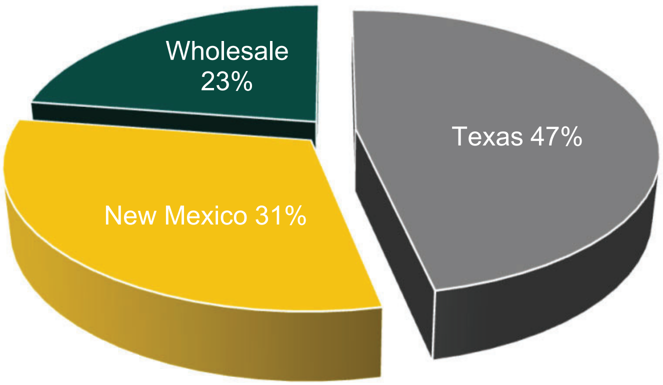
Data based on 2021 Sustainability Report. To view full report: xcelenergy.com/sustainability.

SPS Customers

Sales by Class



Jurisdictional Sales Split

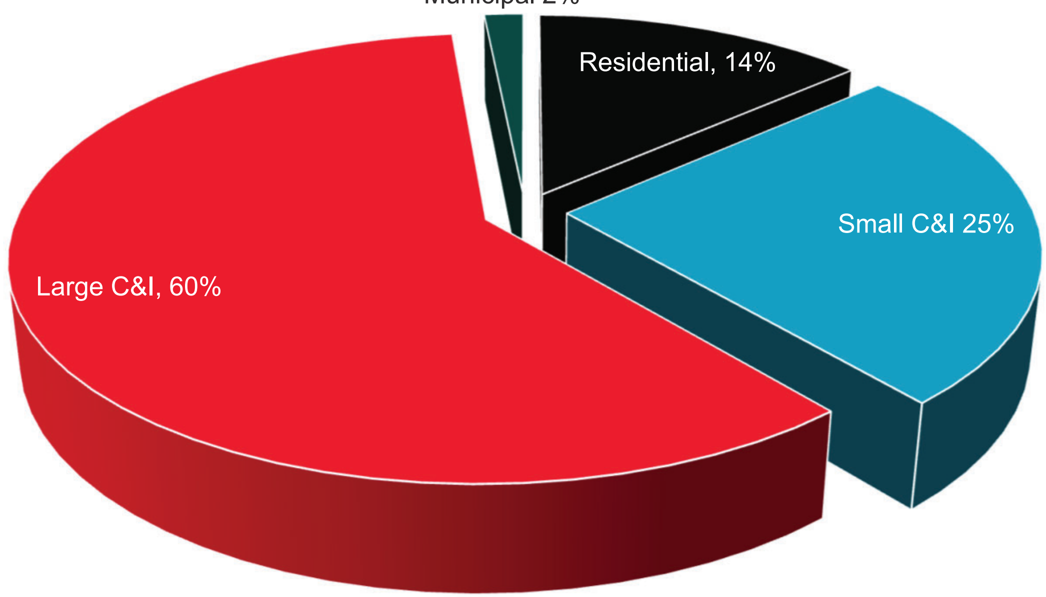


* SPS operates its production and transmission system as an integrated whole

Note: Data Represents Calendar 2022.

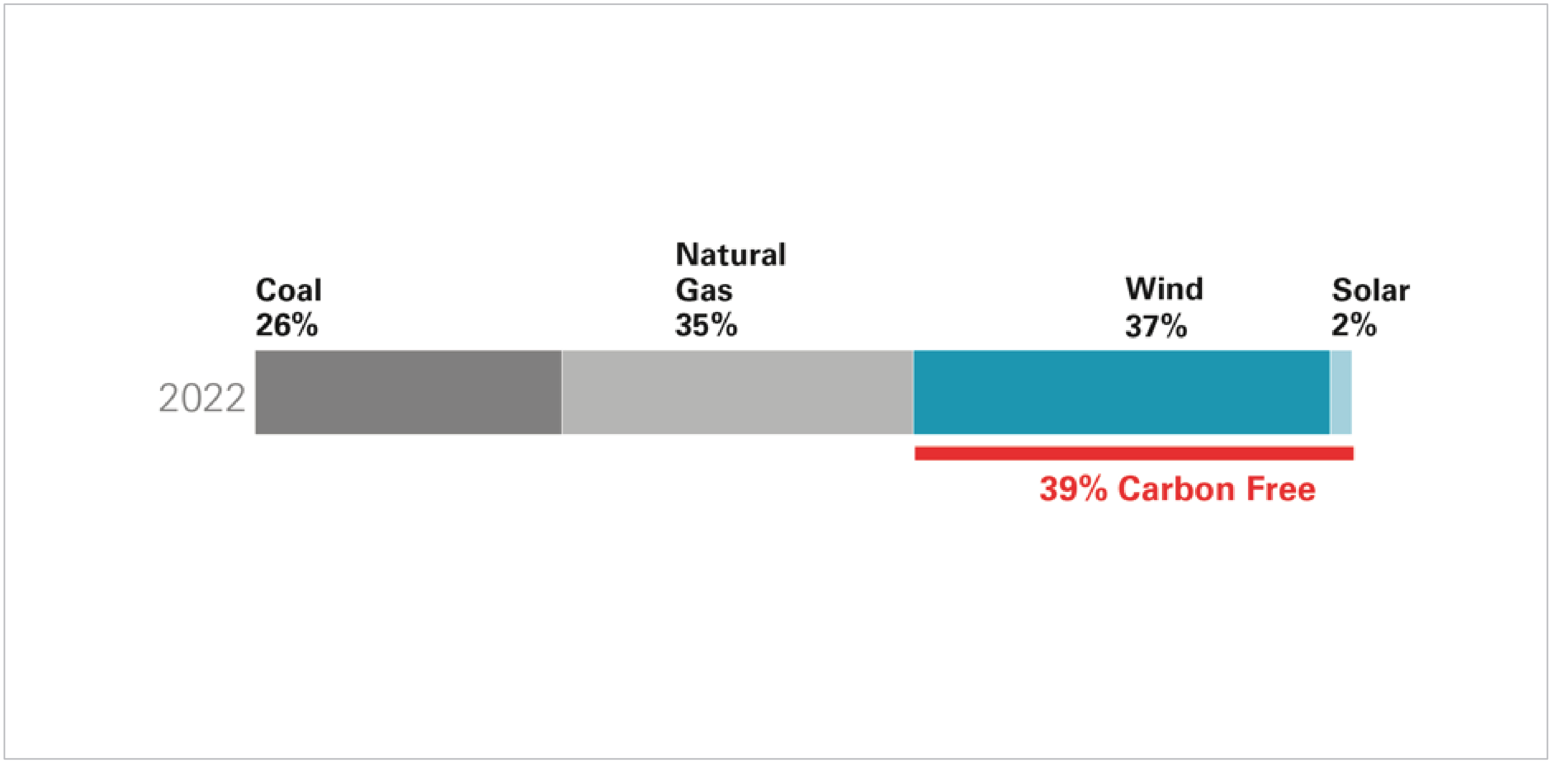
New Mexico Customers

Sales by Class



Note: Data Represents Calendar 2022.

2022 Energy Mix



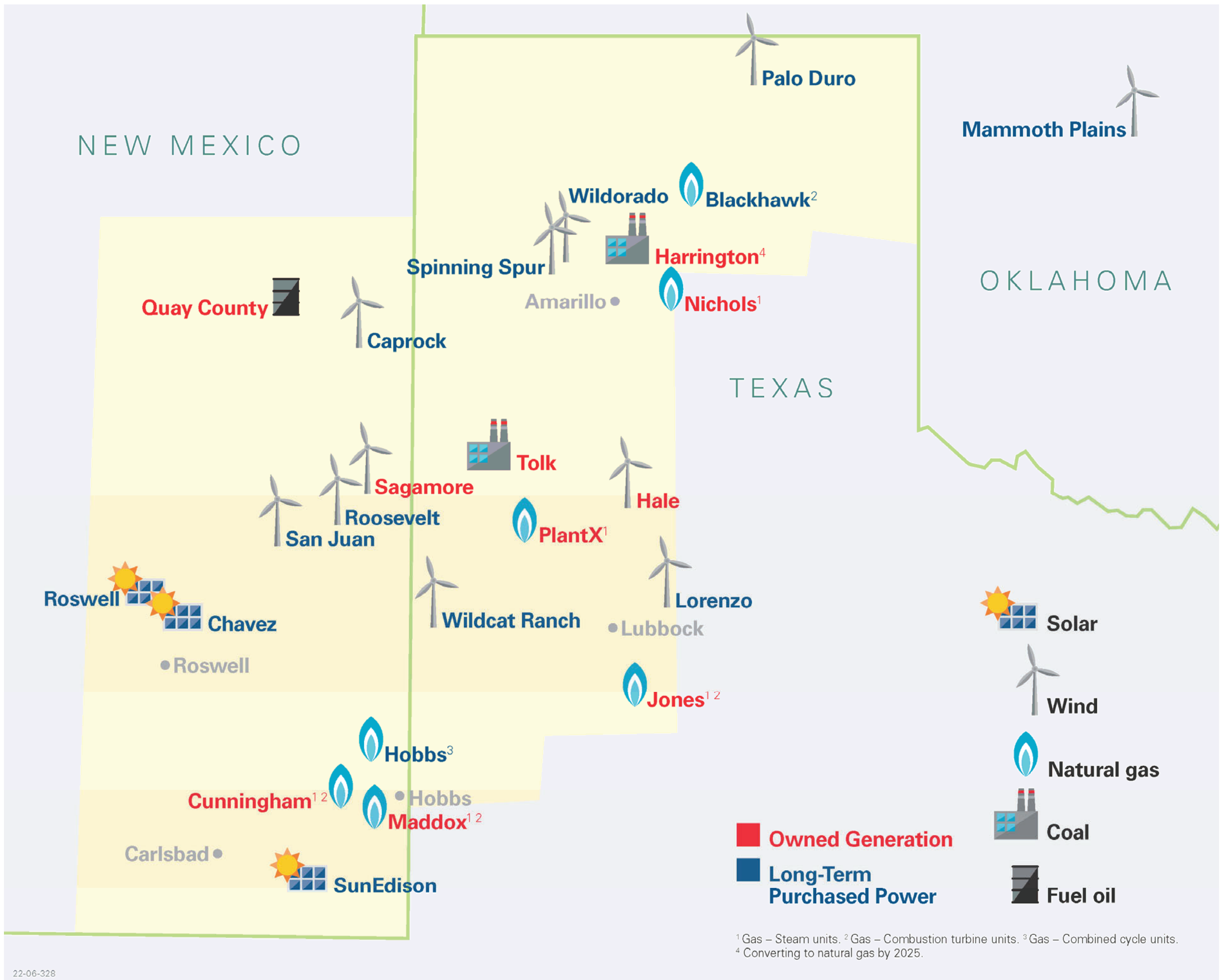
* SPS operates its production and transmission system as an integrated whole

NM IOU Comparison

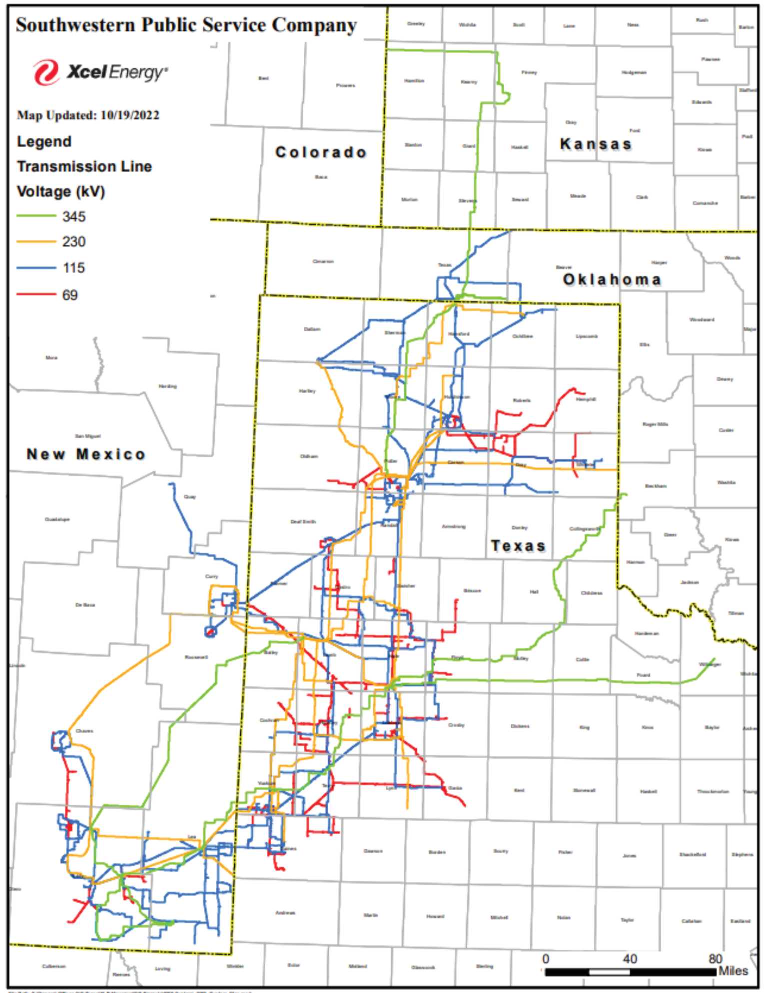
2021 Information	SPS	EPE	PNM
Customer Sales Mix (2021)*			
Residential	15%	45%	36%
Commercial	27%	50%	41%
Industrial	59%	4%	23%
Production Peak (2021)**	4,018 MW	2,051 MW	1,968 MW

*Source – NMPRC Website
**Source - FERC Form 1

SPS Generation Resource Map



SPS Service Area Map



Powering the New Mexico Economy

$51 million spent with local suppliers

256 Xcel Energy jobs in 2021

$34 million spent with diverse suppliers

$10.7 million in property taxes

2021 Data

Additional Information & Resources
(click to open document)

Texas-New Mexico Info Sheet

Our Energy Future Brochure

Oct 2022 Tolk News Release

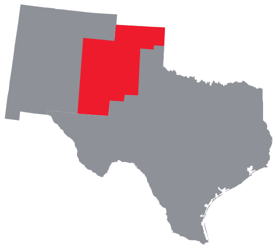
Additional Information & Resources

- Infographic - How Solar Power Works
  20-02-410_Energy_Generating_Sources_Infographic_P04 (xcelenergy.com)
- Infographic - How Wind Power Works
  20-02-410_Energy_Generating_Sources_Infographic_P04 (xcelenergy.com)
- Informational Video - How Transmission Works
  https://www.youtube.com/watch?v=HiOu3pwk7Lo&feature=youtu.be
- SPS - NM Sagamore Wind Facility
  20-12-403 SagamoreWindFactSheet.pdf (xcelenergy.com)
  Sagamore Wind Farm - YouTube
- Xcel Energy - Generation Portfolio Information
  Solar | Energy Portfolio | Xcel Energy
  Hydro | Energy Portfolio | Xcel Energy
  Natural Gas | Energy Portfolio | Xcel Energy
  Nuclear | Energy Portfolio | Xcel Energy
  Biomass | Energy Portfolio | Xcel Energy

INFORMATION SHEET

POWERING TEXAS AND NEW MEXICO

CLEAN, SAFE, RELIABLE



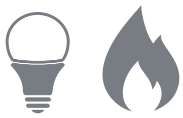
CUSTOMERS

402,100 electric customers

276,300 in Texas

125,800 in New Mexico

99.9% electric reliability



ENERGY EFFICIENCY PROGRAMS

Helping you save and manage your energy with conservation and rebate programs

Customers saved
77.8 gigawatt hours of electricity—that's enough to power about 9,500 homes

LOW PRICES

Electric bills below national average

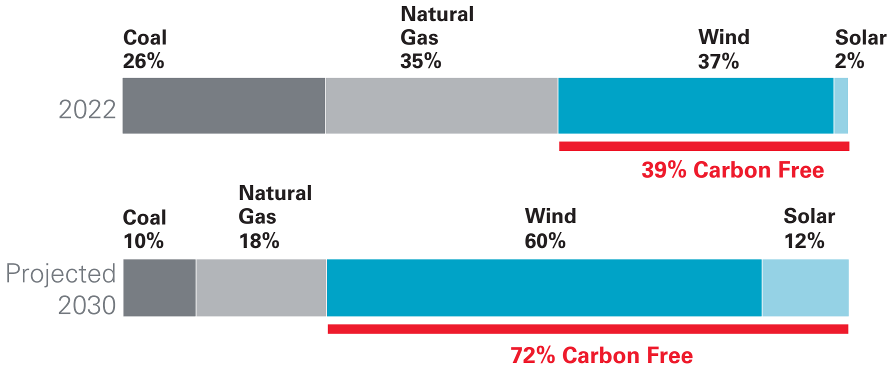
PEOPLE FIRST

$10.2 million in energy and bill payment assistance to nearly 14,400 individuals and families.

Added an estimated 897 jobs through economic development projects totaling $90 million in capital investments.

Select data points are from 2021 Sustainability Report. To view full report: xcelenergy.com/sustainability.

Diversified energy mix



- We've saved billions of gallons of fresh water over nearly four decades by pioneering the use of treated municipal effluent to cool the Nichols-Harrington and Jones generating plants in Texas — more than enough water to fill Lake Meredith.
- By 2030, we'll cut carbon emissions 80% from the electricity we provide to Texas and New Mexico customers, compared to 2005, on our way to achieving our vision to provide 100% carbon-free electricity by 2050.
- We work to manage our costs while investing for the future. Hale and Sagamore wind farms saved our retail customers over $54 million in fuel costs in 2021, with over $31 million of fuel savings during Winter Storm Uri alone. And the savings generated by our wind will continue to benefit customers in the coming years.

Powering the economy

We've invested in our system to improve reliability to all our customers. These energy grid upgrades also set the stage for job creation by delivering the electricity new business needs to grow and to power the region's economic engine.

Jobs 1,711

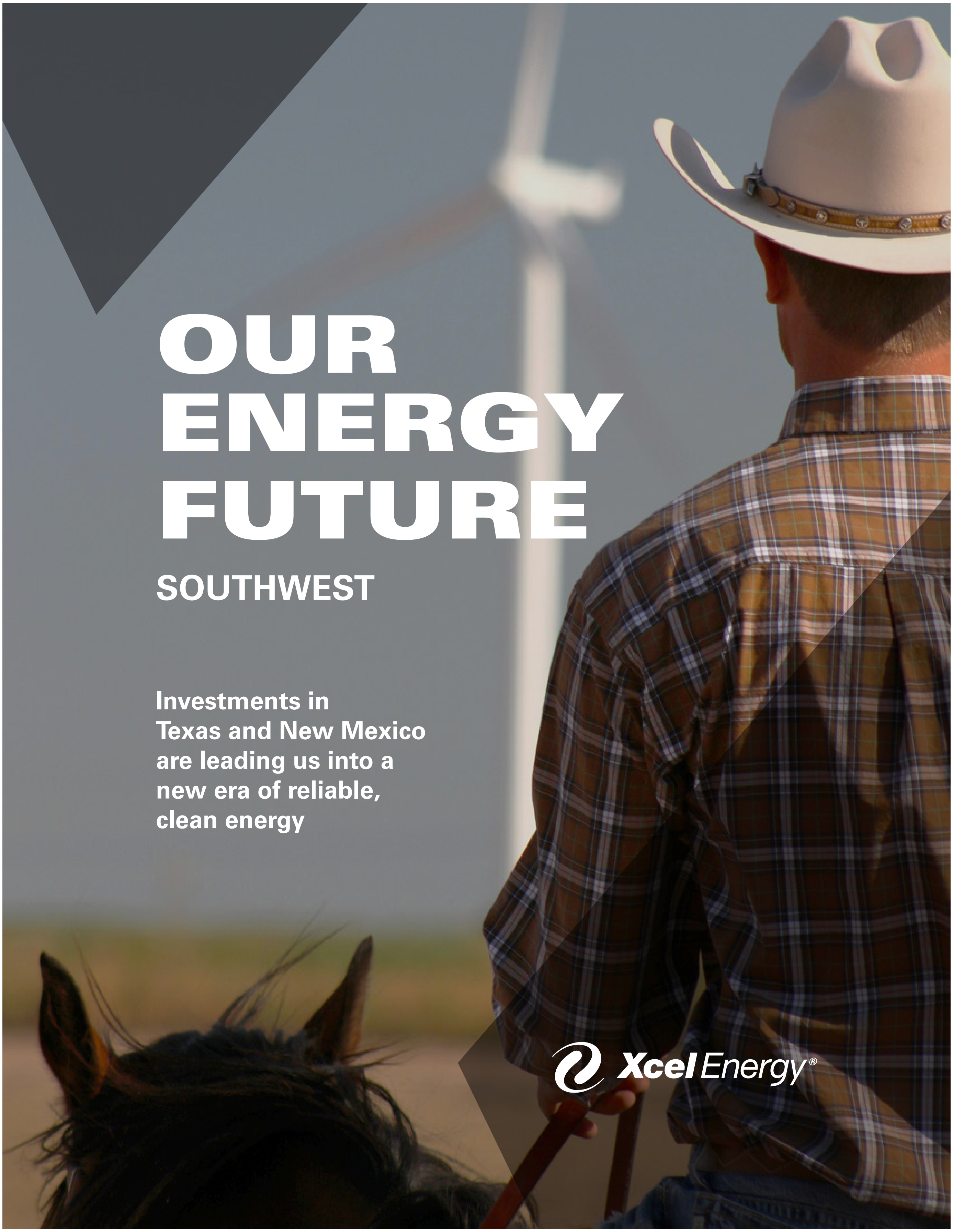
Property Taxes Paid	$62 million
Franchise Fees	$22.3 million
Spending with local suppliers	$744.7 million

Giving back to our communities

We're committed to the communities we serve because we live here too. Our employees are deeply engaged in the community, and each year we contribute thousands of dollars to keep our neighborhoods strong.

Employee Volunteerism	9,100 hours 7,800 volunteers 119 nonprofits served
Community Investments*	$1.3 million

*Includes focus area grants, United Way, matching gifts, disaster relief and other contributions.



OUR ENERGY FUTURE

SOUTHWEST

Investments in Texas and New Mexico are leading us into a new era of reliable, clean energy

BUILDING A BRIGHT FUTURE

Technology is advancing in every area of our lives, and we're using it to help bring you cleaner, safer, more reliable energy. The next generation of our energy grid — the advanced grid — will help us serve you better.

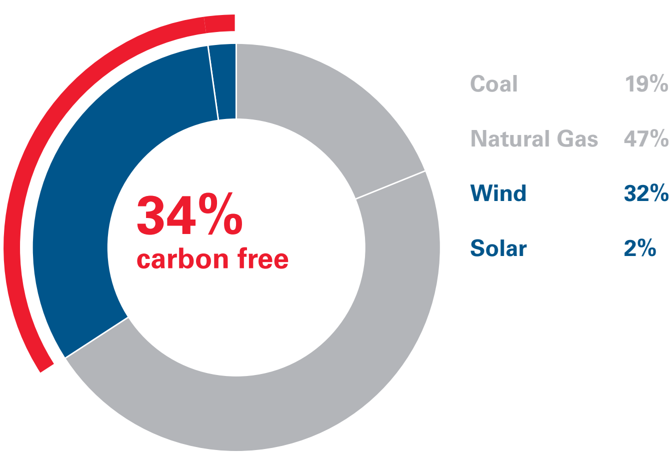
New tools, including smart meters, will deliver personalized insights to help you better understand how you use electricity, so you can take steps to uncover potential savings and manage your energy budget at your home or business.

New technologies and advanced products will also allow us to reroute and restore your power more quickly, improving overall reliability.

And when it comes to growing threats, whether severe weather or defending against cyber-attacks, we're deploying smarter, more resilient systems.

We're building a future today that delivers security, reliability and control to our customers.

2020 Southwest Energy Mix



A NEW ERA OF CLEAN ENERGY

Sustainability is engrained in everything we do. It's fundamental to our strategic priorities and decision making. And it's an investment in continuing affordability as well as the health of our communities.

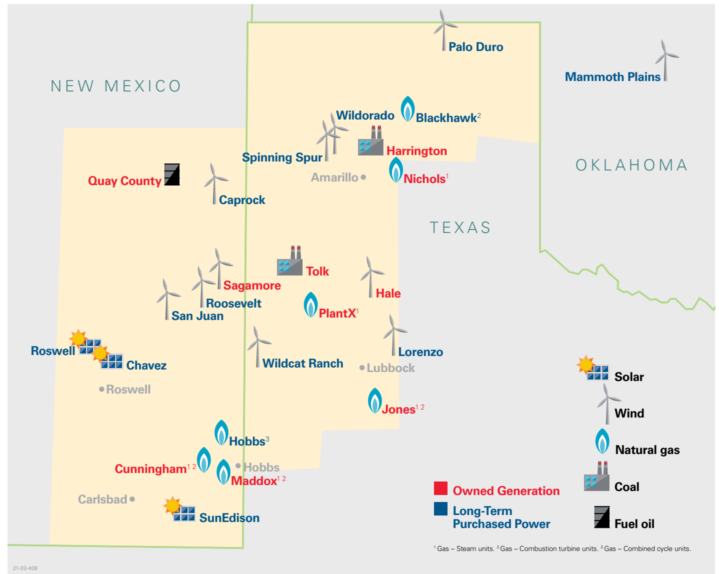
Our energy mix — the source of electricity used in Southwest homes and businesses — is evolving. In 2020:

- We used fewer fossil fuels to produce electricity: Generation fueled by coal and natural gas declined about 11%.
- 34% of the electricity delivered to customers was carbon free: It's not uncommon to have entire days when abundant wind energy supplies over 50% of the megawatt hours serving our Southwest customers.
- We reduced carbon emissions about 55% from 2005 levels in the electricity delivered to customers.

LEADING THE WAY

We'll continue to push the envelope as we transition away from coal, advance technology to economically and reliably integrate abundant wind and solar resources, and build out systems to deliver low-cost, increasingly clean electricity:

- We saved more than 630,000 tons of coal from 2019 to 2020 — that means at least 6,000 fewer railcars of coal burned.
- Harrington Generating Station, located northeast of Amarillo, will be converted from coal to natural gas by 2025, helping further improve emissions.
- We're saving billions of gallons of precious groundwater by using recycled water or treated municipal effluent at the coal-fueled Harrington plant and the natural gas-fueled Jones and Nichols plants: Our company-wide goal is to reduce water consumption from the electricity we provide customers 70% by 2030 from 2005 levels.
- With its shift to part-time operation, Tolk Station (near Earth, Texas) is already saving customers hundreds of millions of dollars in expenses related to acquiring new water resources in addition to maintenance, fuel and environmental costs. Tolk Station will be fully retired in 2032.



ESSENTIAL INVESTMENTS

Xcel Energy's significant investments in clean, low-cost power generation, new power lines and new and expanded substations are part of the company's wider initiative to strengthen and modernize the grid to boost economic development, job growth and quality of life in Texas and New Mexico

We're locally invested:

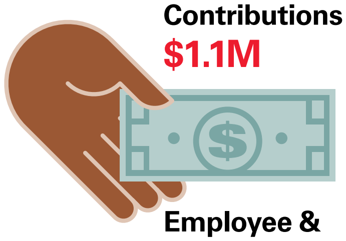
- In making our service area an attractive option for businesses: We deliver certified sites with top-quartile reliability, competitive pricing, energy efficiency incentives and an industry-leading renewable energy portfolio.
- In local suppliers and the jobs they support: We spent over $480 million last year with Texas and New Mexico suppliers. The portion of that spending focused on small and diverse suppliers resulted in nearly 2,290 jobs with incomes reaching close to $127 million.
- In a decade-long pursuit to power the regional economy: We've invested $3 billion in transmission over the past 10 years and, since 2019, $1.7 billion in reliability, capacity and wind energy.

xcelenergy.com/OurEnergyFutureSW

2020 GIVING & VOLUNTEERISM

TEXAS, NEW MEXICO

Whether in good times or through adversity, we're committed to bettering the communities we serve through volunteerism, charitable giving and working with nonprofits.



Corporate Contributions
$1.1M

Employee & Retiree Donations
$340K

Matching Gifts & United Way
$690K

Focus Area Grants & Sponsorships
$470K

COVID-19 Relief
$150K

Racial Equity & Social Justice Grants
$30K

6K volunteer hours | **200** volunteers | **50** nonprofits served

Focus Area Grants & Sponsorships

$290K
education

$175K
economic sustainability

$250
environment

$4K
access to the arts

Find more online at **xcelenergy.com/OurEnergyFutureSW**

Xcel Energy®

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Xcel Energy proposes to exit coal by 2030

Company plans earlier coal plant retirement, accelerating its nation-leading clean energy transition

MINNEAPOLIS (Oct. 31, 2022) — Xcel Energy announced today a proposal to advance the retirement of coal operations at Tolk Generating Station in Texas to 2028, more than four years earlier than planned. With this earlier retirement, along with accelerated coal plant retirements in other states, the company will exit the use of coal by the end of 2030 when the Comanche 3 coal unit in Colorado retires.

The company is leading the nation's clean energy transition as it reduces carbon emissions 80% by 2030 for electric customers, with a vision to achieve 100% carbon-free electricity by 2050. Retiring coal generation while continuing to add reliable and affordable clean energy sources are key to Xcel Energy's strategy in the eight states it serves.

"As the first energy provider in the nation to set ambitious goals for addressing all the ways our customers use energy – electricity, heating and transportation – we are always striving to provide our customers cleaner energy resources, while saving them money," said Bob Frenzel, chairman, president and CEO of Xcel Energy. "Advancing the retirement of coal operations at Tolk Station demonstrates our commitment to our clean energy strategy, while ensuring our customers and communities have reliable, affordable and safe service."

In addition to accelerating the clean energy transition, retiring coal at Tolk Station earlier than planned is estimated to save Xcel Energy's customers in Texas and New Mexico more than $70 million. With the proposed earlier retirement date, Tolk will continue flexible operations to optimize generation when natural gas prices are high while managing limited remaining water resources. Additionally, changes in federal laws are making the replacement of coal generation with cleaner energy sources more cost-effective.

In November, Xcel Energy will propose to New Mexico regulators to move Tolk's retirement date, previously set in the 2032-34 timeframe, to 2028. The proposal will go before Texas regulators in February 2023. Xcel Energy plans to continue operations of currently installed synchronous condensers at Tolk after 2028 as they continue to help ensure the stability of the regional grid.

Throughout its clean energy transition, Xcel Energy has focused on affordability and reliability for its customers, while working with employees and communities that host its power plants to ensure a smooth transition. Through future regulatory processes, the company expects a diverse mix of replacement generation, including wind and solar, to be developed near Tolk after coal operations are retired.

"For more than forty years, the dedicated employees at Tolk Generating Station have provided reliable and safe service to our Texas and New Mexico customers and communities," said Adrian Rodriguez, president, Xcel Energy New Mexico, Texas. "While we maximize replacement generation in the region, we're also committed to transition our employees into new roles as needed, something we've done successfully at other Xcel Energy plants."

Tolk Station, located roughly 70 miles northwest of Lubbock, includes two coal-fueled steam units with a combined capacity of 1,067 megawatts.

###

About Xcel Energy

Xcel Energy (NASDAQ: XEL) provides the energy that powers millions of homes and businesses across eight Western and Midwestern states. Headquartered in Minneapolis, the company is an industry leader in responsibly reducing carbon emissions and producing and delivering clean energy solutions from a variety of renewable sources at competitive prices. For more information, visit xcelenergy.com or follow us on Twitter and Facebook.

June 1, 2023 Stakeholder Meeting

GRIDWORKS

Meeting #2

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

June 1, 2023

SUMMARY

Approximately 68 people from 40 different organizations attended a meeting focused on building a knowledge base for stakeholders to participate in discussions pertaining to Xcel Energy/SPS's Integrated Resource Plan.

A recording of the meeting is available at: https://youtu.be/wGb4vuYYvWE

All meeting materials are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

Documents found at the above link include the meeting agenda, this meeting summary, a recording of the meeting, and the following materials:

- **Slide Deck – Gridworks/SPS IRP 6/1/23 Stakeholder Engagement Meeting**
- **Slide Deck – Xcel Energy/SPS Statement of Need & Electric System Requirements**

Also posted at the above site is a list of stakeholder interests.

New participants to this process introduced themselves and offered a topic that is most important to them related to the IRP. Opportunities for stakeholders to participate in working groups were briefly described. The group was asked to identify missing voices who should be invited to participate in this process.

The SPS team presented a summary of the needs and system requirements as well as an overview of available resources. Questions from stakeholders were written in the chat log then stated verbally. Verbal responses by SPS representatives were provided. Questions included topic such as: load predictions; the role of demand response, energy efficiency, and distributed energy resources; specific resource options (renewable natural gas, reciprocating internal combustion engines, hydrogen as a fuel, and long-term energy storage); the transition strategy for a carbon free electricity future; and the relationship between short term actions (and commercially available technology) with long term goals.

Participants were given time to complete an on-line meeting survey.

GRIDWORKS

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback during or after each meeting.

NEXT STEPS: The next meeting of the group, Meeting #3, is scheduled for June 13 from 12 noon – 5 PM, continuing June 14 from 9 AM – 3 PM at the Roswell, Convention and Civic Center. RSVPS are requested to INFO@gridworks.org by Thursday, June 8. Stakeholders are STRONGLY ENCOURAGED to attend this event in person, though a virtual meeting connection will also be available. Details will be forthcoming via email.

Questions, concerns, and suggestions are welcome through info@gridworks.org or by contacting Margie Tatro at mtatro@gridworks.org, 505-205-0838.

Please Access and Complete the Survey Now

…by either:

Scanning the QR Code to the right

OR

Visiting this link: bit.ly/SPS-IRP-Feedback

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

GRIDWORKS


Xcel Energy®
STATEMENT OF NEED &
ELECTRIC SYSTEM REQUIREMENTS
Ben Elsey | Director, Resource Planning & Bidding
© 2023 Xcel Energy
1

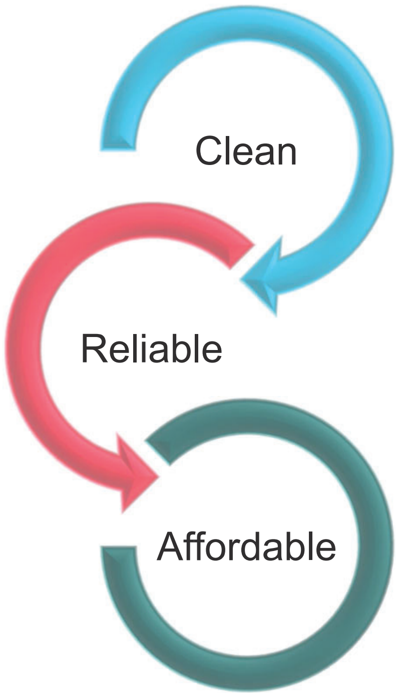
Statement of Need

17.7.3.10 STATEMENT OF NEED:

A. The statement of need is a description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies.

B. The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

Electric System Requirements - Tenets



SPS is committed to providing clean and reliable energy, while keeping bills affordable for customers

Resiliency is an equally important metric that, at times, can be challenging to quantify.

SPS takes a qualitative approach when evaluating the results of resource planning analyses to determine resiliency benefits and other factors outside the scope of economic modeling

Reliability versus Resilience

Reliability is the ability to maintain power delivery to customers in the face of routine uncertainty in operating conditions, as in cases of fluctuating load and generation, fuel availability, and outage of assets under normal operating conditions. Reliability events typically result in shorter outage durations (seconds to hours) and smaller areas of impact (facilities, campuses, or neighborhoods).

Resilience focuses on preparing for, absorbing, adapting to, and recovering from low-probability, high-consequence disruptive events. Resilience events typically result in longer outage durations (days to months) and larger geographic areas of impact (states, regions, or islands). As a result, they could lead to cascading impacts in other critical infrastructures and parts of the economy.

Source: NREL

Determining the cost of resource portfolios

- SPS uses the EnCompass production cost model to determine the most cost-effective portfolio(s) of resources to meet projected future energy demand
- Resource Portfolios must meet predetermined reliability and clean energy requirements (e.g., planning reserve margin requirements)
- System costs are calculated on a present value revenue requirement basis (“PVRR”)
- Results are only as accurate as the modeling inputs - critical inputs are often subject to sensitivity analysis (e.g., load forecasts, gas prices)
- Qualitative factors, often outside the scope of the model, should also be considered
- The lowest cost portfolio of resources *may not* be the optimal portfolio

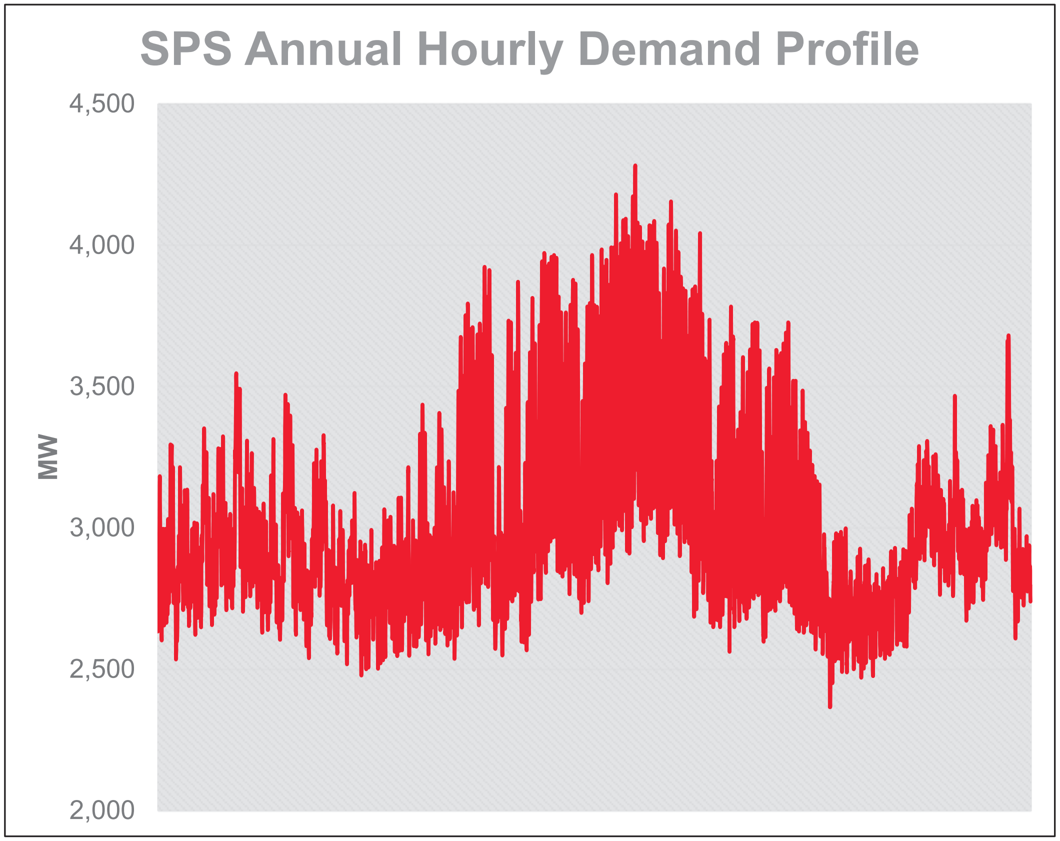
Modeling System Reliability

Demand:

Resource portfolios must meet the 15% planning reserve margin requirement in *all* months.

Energy:

EnCompass will typically add either additional resources and/or purchase energy from the market to ensure energy adequacy in all hours. This is achieved by setting a high emergency energy cost.



Modeling Demand: Resource Capacity Accreditation

The Southwest Power Pool is responsible for determining the capacity accreditation for each resource type. The following capacity accreditation methodology is expected to be implemented before the action period:

Performance Based Accreditation

Tested capacity less 5-year average forced outage rate

- Thermal Generation
  - Combustion Turbine Generators
  - Combined Cycle Generation

Effective Load Carrying Capability

Annual reliability studies performed by the Southwest Power Pool to determine resources contribution to system reliability

- Solar
- Wind
- Battery Energy Storage

The Southwest Power Pool incorporate a sum of the parts approach to hybrid resources. For example, a solar + wind hybrid project would receive the accredited capacity of the solar plus the wind generation (subject to point of injection capability)

ELCC Example

At 1,000 MW of Solar across the entire SPP footprint accreditation for Summer is 72% (e.g., 100 MW Solar facility would count 72 MW towards SPS capacity need

Declines as the penetration of solar generation increases

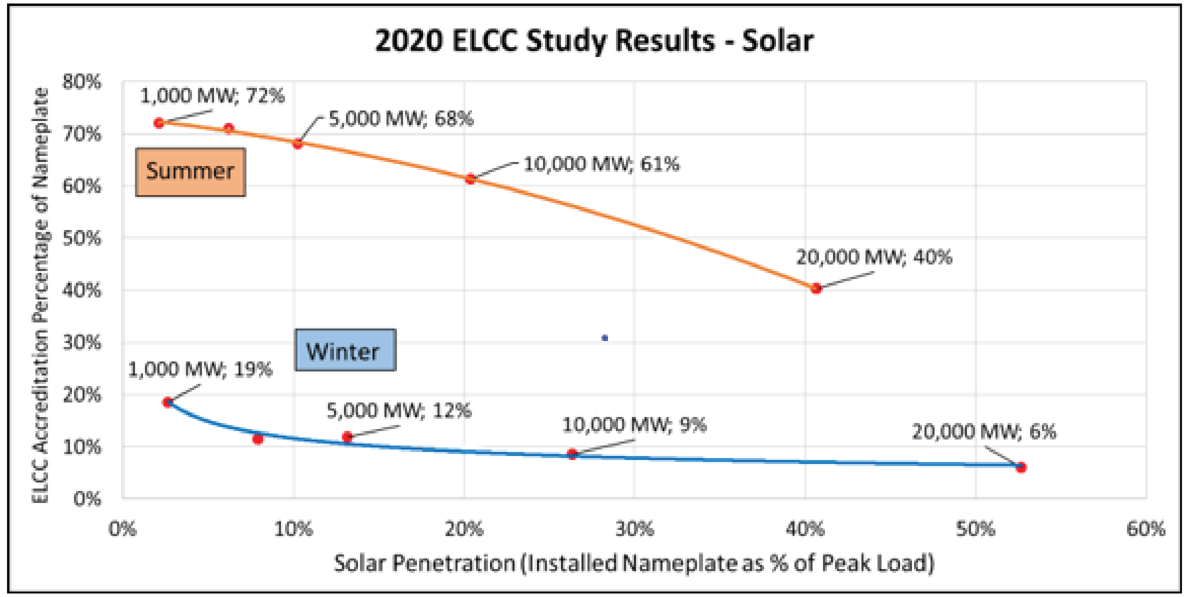


Figure 2: 2020 ELCC Study Results - Solar

Modeling Energy: Dispatchable vs Intermittent

Resources can be defined as either dispatchable or intermittent. Dispatchable resources, including thermal generation and battery energy storage, can be called upon when needed (subject to start times, state of charge etc.). Intermittent resources, including solar and wind resources, have output controlled by the natural variability of the energy resource.

Intermittent

- No production cost – First resources 'dispatched' to meet load
- SPS relies upon hourly production profiles for intermittent resources
- Capacity Factors
  - ~50% for wind resources
  - ~30% for solar resources

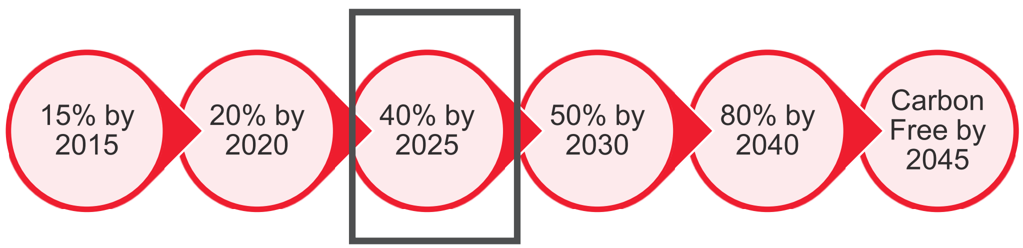
Dispatchable

- EnCompass then selects dispatchable resources (or market purchases) to meet the load not served by intermittent resources (and potentially sell into the market) that results in the lowest total cost
- Incorporates factors such as heat rate, round trip efficiency, cost of fuel, start times, min run times etc.

New Mexico - Renewable Portfolio Standards

- New Mexico Renewable Portfolio Standards require the following:
  - No later than January 1, 2015, renewable energy shall comprise no less than 15% percent of each public utility's total retail sales to New Mexico customers;
  - Increases to 20% no later than January 1, 2020;
  - Increases to 40% no later than January 1, 2025;
  - Increases to 50% no later than January 1, 2030;
  - Increases to 80% no later than January 1, 2040;
  - No later than January 1, 2045, zero carbon resources shall supply one hundred percent of all retail sales of electricity in New Mexico

SPS energy mix currently comprised of approximately 40% renewable resources



Modeling Clean Energy Requirements

- Resource Planning is conducted at the SPS system level (not individual jurisdictions)
- Can create challenges when modeling state specific requirements such as New Mexico's Renewable Portfolio Standards
- SPS typically does not constrain EnCompass for RPS compliance during the initial EnCompass analysis – instead, the results of the analysis are evaluated, and a second pass analysis conducted when necessary

Post Analysis Review

- EnCompass selects the most cost-effective portfolio of resources that meet predetermined reliability and clean energy requirements
- However, economic analyses do not fully capture all the complexities of integrated resource planning, for example (not exhaustive):
  - The benefits of locating generation in certain geographical areas
  - Resiliency benefits of alternative portfolios
  - Project risks (supply chain issues, generator interconnection risks)
- Factors such as these are evaluated on a qualitative basis and may result in additional modeling, or a different recommended portfolio

QUESTIONS ?

SYSTEM RESOURCES

Chris Whiteside | Resource Planning Analyst

System Resources – Important Considerations

- Different resources play different roles in meeting demand and energy requirements
  - Time of generation vs peak load, system transients, weather, etc.
- Supply-side resources provide generation capacity to serve load
- Traditional supply-side resources are typically fossil fuel-based generation (thermal) that can be dispatched as needed to meet load
- Renewable resources are intermittent “as available” resources
- Energy storage resources are typically achieved through Battery Energy Storage Systems (“BESS”)
- Demand-side resources typically act to reduce load
- Resource options must be economically viable
- Engineering, Procurement, Construction and Commissioning Timelines

Source: Google stock images

System Resources – Important Considerations

- System resources must connect to the Grid
  - Generator Interconnection Procedures: Attachment V of the Southwest Power Pool Open Access Transmission Tariff ("OATT").
  - New interconnection – Section 3
  - Reuse existing interconnection – Section 3.9
  - Surplus interconnection – Section 3.3
    - Refer to Generator Interconnection - Southwest Power Pool (spp.org)
    - High Level Fact Sheet may be useful: generation interconnection 4-pager 2022 03 01.pdf (spp.org)
- Replace/Repower Existing Interconnections
- New Interconnections
- DISIS

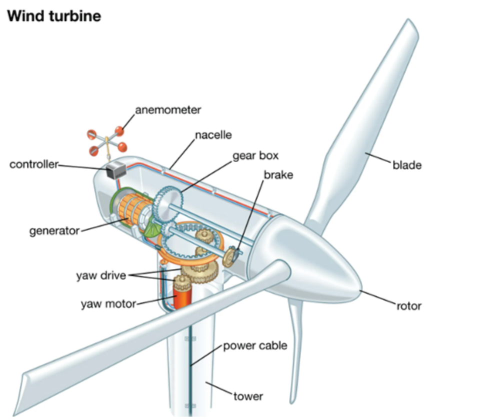

Source Image: Xcel Energy, CPR News

System Resources – Established Technologies

- Renewable Energy Resources:
  - Wind
  - Solar – Photovoltaic (“PV”)
- Thermal Energy Resources:
  - Combustion Turbine Generators (“CTG”)
  - Combined Cycle (“CC”)
- Energy Storage Resources:
  - Battery Energy Storage Systems (“BESS”)
- Commercially competitive resources
- Modeling establishes portfolio, but all generation resources will be eligible to participate in the RFP process

System Resources – Renewable – Wind

- Converts the wind energy into electricity
- Large, three-bladed Wind Turbine Generators (“WTGs”) aggregated to produce hundreds of MWs
- Intermittent resource
- Capacity factors range from 45%-55% in eastern New Mexico.
- Moderate capacity accreditation due to noncoincidental peak generation profiles.
- Land use:125 acre/MW
- PTC/ITC Eligible



Source Image: Encyclopedia Britannica, Inc.

Xcel Energy’s Sagamore Wind Farm, NM.

System Resources – Renewable – Solar (PV)

- Converts the sun's energy (photons of light) into electricity
- Several forms: Photovoltaic ("PV"), concentrating PV, or concentrating solar power
- Intermittent resource
- Capacity factors range from 30%-35% in eastern New Mexico
- Max output occurs prior to load peak, therefore, less capacity accreditation than nameplate
- Available during the daytime. Generation rises and falls with the sun barring any sky cover such as clouds or fog
- Land use: 8 acre/MW
- PTC/ITC Eligible


Xcel Energy's Sandhill Solar Farm, CO.

System Resources – Thermal – CTG

- Typically referred to a simple-cycles because they operate on a single thermal cycle known as the Brayton Cycle
- Operate on several fuel sources but are traditionally fired with natural gas with a backup fuel such as fuel oil
- Technological advancements have allowed utilization of carbon-free H2, currently blended
- Available in a wide capacity range from 4 MW to over 400 MW
- Provide extremely fast start capabilities and ramp rates, excellent load following
- Firm and dispatchable


Xcel Energy's Jones Station, TX.

System Resources – Thermal – CC

- Utilize CTGs in conjunction with Heat Recovery Steam Generators (“HRSGs”) and a Steam Turbine Generator (“STG”)
- Referred to as CCs because they combine the thermodynamic Brayton and Rankine Cycles
- Exhaust heat from the CTG(s) are ducted through the HRSG(s) to generator steam used by the STG
- Operate in multiple configurations, i.e., 1-on-1, 2-on-1, 3-on-1, etc.
- Operate on various fuel sources as well, including H2
- Come in a variety of sizes that can range from 100 MW to 1,600 MW
- Efficient due to the “waste” heat is used to generate electricity
- Excellent at load following
- Firm and dispatchable

Hobbs Generation Station, NM.

System Resources – Storage – BESS

- Power from Electrochemical Process, or other Potential Energy Sources (springs, gravity, etc.)
- Various battery chemistries available, Lithium-ion currently most prevalent
- Storage typically ranges in size from 10 MW to over 250 MW for durations from 2 to 8 hours
- Intermittent
- Dispatchable

Source Image: CESI

System Resources – Attributes

Attribute	CTG	CC	Wind	Solar	BESS[3]
Firm and Dispatchable	Yes	Yes	No	N0	Yes
Limited Duration	No	No	N/A	N/A	Yes
Proposed Accreditation Method	PBA[1]	PBA[1]	ELCC[2]	ELCC[2]	ELCC[2]
Summer Capacity Accreditation	>95%	>95%	~20%	~75%	>95%
Winter Capacity Accreditation	>95%	>95%	~20%	<5%	~80%
Construction Cost ($/kW)	500-750	~1000	1,200-2,400	1,200-2,400	1,500-2,100
Heat Rate (MMBtu/kWh)	10	6	N/A	N/A	N/A
Expected Capacity Factor (%)	0-25	25-80	45-55	28-35	N/A
CO_2 Free	No	No	Yes	Yes	N/A

1) PBA – Performance Based Accreditation
2) ELCC – Effective Load Carrying Capability
3) BESS – Battery Energy Storage System

System Resources – Emerging Technologies

- Battery Chemistries:
  - Iron-air
  - Redox-flow
- Nuclear:
  - Small Modular Nuclear Reactors
- New technology/retrofitting existing to utilize hydrogen combustion
- Carbon capture technologies
- Linear Generators
- Again, all generation resources will be eligible to participate in the RFP process

System Resources – Alternatives

- Behind the meter resources
  - Similar to supply side resources above, but behind the customer meter
  - Rooftop solar, etc.
- Demand Side Management or Demand Response
  - Participation in programs that incentivize reduced consumption during periods of high electricity demand
  - Smart thermostats
  - Smart meters can help inform and shape load profiles
- Energy efficiency
  - Use of more efficient equipment, appliances, lighting, etc.
  - Insulation and weatherization of homes

QUESTIONS ?

Welcome!

Stakeholder Engagement Meeting #2

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

Thursday, June 1, 2023

2:00 – 4:30 PM MDT

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

Purpose of Today's Meeting

- Our primary objectives are to build a foundation of shared knowledge and prepare to organize into working groups.
- Agenda
  - Review deliverables of stakeholder process
  - Introduction of newcomers
  - Describe candidate working groups and solicit volunteers
  - SPS presentations on requirements of the system and resources for meeting the requirements, followed by questions & answers
  - Collect feedback
  - Preview plan for June 13-14 workshop in Roswell

Note: this meeting is being recorded and will be available as public information. The link to the recording will be included in the meeting summary.

Key ZOOM Features for our Conversation

- Mute (microphone) - please mute when not speaking
- Video button - controls the camera focused on you; please start video when you are speaking
- Reactions button includes the option to raise or lower your hand
- Chat window allows you to offer ideas to entire group or respond to specific questions.

Stakeholder Process Deliverables: Input to Statement of Need and Action Plan

May - June	July – August	September - October
• May 16: 2 – 4:30 PM • June 1: 2 - 4 PM • **June 13 & 14: 12–5 & 9–3 workshop in Roswell**	• **July 6: 1 – 5 PM** • **August 1 & 2: 12-5 & 9-3 workshop, location TBD** • **August 29: 2 – 3:30 PM**	• **Sept. 21: 1 – 5 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans

3: IRP Reviews and Process Feedback

We Welcome Your Engagement

- New stakeholders:
  - Please come off mute, enable camera, and provide
    - Name and organization
    - One topic of interest pertaining to the IRP
  - If we miss anyone, feel free to add information to the chat
- All stakeholders, working group opportunities:
  - Statement of Need
  - Modeling
  - Other topics of interest
- Please let us know of missing voices (type into chat)

SPS Information Regarding System Requirements and Resources

- Electric System Requirements
- 5-minute break
- Resources Available to Satisfy Requirements
- Q&A

Please Access and Complete the Survey Now

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...by either:

Scanning the QR Code to the right

OR

Visiting this link:
bit.ly/SPS-IRP-Feedback

We Strongly Encourage You to Join us in Roswell

June 13

- 12:00 - 12:45 PM: networking lunch
- 1:00 – 5:00 PM: learn more about the SPS system, IRP topics and working group activities

June 14

- 9:00 – 12:00 noon: working groups create Statement of Need outline and framework for modeling activities
- 12:00 – 12:45 PM: networking lunch
- 1:00 – 3:00 PM: working group activities, meeting feedback, and next steps

Location: Roswell Convention and Civic Center, Roswell, NM
Virtual participation via ZOOM will be available, though you will miss out some great lunches and opportunities to meet other stakeholders!

Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

GRIDWORKS

Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

Gridworks-provided Chat Log from Meeting

13:14:21 From Gary Oppedahl to Everyone:
It may be just me; but I could not download the "Gridworks" slides (I CAN download the Excel slides)
13:15:26 From Deborah Shields - Gridworks to Gary Oppedahl(Direct Message):
Deborah here - I will email you the link to the slides
13:16:06 From Jay Griffin to Everyone:
Hi Gary,
13:16:14 From Jay Griffin to Everyone:
Try this - https://gridworks.org/wp-content/uploads/2023/06/SPS-IRP-Stakeholder-Meeting-2023_06_01.pptx-2-1.pdf
13:23:05 From Gary Oppedahl to Deborah Shields - Gridworks(Direct Message):
That worked!
13:35:26 From Robert to Everyone:
Your SON should address all forms of energy including current sources, to ensure delivery a reliable, sustainable and affordable electricity during the transition to green energy.
13:37:49 From Margie Tatro (Gridworks) to Everyone:
Thank you Robert.
13:38:33 From Robert to Everyone:
Your costs models should cover cradle to grave costs (lifecycle costs) that include development, deployment, maintaining (sustainment) and retirement social-economic costs.
13:53:35 From Jim DesJardins to Everyone:
Why is energy storage rated at only 90% of nameplate?
13:55:05 From Thomas Singer WELC (he/him) to Everyone:
I saw a slide labeled demand but it did not seem to really be about demand but rather was about supply options. Can you please bring up the slide about modelling demand for review?
13:55:23 From Chris Leger (Interwest) to Everyone:
I reviewed the 2022 SPP ELCC Study Report, is my understanding correct that there is one ELCC value for solar (or wind), regardless of where the facility is within the SPP footprint? Is the 2022 study report the current study that SPS is referencing here?
13:55:52 From Chris Leger (Interwest) to Everyone:
Is my understanding correct that SPS did not do an independent ELCC study but is using the SPP study results?
Is SPS required to use these results in a state IRP process?
13:56:28 From Jeffry Pollock to Everyone:
What analysis do you conduct to determine the cost of integrating new renewable resources, particularly the resources added to meet the NM RPS standard?When determining the mix of renewable energy resources to meet the NM RPS standards, do you then rerun Encompass to determine whether the addition of these resources is least cost? If not what analysis do you conduct to determine the most cost-effective resources?
13:56:45 From Erik Aaboe - NM RETA to Everyone:
That is my understanding as well, the Southwest Power Pool mandates this as well as planning reserve margin
13:58:09 From Athena Christodoulou to Everyone:
Cradle to grave costs! Yes, including pollution costs typically borne by others - FF emissions account for 90% of air pollution and globally cause 8.5mill deaths/yr. Not to mention greenhouse gases and current developing climate crisis...whew!

14:01:28 From Athena Christodoulou to Everyone:
Are you considering the DOE commercialization of other energy storage technologies beyond BESS?
14:12:07 From David Millar to Everyone:
Are you planning on modeling RICE engine power plants as candidate resources?
14:18:14 From David Millar to Everyone:
Reciprocating internal combustion engines.
14:18:52 From David Millar to Everyone:
A more flexible and more efficient alternative to aeroderivative turbines. Also they don't require water.
14:23:52 From Athena Christodoulou to Everyone:
Do you include levelized cost of operation? Includes capital costs , fuel, etc?
14:24:25 From Athena Christodoulou to Everyone:
Sorry "of System (LCOS)"
14:26:46 From Thomas Singer WELC (he/him) to Everyone:
How do you propose to model CCS and hydrogen combustion given huge cost uncertainty? What is the value of this for planning?
14:27:48 From Mike Espiritu, Roswell-Chaves County EDC to Everyone:
Are there discussions about the future and impact of hydrogen fuel sources?
14:27:49 From Athena Christodoulou to Everyone:
And Hydrogen isn't really renewable and has much more polluting lifecycle... if from fossil fuels
14:32:08 From Jim DesJardins to Everyone:
Is SPS looking into how to incorporate BTM solar w smart inverters and storage as dispatchable resources?
14:37:17 From Athena Christodoulou to Everyone:
Load curves?
14:42:00 From Michael Kenney, SWEEP to Everyone:
How does SPS anticipate modeling demand response potential? How does SPP treat demand response as a resource?
14:44:56 From Cynthia Mitchell to Everyone:
This is a critical topic and issue and should have time devoted to this.
14:56:46 From Daren Zigich, EMNRD/ECMD to Everyone:
So basically you will invest in todays tech knowing it won't meet the needs of tomorrow ?
14:59:26 From Cynthia Mitchell to Everyone:
Response to Tom Singer: Further out in planning cycle SPS (or PNM) places gas to hydrogen, then when NPV calculated, the process. discounting minimizes its cost. So your point, question, is on point!
15:04:03 From Athena Christodoulou to Everyone:
Will you be conducting any RFIs for advanced technologies? Like thermal energy storage
15:14:05 From Athena Christodoulou to Everyone:
Thank you everyone.
15:14:39 From Jim DesJardins to Everyone:
Thank you. Very informative. Looking forward to Roswell.
15:15:13 From Deborah Shields - Gridworks to Everyone:
bit.ly/SPS-IRP-Feedback
15:18:29 From Margie Tatro (Gridworks) to Everyone:

please complete the survey and come back for our final slide and preview of our upcoming meeting
15:21:52 From Deborah Shields - Gridworks to Everyone:
Thank you for your survey feedback
15:23:45 From Cynthia Mitchell to Everyone:
Recommendations on lodging?
15:24:19 From Deborah Shields - Gridworks to Everyone:
I will provided some suggested hotels in Roswell

June 1, 2023

Link to recorded meeting

GMT20230601 195906 Recording 1920x1080 - YouTube

June 13-14, 2023 Stakeholder Meeting

GRIDWORKS

Meeting #3, June 13-14, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

SUMMARY

Approximately 36 stakeholder representatives from 24 different organizations attended a two-day workshop focused on developing input to Xcel Energy/SPS's Integrated Resource Plan. The workshop was held in Roswell, New Mexico. Stakeholders developed input to the Statement of Need and a plan for engaging in modeling activities. Both activities inform input to the Action Plan.

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

- Agenda
- Slide Deck – Gridworks/SPS IRP 6/13/23 & 6/14/23 Stakeholder Engagement Workshop
- Slide Deck – Xcel Energy/SPS In-Person Facilitated Stakeholder Meeting 6/13/23 & 6/14/23
- 2023 IRP Acronym List
- SPS Presentation on System Reliability Metrics
- SPS Presentation on Forecasting Natural Gas Prices, SPP Market Prices, and Peak Demand
- SPS Presentation on System Resources
- Statement of Need Elements – 6/13/23
- Modeling Working Group Summary
- SPS IRP Stakeholder Modeling Request, also available electronically at: SPS IRP Modeling Request (office.com)
- Recordings (with exception of the break out sessions):
  - Recording for 6/13 - https://youtu.be/9mtH7j2BTM8
  - Recording for 6/14 - https://youtu.be/QsSaPu1v0Ik

After introductions of all meeting participants, the SPS team presented information about the anticipated resource needs, status of the most recent RFP, and the current IRP modeling approach. All questions submitted from stakeholders present in person and attending via Zoom were answered by SPS representatives. Questions included topics such as planning reserve margin considerations, load forecast assumptions, resource technology options, demand response opportunities, and others.

Break out sessions focused on the Statement of Need (SoN) and modeling activities produced a draft of the SoN and a plan for modeling engagement activities.

STATEMENT OF NEED BREAK OUT SUMMARY

The SoN discussion group included:
- Karen Boehler (consumer)
- Athena Christodoulou (CSol Power/NMSEA)
- Jim DesJardins (NM REIA)
- Austin Jensen and Bailey Nickoloff (NM Large Customer Group)
- Agata Malek and Edison Jimenez (NM PRC Utility Division)
- Jonathan Smith (Crestwood)
- Steve Smith (Devon Energy)
- Kerry Stanley (Targa Resources)
- Tom Neal, Zoe Lees, Matt Larson and James Lackey (SPS/Xcel)
- Margie Tatro (Gridworks)

The group drafted a list of topics to be considered as input to the SoN, see link to “Statement of Need Elements” above. An interim committee of Austin Jensen, Karen Boehler, Jim DesJardins and Zoe Lees volunteered to work on the next version of the SoN input document. Any stakeholder with interest is welcome to join this group, which is called SoNIC.

This group listed the following questions/requests of the modeling efforts:
1. Model a scenario with accelerated RPA goals, e.g. carbon free by XXXX
2. Include an increased demand response scenario
3. How are distributed resources considered in the modeling?
4. How is distributed generation considered in the load forecast and what costs are assigned?
5. How are distribution system investments treated in the model?
6. How are scenarios stress tested for extreme weather, forest fires, or other summer peak conditions?

MODELING BREAK OUT SUMMARY

The modeling discussion group included:
- James Hall (Exxon Mobil)
- Chris Leger (Interwest Energy Alliance)
- Chelsea Canada (NM Chamber of Commerce)
- Keven Gedko (NMAG)
- Ed Rilkoff, Cynthia Mitchell, Gabriela Dasheno, and Naomi Velasquez (NM PRC Utility Division)
- Michael McMillin (OPL)
- Michael Kenney (SWEEP)
- David Millar (Wartsila)

GRIDWORKS

- Ben Elsey, Chris Whiteside. Jeremy Lovelady, John Goodenough, Justin Smiley, Mike D'Antonio, Paul Haverfield, Patrick Lucero, Sonja Jenko (SPS/XCel)
- Jay Griffin (Gridworks)

The Modeling Working Group has the following objectives:
- Review and provide feedback on SPS modeling inputs and key assumptions;
- Review and provide feedback on SPS model results;
- Identify and prioritize stakeholder-requested modeling runs; and
- Identify and facilitate access to modeling software, if requested. (No requests were made at the meeting)

The modeling work group reviewed and discussed presentations from SPS on the following topics:
- hierarchical scenario analysis process;
- system resources (including commercially available and emerging technologies);
- projections for natural gas prices, SPP market prices, and peak demand; and
- SPS form for stakeholders to request scenarios to model.

The modeling working group report (link above) contains a summary of the questions and topics discussed during these presentations. In the remaining time, the working group members developed a work plan to inform and support SPS modeling work in the next few months.

A subgroup will meet on June 30 from 9:00-10:30 MDT to review SPS assumptions on demand-side resources and discuss alternative modeling scenario(s) of these resources. This meeting will be recorded and the link is shown below:

Demand-side Resources Scenario Discussion
June 30, 9AM, Join Zoom Meeting:
https://us02web.zoom.us/j/8569536132
or join by phone (US) +1 301-715-8592

NEXT STEPS

The next steps for both the SoN and modeling activities are shown below.

DATE	MODELING	STATEMENT OF NEED
June 19-28	SPS provides information on forecasts of NG prices, SPP market prices, and demand	SoN Interim committee edits draft SoN; Austin Jensen and Zoe Lees to coordinate.
June 30, 9:00 – 10:30 AM Zoom meeting hosted by Gridworks	Meeting of interested stakeholders to discuss Demand Side Resources scenario parameters	

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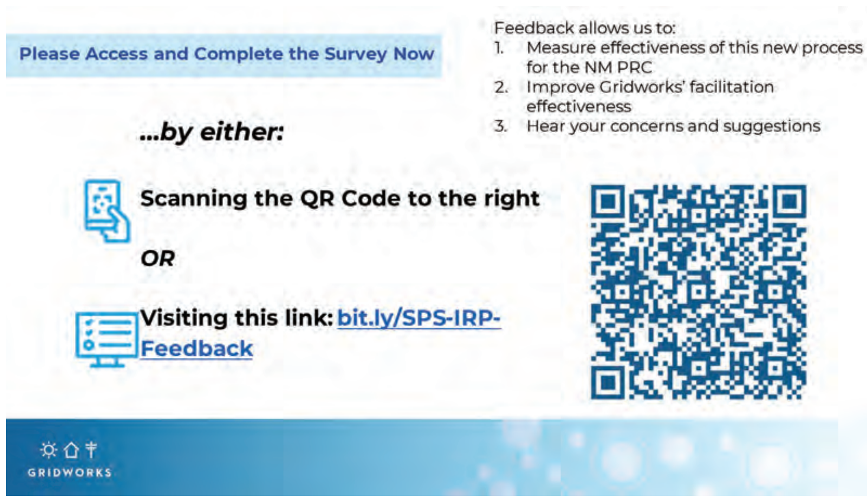
June 30	Stakeholder requested modeling run requests submitted to Ben Elsey (ben.r.elsey@xcelenergy.com) and Jay Griffin (jgriffin@gridworks.org). Meeting to discuss Demand-side Resources, 9:00 AM MDT. Stakeholder feedback on SPS input assumptions, characterization of existing technologies, and requests to model emerging technologies.	Draft SoN input posted on Gridworks website as pre-read
July 6 STAKEHOLDER MEETING	Review of SPS base runs results Review proposals for stakeholder-requested Modeling Runs (Round 1)	Draft SoN input presented, feedback collected.
July 7-24	Modeling	Revisions to SoN input
July 25	Modeling results to date posted on Gridworks website as pre-read	SoN input posted on Gridworks website as pre-read
Aug 1-2 STAKEHOLDER MEETING	First Modeling Review including Stakeholder requested Modeling Runs (Round 2). Action Plan Input.	Assess level of consensus on SoN input. Action Plan Input.
September 21 STAKEHOLDER MEETING	Modeling Concluded – Final Modeling Review	

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.

GRIDWORKS



NEXT MEETING: The next meeting of the group, Meeting #4, is scheduled for July 6 from 1 PM – 5 PM, via Zoom: https://us02web.zoom.us/j/8569536132 (ID: 8569536132)

Join by phone
(US) +1 301-715-8592

SYSTEM RESOURCES

Commercially Available Technologies

System Resources – Commercially Available Technologies

Renewable	Storage	Firm/Dispatchable
Wind	BESS[1]	CTG[2]
Solar		CC[3]

1) Battery Energy Storage System ("BESS")
2) Combustion Turbine Generator ("CTG")
3) Combined Cycle ("CC")


Xcel Energy's Sagamore Wind Farm, NM.


Xcel Energy's Sandhill Solar Farm, CO.


Hobbs Generation Station, NM.


Xcel Energy's Jones Station, TX.

Source Image: CESI

System Resources – Commercially Available Technology Modeling Benefits

- Current market established cost and production profiles
  - Actionable near-term modeling results (this decade) - Predictable
  - Cost established
  - Time to market established
  - Current infrastructure certainty – Reuse of existing interconnections beneficial
- Solves near term needs with today’s technology
  - Leaves opportunity for “horizon” planning and integration of emerging technologies

System Resources – Commercially Available Technology Attributes

Attribute	Wind	Solar	BESS[3]	Long Duration BESS[4]
Firm and Dispatchable	No	N0	Yes	Yes
Limited Duration	N/A	N/A	Yes	Multi-day
Proposed Accreditation Method	ELCC[2]	ELCC[2]	ELCC[2]	TBD
Summer Capacity Accreditation	~20%	~75%	>95%	TBD
Winter Capacity Accreditation	~20%	<5%	~80%	TBD
Construction Cost ($/kW)	1,200-2,400	1,200-2,400	1,500-2,100	TBD
Heat Rate (MMBtu/kWh)	N/A	N/A	N/A	N/A
Expected Capacity Factor (%)	45-55	28-35	N/A	N/A
CO_2 Free	Yes	Yes	N/A	N/A

1) PBA – Performance Based Accreditation
2) ELCC – Effective Load Carrying Capability
3) BESS – Battery Energy Storage System – Round Trip Efficiencies: ~ 80% - 85%
4) BESS – Longer Term Durations – Round Trip Efficiencies: ~ 40% - 50%

System Resources – Renewable – Wind

- Convert's the wind energy into electricity
- Large, three-bladed Wind Turbine Generators ("WTGs") aggregated to produce hundreds of MWs
- Intermittent resource
- Capacity factors range from 45%-55% in eastern New Mexico.
- Moderate capacity accreditation due to noncoincidental peak generation profiles.
- Land use:125 acre/MW
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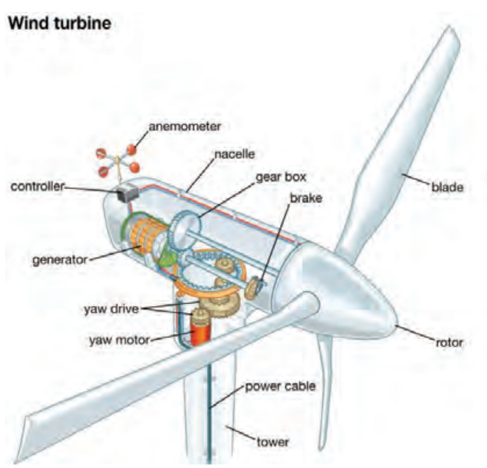

Source Image: Encyclopedia Britannica, Inc.

Xcel Energy's Sagamore Wind Farm, NM.

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- Convert's the sun's energy (photons of light) into electricity
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- Capacity factors range from 30%-35% in eastern New Mexico
- Max output occurs prior to load peak, therefore, less capacity accreditation than nameplate
- Available during the daytime. Generation rises and falls with the sun barring any sky cover such as clouds or fog
- Land use: 8 acre/MW
- PTC/ITC Eligible

Xcel Energy's Sandhill Solar Farm, CO.

System Resources – Storage – BESS

- Power from Electrochemical Process, or other Potential Energy Sources (springs, gravity, etc.)
- Various battery chemistries available, Lithium-ion most currently most prevalent
- Storage typically ranges in size from 10 MW to over 250 MW for durations from 2 to 8 hours
- Balances the intermittent nature of wind and solar
- Dispatchable
- Longer term storage durations in development

Source Image: CESI

System Resources – Storage – Long Duration BESS

- Battery Energy Storage (“BESS”) Long Duration:
- Long duration, multi-day
  - Form Energy’s Iron-air BESS – 10MW/100-hour storage duration
  - Xcel Energy has two pilot projects underway planned for our Northern and Colorado sister utilities
  - Uses electricity to form elemental iron; when the iron rusts again, it releases energy in the form of electricity that can be put back on the grid

System Resources – Commercially Available Technology Attributes

Attribute	CTG	CC	Future CTG[2,3]	Future CC[2,3]
Firm and Dispatchable	Yes	Yes	Yes	Yes
Limited Duration	No	No	No	No
Proposed Accreditation Method	PBA[1]	PBA[1]	PBA[1]	PBA[1]
Summer Capacity Accreditation	>95%	>95%	>95%	>95%
Winter Capacity Accreditation	>95%	>95%	>95%	>95%
Construction Cost ($/kW)	500-750	~1000	TBD	TBD
Heat Rate (MMBtu/kWh)	10	6	TBD	TBD
Expected Capacity Factor (%)	0-25	25-80	0-25	25-80
CO_2 Free	No	No	TBD	TBD

1) PBA – Performance Based Accreditation
2) Hydrogen Capable
3) Carbon Capture and Storage

System Resources – Thermal – CTG

- Typically referred to a simple-cycles because they operate on a single thermal cycle known as the Brayton Cycle
- Operate utilizing several established fuel sources but are traditionally fired with natural gas with a backup fuel such as fuel oil
- Available in a wide capacity range from 4 MW to over 400 MW
- Provide extremely fast start capabilities and ramp rates, excellent load following
- Firm and dispatchable
- Technological advancements have allowed utilization of carbon-free H2, currently blended (38% blend achieved currently)
- Carbon capture an option in the future


Xcel Energy's Jones Station, TX.

System Resources – Thermal – CC

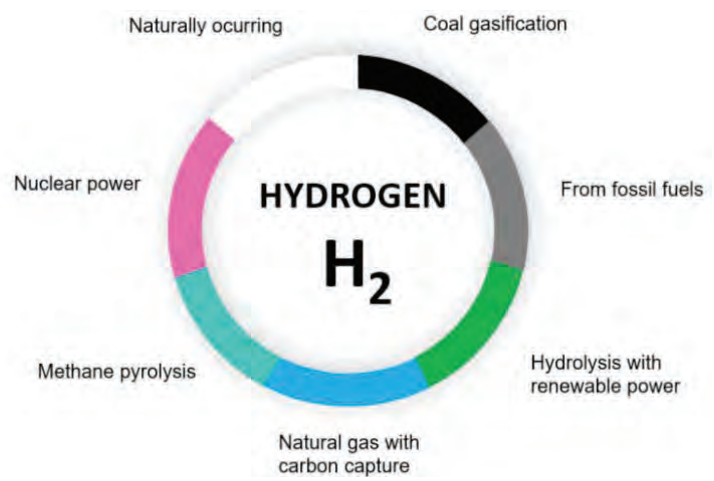
- Utilize CTGs in conjunction with Heat Recovery Steam Generators (“HRSGs”) and a Steam Turbine Generator (“STG”)
- Referred to as CCs because they combine the thermodynamic Brayton and Rankine Cycles
- Exhaust heat from the CTG(s) are ducted through the HRSG(s) to generator steam used by the STG
- Operate in multiple configurations, i.e., 1-on-1, 2-on-1, 3-on-1, etc.
- Operate on various established fuel sources
- Come in a variety of sizes that can range from 100 MW to 1,600 MW
- Efficient due to the “waste” heat is used to generate electricity
- Excellent at load following, Firm and dispatchable
- Hydrogen capable
- Carbon capture an option in the future


Hobbs Generation Station, NM.

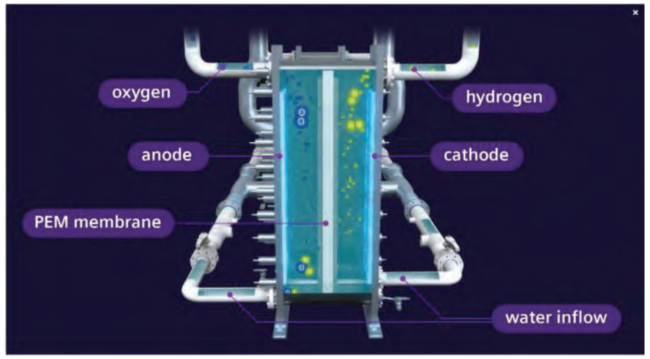
System Resources – Emerging Technologies

Hydrogen (H2):

- Green
  - Hydrogen produced using surplus renewable energy resources, such as solar or wind power, to power an electrolyzer which splits water into hydrogen and oxygen (process known as electrolysis)
- Blue
  - Hydrogen produced from natural gas and supported by carbon capture and storage. The CO2 generated during the manufacturing process is captured and stored
- Pink
  - Hydrogen produced using surplus nuclear energy to power an electrolyzer.



Source Image: Society of Petroleum Engineers



Source Image: Siemens Energy

System Resources – Emerging Technologies

Carbon Capture and Storage/Sequestration (“CCS”):

- Carbon Dioxide (CO2) chemically separated from combustion exhaust
- Capable of exceed 95% efficiency
- Often stored in geological formations or other forms for reuse in other processes

System Resources – Emerging Technologies

Emerging Technologies:

- The following discussion is not an exhaustive list nor are major technical details discussed
- Material is meant to inform at a high level of some of the emerging technologies that might be of interest to stakeholders.
- If more information is required, Xcel Energy would be happy to provide

System Resources – Emerging Technologies

Nuclear – Small Modular Reactors (SMRs):

- As the name implies, modular scale of proven nuclear reactor designs
- Fully factory fabricated power modules (~77 MW)
  - E.g. - NuScale plants from ~ 230 MW – 900 MW
  - Reduces the financial risks associated w/ conventional builds
- Carbon free energy production

Source Image: Popular Mechanics Jan/Feb 2021

System Resources – Emerging Technologies

Linear Generators

- Reaction vs combustion
- Modular
  - ~1.5MW/module
- Natural gas or biogas fuels
- 100% H2 Capable

Source Image: Mainspring Energy

System Resources – Modeling Emerging Technology

- “Place holders” representative of technology types available for the model to select
- What would stakeholders prefer to model, need suggestions by July 6 preferably

QUESTIONS ?

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SOUTHWESTERN PUBLIC SERVICE COMPANY 2023 NEW MEXICO INTEGRATED RESOURCE PLAN

1st In-Person Facilitated Stakeholder Meeting

June 13 – 14, 2023 – Roswell, New Mexico

GAS FORECAST

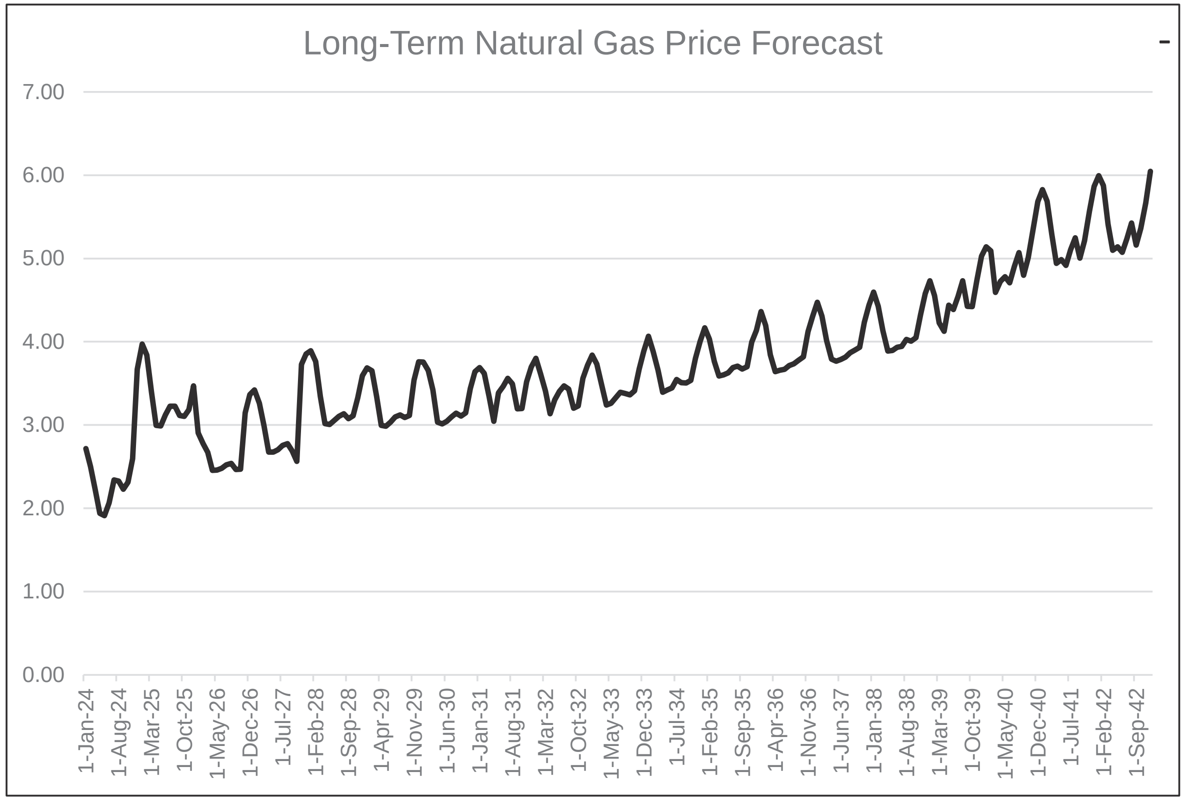
Natural Gas Forecast

(1) Natural Gas Price Forecast – The price of natural gas is an important variable. SPS uses a combination of market prices and fundamental price forecasts, based on multiple highly respected, industry leading sources, to calculate monthly delivered gas prices. As the foundation of the gas price forecast, Henry Hub natural gas prices are developed using a blend of market information (New York Mercantile Exchange ("NYMEX") futures prices) and long-term fundamentally-based forecasts from Wood Mackenzie, IHS Energy, and S&P Global. The forecast is fully market-based for the first few years, then transitions into blending the four sources to develop a composite forecast. The Henry Hub forecast is adjusted for regional basis differentials and specific delivery costs for each generating unit to develop final model inputs. The current weightings for each component at various time intervals of the forecast period are shown in Table BRE-RR-2:

Table BRE-RR-2: Natural Gas Forecast Weightings

Months	NYMEX	IHS Energy	S&P Global Global	Wood MacKenzie
Current Year + 2 Years	100.0%	0.0%	0.0%	0.0%
Thereafter	25.0%	25.0%	25.0%	25.0%

Natural Gas Forecast



Gas Prices:

We are down to 3 sources as a result of the S&P Global and IHS Markit merger

Period	NYMEX	S&P/IHS	Wood Mackenzie
Balance of the year + 2 years	100%	0%	0%
Years 3 and Beyond	25%	37.5%	37.5%

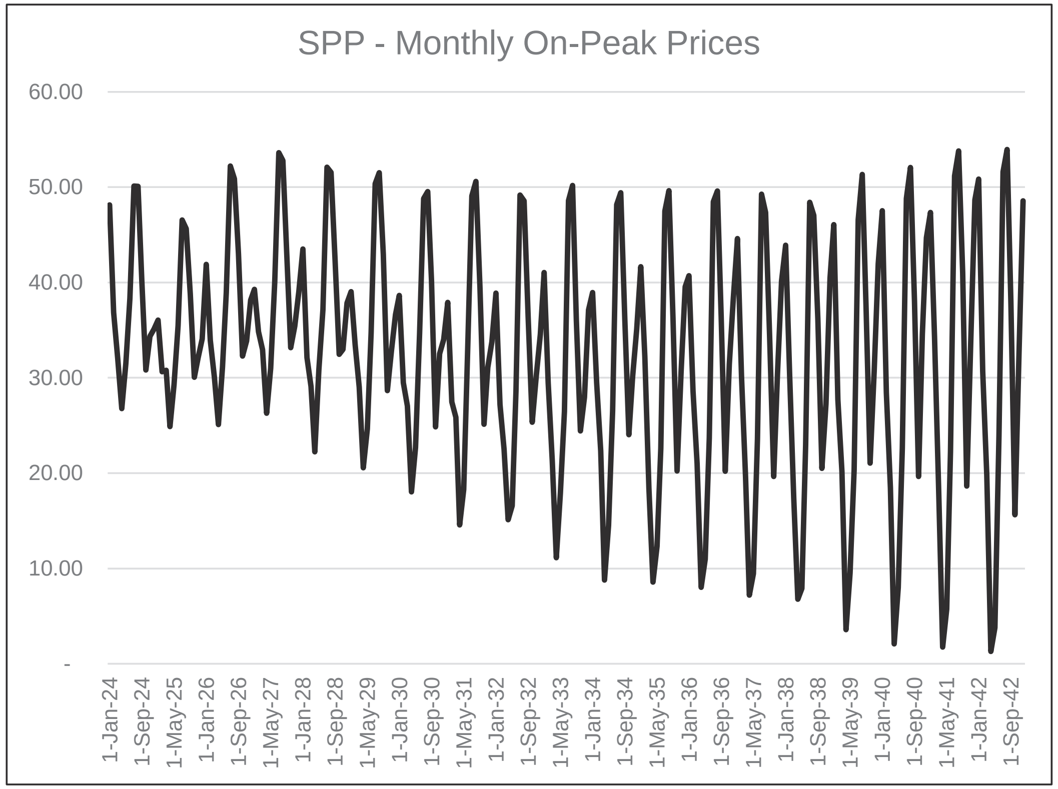
Market Price Forecasts

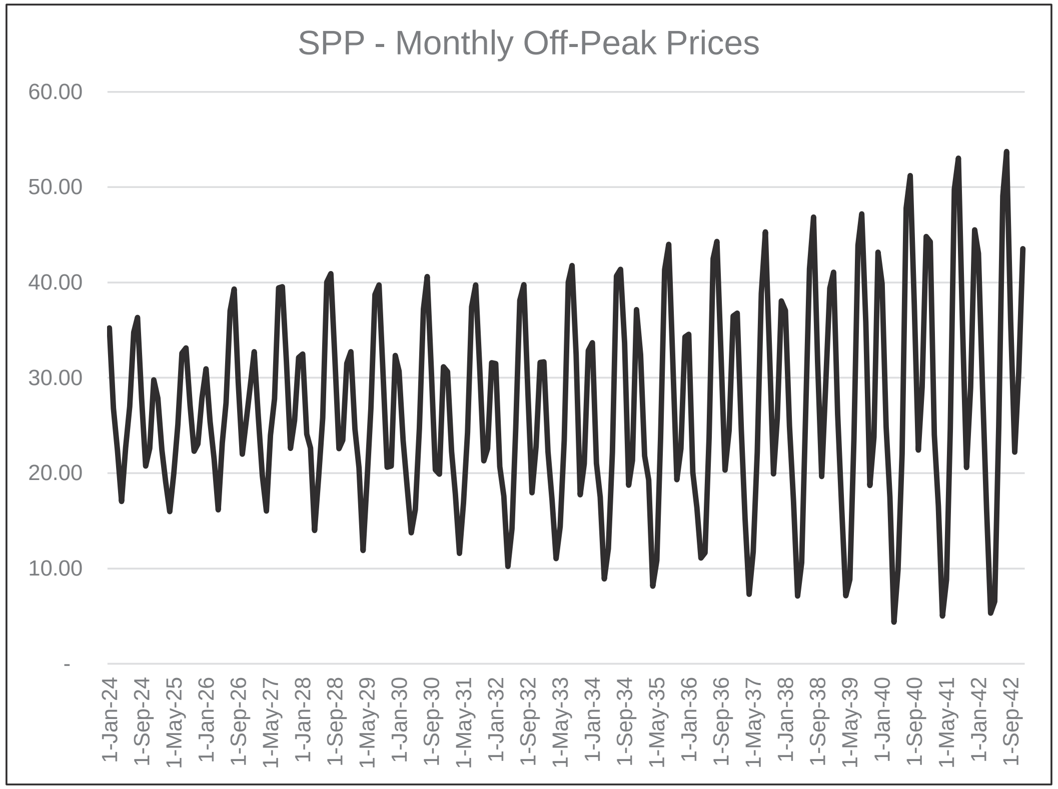
(3) Market Electricity Prices – In addition to resources that exist within SPS's service territory, SPS has access to a regional market located outside its service territory. That is, SPS is a member of the Southwest Power Pool, which operates as a consolidated balancing authority and dispatches all available generation resources within its boundaries. This consolidated dispatch allows SPS access to energy resources outside of SPS's service territory for purchases, as well as the opportunity to sell from its generating sources to other market participants.

Since the company's Fall 2022 forecast, SPS uses a simple average of the long-term market price forecasts provided by Wood Mackenzie, S&P Global, and IHS Markit as the basis for prices for assumed purchases from the Southwest Power Pool South Hub.

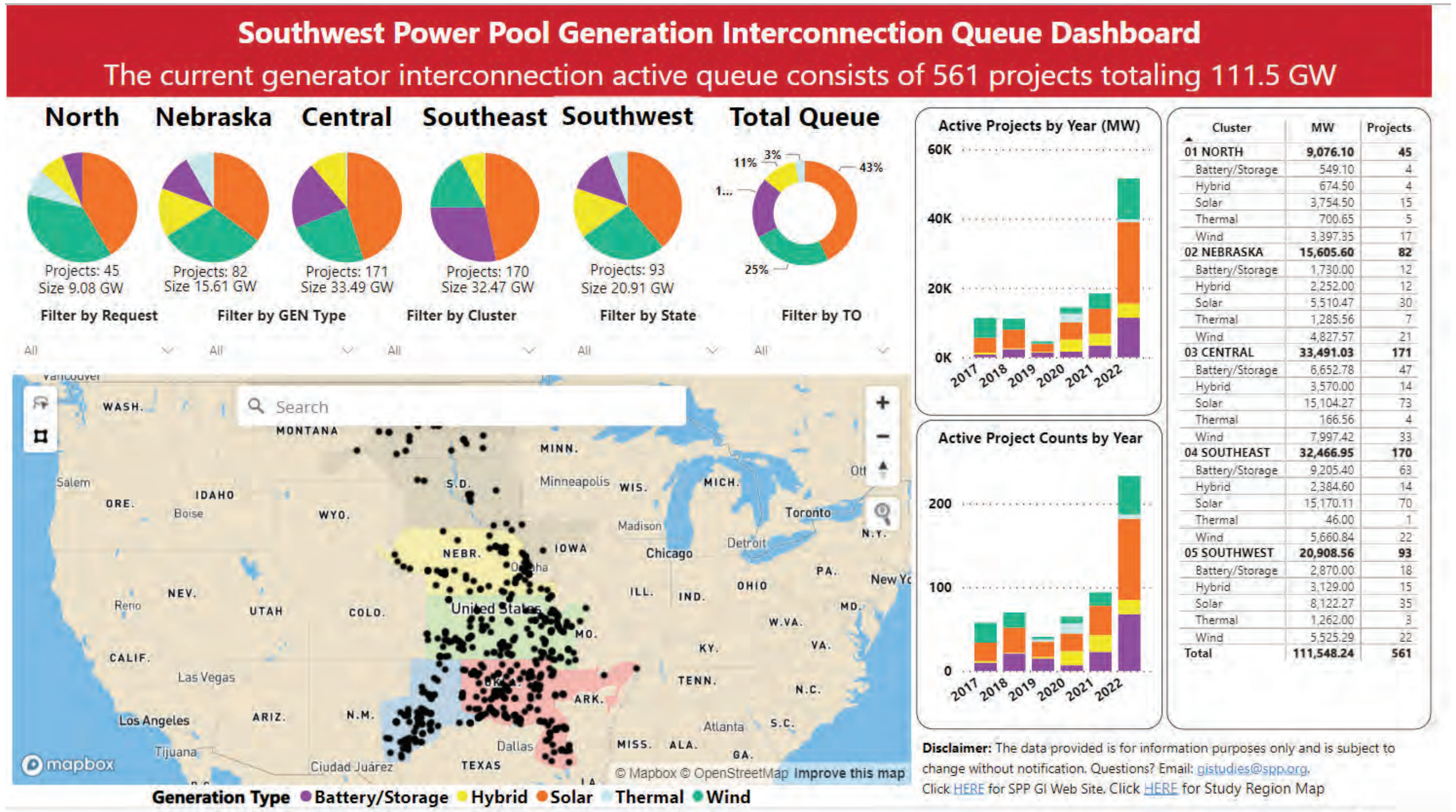
Prior to Fall 2022, SPS used a simple average of long-term on-peak and off-peak implied heat rate forecasts provided by Wood Mackenzie, S&P Global, and IHS Markit as the basis for prices for assumed purchases from the Southwest Power Pool South Hub. The implied heat rates, denominated in million British thermal units/megawatt-hour, were then multiplied by SPS's long-term natural gas price forecast to convert the implied heat rate values into energy prices. This process was repeated for all months, distinguishing between on and off-peak prices, through the end of the modeling period.

Monthly Market Prices



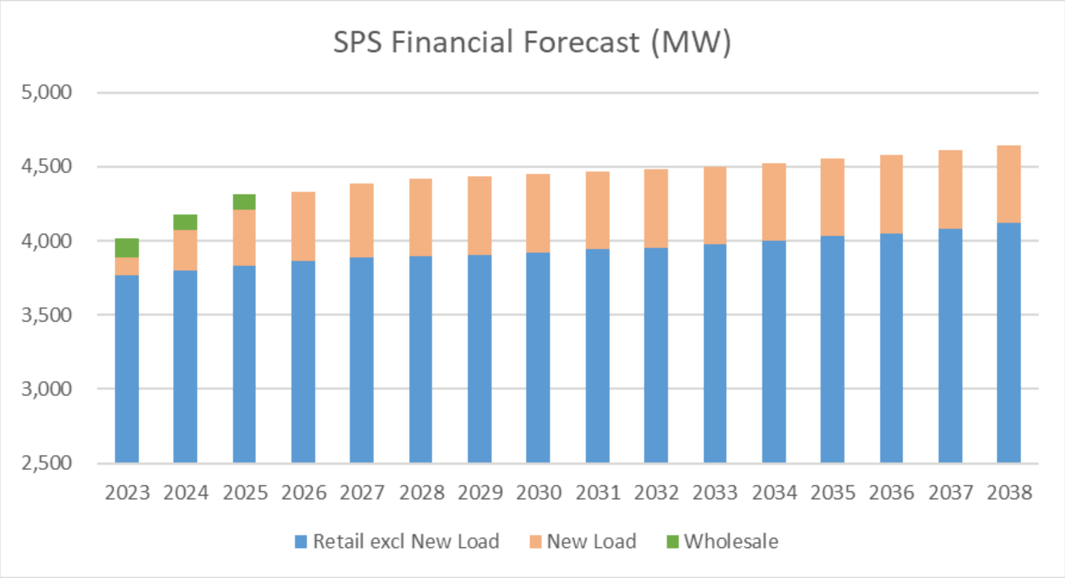


Monthly Market Prices



Discussion moved to SPP Website

Current Base Outlook



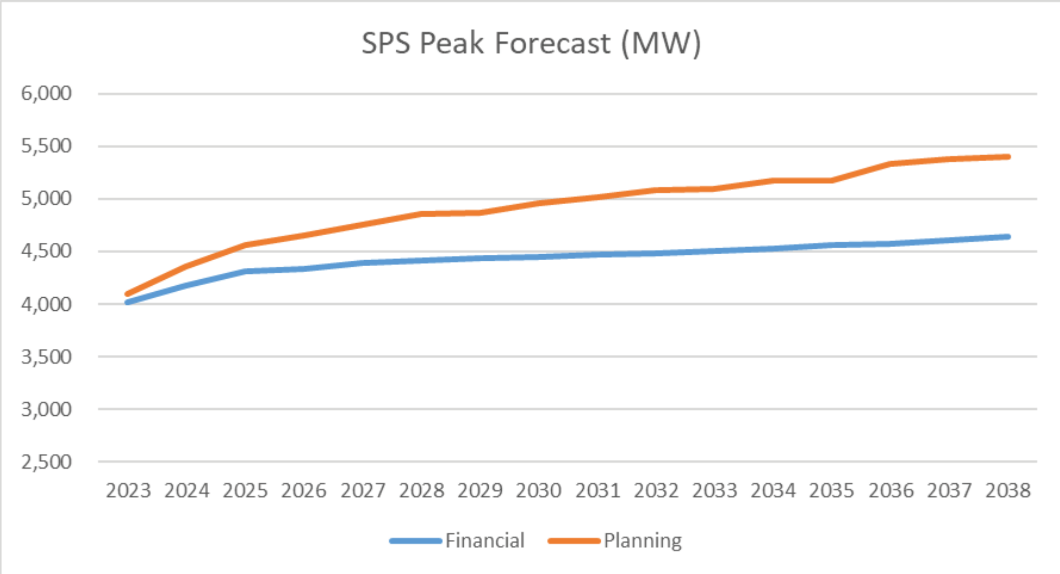
Average Annual Growth			
	Retail x/NL	Retail	Financial
2023-2028	0.7%	2.6%	1.9%
2028-2038	0.6%	0.5%	0.5%

- Represents the 50th percentile, or Financial forecast
- New Load impacts range from 120-525 MW
- Near-term growth in line with recent trends, longer-term slowdown

New Load Assumptions

- Only include highly probable loads (probability >80 percent)
- Probability of requests connecting declines over time
  - Example - Year 1: 80 percent phases down to Year 6+: 50 percent
- Assume 60 percent load factor for oil and gas loads, 95 percent for data centers and other large loads
- 50 percent of oil and gas demand is coincident with system peak, 95 percent for data centers and other large loads
- By 2030: 1,300 MW of high probability load identified, 525 MW of peak impact included
- Excludes 5,000+ MW of data center and other high load factor requests

Current High Outlook



Average Annual Growth		
	Financial	Planning
2023-2028	1.9%	3.4%
2028-2038	0.5%	1.1%

- Planning forecast represents the 85th percentile
- Forecast differences range from 80-760 MW
- Considered a proxy for more of the high probability load connecting
- Does not include 5,000+ MW of additional requests

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23-00188-UT RELIABILITY METRICS

Casey Meeks / Director of Distribution Operations

June 16th, 2023

DISCUSSION ITEMS

- Reliability Tracking and Results
- Observations and Trends
- Reliability Action Plans

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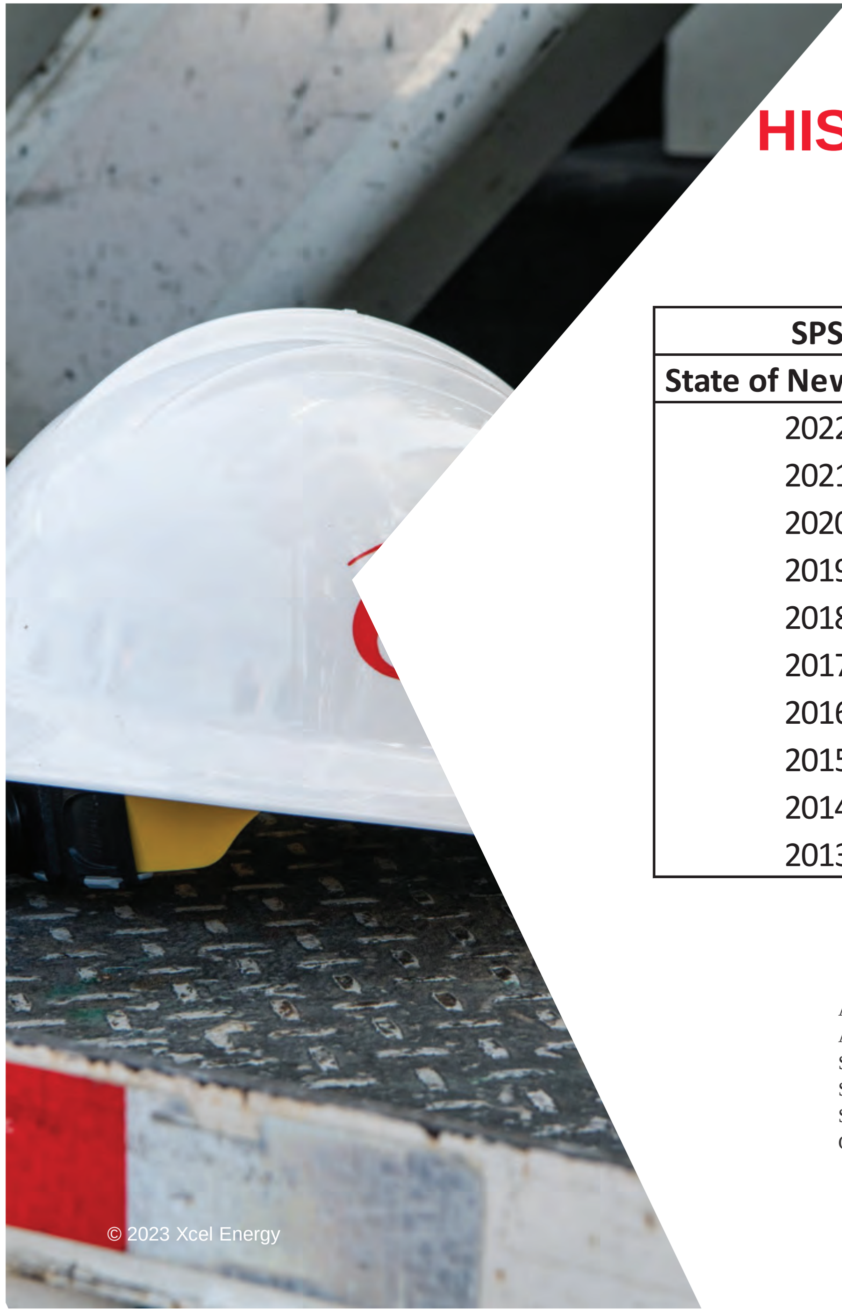

HISTORIC SAIDI, SAIFI & CAIDI RESULTS

SPS	IEEE 1366 Without MEDs - (State)			All Days-Includes IEEE 1366 MEDs		
State of New Mexico	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
2022	106.4	0.91	117	117	0.93	126
2021	128.5	1.14	113	195.9	1.82	107
2020	103.7	0.88	118	111.7	0.97	115
2019	136.6	1.2	114	277.1	1.53	181
2018	1060.2	1.03	103	106.2	1.03	103
2017	90.3	0.94	96	90.3	0.94	96
2016	118.3	1.17	102	118.3	1.17	102
2015	132.9	1.26	106	200.6	1.46	138
2014	74.6	0.8	93	81.9	0.84	98
2013	93.9	1.2	78	146.4	1.69	87

Assumptions: IEEE 1366 Without MED's - (State): IEEE 1366 normalization method applied to the Xcel Energy territory in the State of New Mexico(Includes only customers in NM).
All indices' results are based on just the Xcel Energy customers & outages in the state of New Mexico.
SAIDI & CAIDI are reported in minutes. SAIFI is reported in number of interruptions.
SAIDI - System Average Interruption Duration Index - Indicates the total duration of time out of service a customer experiences on average over the timeframe measured.
SAIFI - System Average Interruption Frequency Index - Indicates how often(# of) on average a customer experiences a sustained outage over the timeframe measured.
CAIDI – Customer Average Interruption Duration Index – Indicates the average time to restore service of an outage.

OUTAGE DURATIONS

SINGLE OUTAGE

SPS-CELI	All Days-Includes IEEE 1366 MEDs			IEEE 1366 Without MEDs - (State)		
State of New Mexico	>4 Hours	>8 Hours	>12 Hours	>4 Hours	>8 Hours	>12 Hours
5 Yr Avg (18-22)	10,872	2,990	1,126	14,283	3,927	2,190
10YR Avg(13-22)	9,070	2,207	766	11,780	3,144	1,583
2022	10,406	4,538	1,998	9,196	3,377	1,147
2021	16,140	2,944	816	10,432	2,384	780
2020	8,856	2,769	1,063	8,825	2,769	1,063
2019	10,634	2,477	1,247	34,634	8,883	7,450
2018	8,325	2,221	508	8,325	2,221	508
2017	5,687	1,553	496	5,687	1,553	496
2016	8,655	1,949	554	8,655	1,949	554
2015	11,467	1,745	454	19,035	6,305	3,309
2014	1,965	1,237	369	4,976	1,242	369
2013	5,566	641	153	8,029	757	154

Customers with multiple qualifying duration outages can be counted more than once in one or more buckets

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HISTORICAL MED'S

MED Date	Main Driver	Customer Interruptions	Customer Minutes	CAIDI(Mins)	90% of Cust Restored	All Restored
02/26/23	Heavy Wind	26,009	6,082,485	234	2/27/23 7:41 PM	2/27/23 10:30 PM
11/25/22	Snow/Ice/Sleet	2,632	1,240,304	471	11/26/22 2:58 PM	11/27/22 12:53 PM
08/21/21	Wind/Lightning/Storm	2,612	861,679	330	8/22/21 1:16 AM	8/22/21 6:45 PM
02/16/21	Cold/Snow/Ice/Load Relief	75,319	6,845,015	91	2/16/21 10:16 AM	2/17/21 1:01 AM
07/09/20	Heat/Overloading	10,387	909,857	88	7/9/20 6:03 PM	7/9/20 9:40 PM
03/14/19	Wind/Lightning/Storm	4,834	1,105,620	229	3/14/19 8:20 PM	3/15/19 4:10 PM
03/13/19	Wind/Tornado/Lightning/Storm	26,673	12,962,187	486	3/14/19 11:38 AM	3/15/19 5:05 PM
03/12/19	Wind/Tornado/Lightning/Storm	5,415	1,520,802	281	3/13/19 12:46 AM	3/15/19 3:54 PM
12/27/15	Snow/Cold/Ice/Wind	7,524	2,782,651	370	12/27/15 9:30 PM	12/30/15 11:30 AM
12/26/15	Snow/Cold/Ice/Wind	7,131	3,654,631	512	12/27/15 5:47 PM	12/29/15 10:49 AM
08/16/15	Wind/Lightning/Storm	6,664	803,661	121	8/16/15 10:17 AM	8/16/15 9:00 PM
11/04/14	Wind/Lightning/Storm	3,519	757,104	215	11/4/14 4:09 AM	11/4/14 7:00 PM
12/07/13	Cold/Overloading	5,298	855,867	162	12/7/13 9:14 PM	12/8/13 12:50 AM
11/12/13	Cold/Wind/Transmission	20,261	905,404	45	11/12/13 11:05 AM	11/12/13 10:12 PM
06/17/13	Wind/Lightning/Storm	14,804	1,503,564	102	6/17/13 9:01 PM	6/18/13 8:45 AM
06/09/13	Public Damage/Transmission	3,811	1,000,387	262	6/9/13 2:07 PM	6/10/13 10:40 AM
02/21/13	Wind/Snow/Transmission	3,926	909,252	232	2/21/13 4:57 AM	2/21/13 9:45 AM

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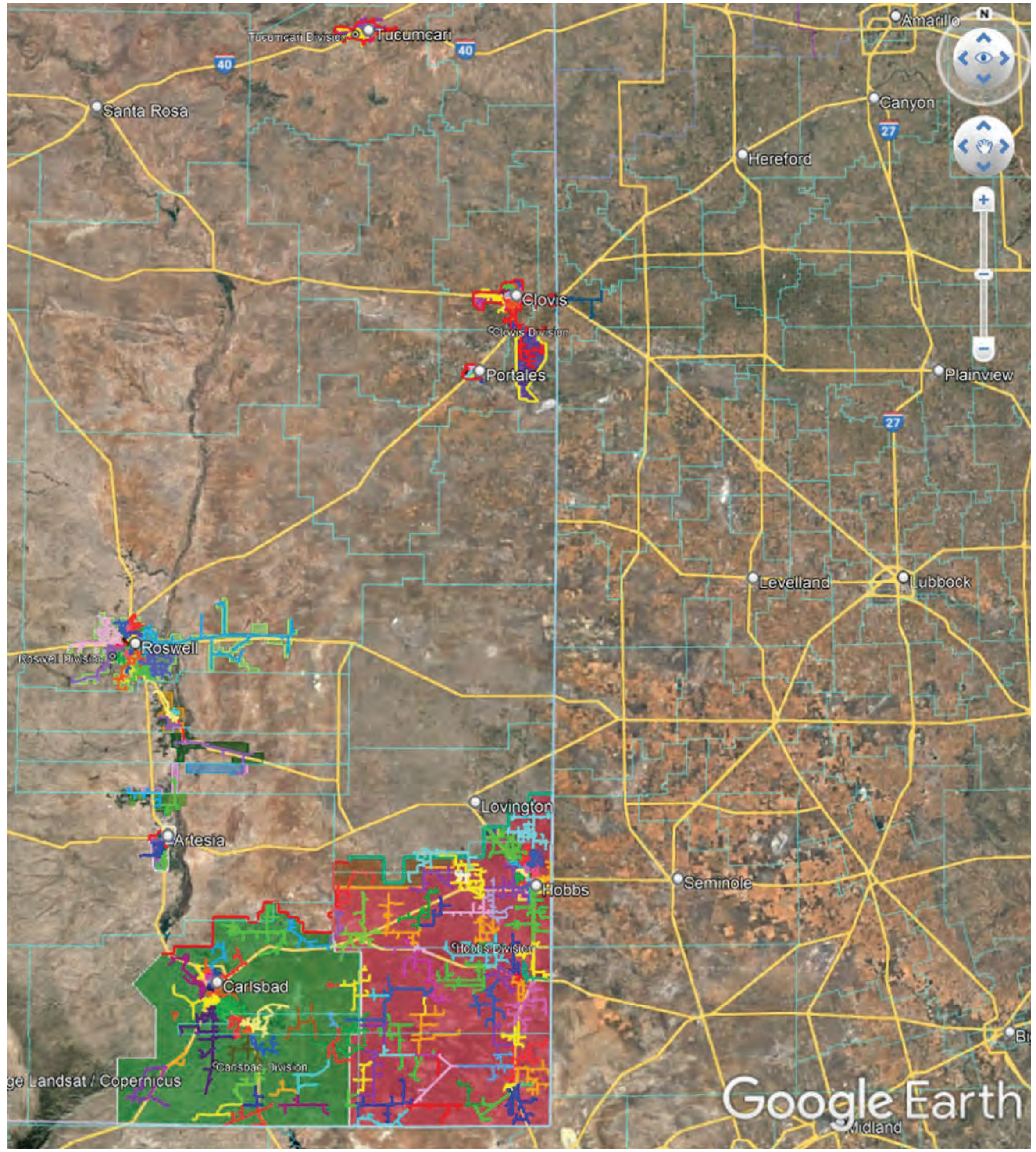
Tucumcari
Tucumcari Division
Santa Rosa
Amarillo
Canyon
Hereford
Clovis
Clovis Division
Portales
Plainview
Levelland
Lubbock
Roswell
Roswell Division
Artesia
Lovington
Hobbs
Hobbs Division
Seminole
Carlsbad
Carlsbad Division
Midland
Landsat / Copernicus
Google Earth

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10 WORST PERFORMING CIRCUITS/FEEDERS

Table 4. Ten Worst Performing Feeders/Circuits
(IEEE State Normalized-Distribution Lines Only (Feeder and Below))

2023 YTD Apr					2022 YTD Apr					2021 YTD Apr				
FEEDER	Location Type	SAIDI	Customer Minutes	Customers at Year End	Feeder	Location Type	SAIDI	Customer Minutes	Customers at Year End	Feeder	Location Type	SAIDI	Customer Minutes	Customers at Year End
LEAN1730	Rural Lea County.	2,026.7	79,042	39	SAGE4525	Rural Lea County.	2,050.4	287,062	140	OCOT3435	Urban - Carlsbad, NM.	3,215.5	993,599	309
EUNI4B85	Rural Lea County.	977.3	108,475	111	OCHO2020	Rural Lea County.	1,716.3	389,595	227	BUCK2620	Rural Lea County.	2,526.6	192,021	76
OCHO2010	Rural Lea County.	750.1	138,024	184	POND3570	Rural Lea County.	1,561.3	107,730	69	CUNNWTR	Rural Lea County.	2,002.6	2,003	1
EUNI4B100	Rural Lea County.	700.2	161,057	230	LEAN1720	Rural Lea County.	1,319.9	166,302	126	LEAR1420N	Rural Lea County.	1,504.6	136,915	91
JAL1940	Rural Lea County.	497.0	58,147	117	WHIC4246	Rural Eddy County.	1,295.1	66,050	51	ESAN2920	Suburban - Hobbs, NM.	1,051.4	561,772	496
COOR3160	Rural Lea County.	488.4	59,091	121	PWTR3090	Rural Curry and Roosevelt Counties.	1,280.2	156,189	122	LEAN1720	Rural Lea County.	921.4	178,762	159
LEAN1720	Rural Lea County.	412.6	51,982	126	MDNS3E15	Rural Lea and Eddy Counties.	1,235.5	1,236	1	BATX3470	Rural Lea County.	886.5	176,285	160
SAGE4520	Rural Lea County.	342.2	11,635	34	CHDW3C60	Rural Eddy County.	1,215.2	153,119	126	MONU1310	Rural Lea County.	873.7	112,850	121
JAL1950	Rural Lea County.	289.4	26,043	90	UNSA4380	Rural Eddy County.	1,196.5	20,341	17	POND3565	Rural Lea County.	844.1	105,962	115
OCHO2020	Rural Lea County.	264.4	56,313	213	PEAR4D35	Rural Lea County.	1,088.6	47,898	44	FIES4B20	Urban - Carlsbad, NM.	828.6	108,152	122

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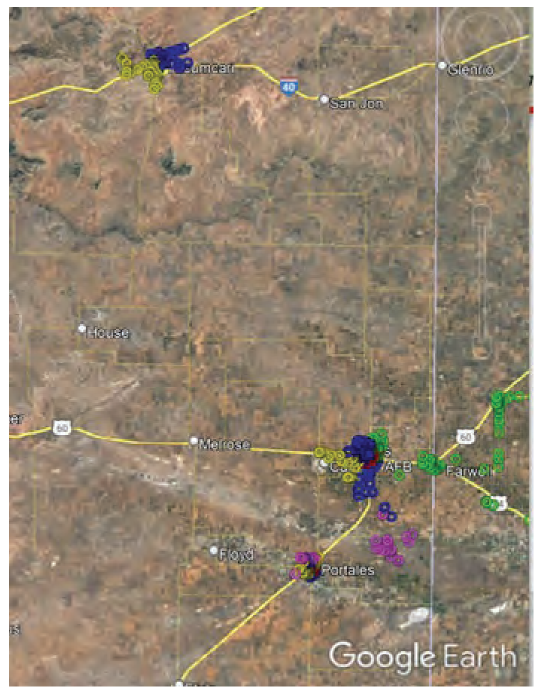
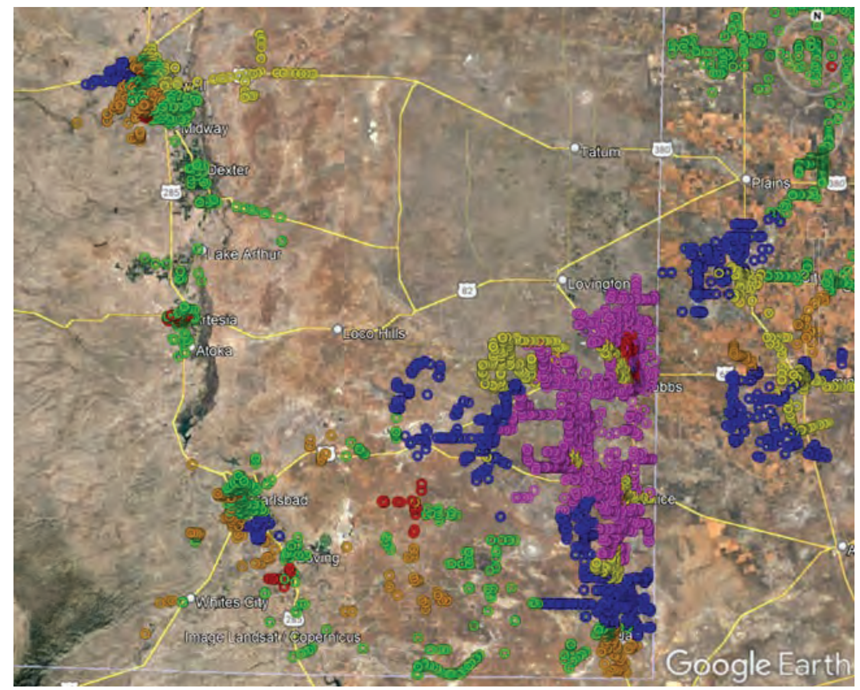
Reliability Programs

- Patrol work orders generated for all breaker level momentary outages.
  - Tracked to ensure responses.
- Feeder Performance Improvement Program (FPIP)
- Reliability Exception Monitoring (REMS)
- Customers Experiencing Multiple Interruptions (CEMI)
- Proactive Line Patrols / Asset Health
  - Two year rotation for feeders
  - All taps on a 2-4 year rotation
  - Individual work order and prioritization for all deficiencies (arresters, crossarms, guys, etc)
  - Completion of corrective action is KPI for SPS Distribution
  - Allow service personnel to suggest upgrades (additional fusing, etc)
- Pole Inspect, Treat, Replace Program
- Pilot tests of new equipment
  - Single phase electronic reclosers
  - Cellular SCADA to field equipment

Asset Health

- From 2020 through 2022, SPS has:
  - Completed approximately 130 circuit patrols in New Mexico
  - Identified approximately 1950 corrective actions to be addressed
  - Completed approximately 2178 corrective actions (including carryover from 2019)





POLE INSPECT, TREAT, REPLACE

- SPS will continue to assess and treat approximately 40,000 poles per year with the intention of remaining on a 12-yr cycle.
- 2020
  - Replaced 4,331 poles
  - 648 poles replaced in NM
- 2021
  - Replaced 4,002 poles total
  - 514 poles replaced in NM
- 2022
  - Replaced approximately 1794 poles
  - 487 poles replaced in NM

FUTURE ADMS

- A multi-year effort to design and plan for an Advanced Distribution Management System (ADMS) that will provide an integrated operation and decision support system to assist control room, field personnel, and engineering with the monitoring, control and optimization of the electric distribution system.
- When implemented, it will manage the complex interaction of outage events, feeder switching operations and advanced applications such as Fault Location Isolation and Service Restoration (FLISR).

Distribution O&M Expenditures, Capital Investments

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
US Inflation rates (avg annualized)	1.50%	1.60%	0.10%	1.30%	2.10%	2.40%	1.80%	1.20%	4.70%	8.00%
NM Distribution O&M (actual values)	$ 9,411,602	$ 11,644,461	$ 12,742,723	$ 10,077,165	$ 11,632,336	$ 12,538,060	$ 13,322,533	$ 11,859,654	$ 10,197,796	$ 10,859,263
NM Distribution Capital (actual values)						$ 29,753,213	$ 64,039,442	$ 87,425,586	$ 73,984,477	$ 71,919,181
NM Distribution Capital Asset Health and Reliability (actual)						$ 6,949,137	$ 20,321,825	$ 14,115,290	$ 15,642,643	$ 21,350,165
NM Distribution O&M (inflation adjusted)	$ 11,986,469	$ 14,611,037	$ 15,737,299	$ 12,432,894	$ 14,167,439	$ 14,956,467	$ 15,519,779	$ 13,571,347	$ 11,531,260	$ 11,728,004
NM Distribution Capital (inflation adjusted)*						$ 35,492,170	$ 74,601,278	$ 100,043,644	$ 83,658,687	$ 77,672,715
NM Distribution Capital Asset Health and Reliability (inflation adjusted)						$ 8,289,523	$ 23,673,444	$ 16,152,537	$ 17,688,075	$ 23,058,178
NM Retail MWh Sales (MWh)	4802831	4987260	5074881	5252796	5441880	6152641	6940402	7241787	7754184	8894635
NM Line-miles (miles)	3918	4028	4173	4290	4368	4419	4527	4698	4891	5006
NM Retail-customers (count)	98318	103537	106941	107493	108326	110488	111966	114003	116613	117660
Inflation adjusted O&M per MWh	$ 2.50	$ 2.93	$ 3.10	$ 2.37	$ 2.60	$ 2.43	$ 2.24	$ 1.87	$ 1.49	$ 1.32
Inflation adjusted O&M per line-mile	$ 3,059.33	$ 3,627.37	$ 3,771.22	$ 2,898.11	$ 3,243.46	$ 3,384.58	$ 3,428.27	$ 2,888.75	$ 2,357.65	$ 2,342.79
Inflation adjusted O&M per retail customer	$ 121.92	$ 141.12	$ 147.16	$ 115.66	$ 130.79	$ 135.37	$ 138.61	$ 119.04	$ 98.88	$ 99.68
Inflation adjusted Capital per MWh	$ -	$ -	$ -	$ -	$ -	$ 5.77	$ 10.75	$ 13.81	$ 10.79	$ 8.73
Inflation adjusted Capital per line-mile	$ -	$ -	$ -	$ -	$ -	$ 8,031.72	$ 16,479.19	$ 21,294.94	$ 17,104.62	$ 15,515.92
Inflation adjusted Capital per retail customer	$ -	$ -	$ -	$ -	$ -	$ 321.23	$ 666.29	$ 877.55	$ 717.40	$ 660.15

*No Capital information was readily available for years 2013-2017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TimeSeries	ItemIndex	EffectiveDate	EndingDate	Value
Gas.Natural.Generic.Cost	1	5/1/2023	5/31/2023	1.34
Gas.Natural.Generic.Cost	2	6/1/2023	6/30/2023	1.39
Gas.Natural.Generic.Cost	3	7/1/2023	7/31/2023	1.39
Gas.Natural.Generic.Cost	4	8/1/2023	8/31/2023	1.55
Gas.Natural.Generic.Cost	5	9/1/2023	9/30/2023	1.78
Gas.Natural.Generic.Cost	6	10/1/2023	10/31/2023	1.79
Gas.Natural.Generic.Cost	7	11/1/2023	11/30/2023	2.18
Gas.Natural.Generic.Cost	8	12/1/2023	12/31/2023	2.43
Gas.Natural.Generic.Cost	9	1/1/2024	1/31/2024	2.89
Gas.Natural.Generic.Cost	10	2/1/2024	2/29/2024	3.07
Gas.Natural.Generic.Cost	11	3/1/2024	3/31/2024	2.9
Gas.Natural.Generic.Cost	12	4/1/2024	4/30/2024	2.59
Gas.Natural.Generic.Cost	13	5/1/2024	5/31/2024	2.26
Gas.Natural.Generic.Cost	14	6/1/2024	6/30/2024	2.18
Gas.Natural.Generic.Cost	15	7/1/2024	7/31/2024	2.39
Gas.Natural.Generic.Cost	16	8/1/2024	8/31/2024	2.52
Gas.Natural.Generic.Cost	17	9/1/2024	9/30/2024	2.62
Gas.Natural.Generic.Cost	18	10/1/2024	10/31/2024	2.62
Gas.Natural.Generic.Cost	19	11/1/2024	11/30/2024	2.76
Gas.Natural.Generic.Cost	20	12/1/2024	12/31/2024	3.25
Gas.Natural.Generic.Cost	21	1/1/2025	1/31/2025	3.64
Gas.Natural.Generic.Cost	22	2/1/2025	2/28/2025	3.99
Gas.Natural.Generic.Cost	23	3/1/2025	3/31/2025	3.8
Gas.Natural.Generic.Cost	24	4/1/2025	4/30/2025	3.5
Gas.Natural.Generic.Cost	25	5/1/2025	5/31/2025	3.21
Gas.Natural.Generic.Cost	26	6/1/2025	6/30/2025	3.05
Gas.Natural.Generic.Cost	27	7/1/2025	7/31/2025	3.14
Gas.Natural.Generic.Cost	28	8/1/2025	8/31/2025	3.21
Gas.Natural.Generic.Cost	29	9/1/2025	9/30/2025	3.23
Gas.Natural.Generic.Cost	30	10/1/2025	10/31/2025	3.26
Gas.Natural.Generic.Cost	31	11/1/2025	11/30/2025	3.35
Gas.Natural.Generic.Cost	32	12/1/2025	12/31/2025	3.58
Gas.Natural.Generic.Cost	33	1/1/2026	1/31/2026	3.54
Gas.Natural.Generic.Cost	34	2/1/2026	2/28/2026	3.65
Gas.Natural.Generic.Cost	35	3/1/2026	3/31/2026	3.37
Gas.Natural.Generic.Cost	36	4/1/2026	4/30/2026	3.13
Gas.Natural.Generic.Cost	37	5/1/2026	5/31/2026	3.04
Gas.Natural.Generic.Cost	38	6/1/2026	6/30/2026	2.95
Gas.Natural.Generic.Cost	39	7/1/2026	7/31/2026	2.96
Gas.Natural.Generic.Cost	40	8/1/2026	8/31/2026	2.99
Gas.Natural.Generic.Cost	41	9/1/2026	9/30/2026	2.99
Gas.Natural.Generic.Cost	42	10/1/2026	10/31/2026	3.01
Gas.Natural.Generic.Cost	43	11/1/2026	11/30/2026	3.23
Gas.Natural.Generic.Cost	44	12/1/2026	12/31/2026	3.37
Gas.Natural.Generic.Cost	45	1/1/2027	1/31/2027	3.66
Gas.Natural.Generic.Cost	46	2/1/2027	2/28/2027	3.71

Gas.Natural.Generic.Cost	47	3/1/2027	3/31/2027	3.66
Gas.Natural.Generic.Cost	48	4/1/2027	4/30/2027	3.42
Gas.Natural.Generic.Cost	49	5/1/2027	5/31/2027	3.37
Gas.Natural.Generic.Cost	50	6/1/2027	6/30/2027	3.25
Gas.Natural.Generic.Cost	51	7/1/2027	7/31/2027	3.33
Gas.Natural.Generic.Cost	52	8/1/2027	8/31/2027	3.38
Gas.Natural.Generic.Cost	53	9/1/2027	9/30/2027	3.36
Gas.Natural.Generic.Cost	54	10/1/2027	10/31/2027	3.34
Gas.Natural.Generic.Cost	55	11/1/2027	11/30/2027	3.74
Gas.Natural.Generic.Cost	56	12/1/2027	12/31/2027	3.81
Gas.Natural.Generic.Cost	57	1/1/2028	1/31/2028	4.18
Gas.Natural.Generic.Cost	58	2/1/2028	2/29/2028	4.2
Gas.Natural.Generic.Cost	59	3/1/2028	3/31/2028	4.05
Gas.Natural.Generic.Cost	60	4/1/2028	4/30/2028	3.83
Gas.Natural.Generic.Cost	61	5/1/2028	5/31/2028	3.65
Gas.Natural.Generic.Cost	62	6/1/2028	6/30/2028	3.52
Gas.Natural.Generic.Cost	63	7/1/2028	7/31/2028	3.54
Gas.Natural.Generic.Cost	64	8/1/2028	8/31/2028	3.58
Gas.Natural.Generic.Cost	65	9/1/2028	9/30/2028	3.57
Gas.Natural.Generic.Cost	66	10/1/2028	10/31/2028	3.59
Gas.Natural.Generic.Cost	67	11/1/2028	11/30/2028	3.66
Gas.Natural.Generic.Cost	68	12/1/2028	12/31/2028	3.78
Gas.Natural.Generic.Cost	69	1/1/2029	1/31/2029	3.95
Gas.Natural.Generic.Cost	70	2/1/2029	2/28/2029	4.03
Gas.Natural.Generic.Cost	71	3/1/2029	3/31/2029	3.92
Gas.Natural.Generic.Cost	72	4/1/2029	4/30/2029	3.72
Gas.Natural.Generic.Cost	73	5/1/2029	5/31/2029	3.54
Gas.Natural.Generic.Cost	74	6/1/2029	6/30/2029	3.42
Gas.Natural.Generic.Cost	75	7/1/2029	7/31/2029	3.44
Gas.Natural.Generic.Cost	76	8/1/2029	8/31/2029	3.48
Gas.Natural.Generic.Cost	77	9/1/2029	9/30/2029	3.49
Gas.Natural.Generic.Cost	78	10/1/2029	10/31/2029	3.52
Gas.Natural.Generic.Cost	79	11/1/2029	11/30/2029	3.67
Gas.Natural.Generic.Cost	80	12/1/2029	12/31/2029	3.77
Gas.Natural.Generic.Cost	81	1/1/2030	1/31/2030	3.94
Gas.Natural.Generic.Cost	82	2/1/2030	2/28/2030	3.98
Gas.Natural.Generic.Cost	83	3/1/2030	3/31/2030	3.89
Gas.Natural.Generic.Cost	84	4/1/2030	4/30/2030	3.71
Gas.Natural.Generic.Cost	85	5/1/2030	5/31/2030	3.58
Gas.Natural.Generic.Cost	86	6/1/2030	6/30/2030	3.47
Gas.Natural.Generic.Cost	87	7/1/2030	7/31/2030	3.49
Gas.Natural.Generic.Cost	88	8/1/2030	8/31/2030	3.53
Gas.Natural.Generic.Cost	89	9/1/2030	9/30/2030	3.54
Gas.Natural.Generic.Cost	90	10/1/2030	10/31/2030	3.57
Gas.Natural.Generic.Cost	91	11/1/2030	11/30/2030	3.67
Gas.Natural.Generic.Cost	92	12/1/2030	12/31/2030	3.76
Gas.Natural.Generic.Cost	93	1/1/2031	1/31/2031	3.93

Gas.Natural.Generic.Cost	94	2/1/2031	2/28/2031	3.98
Gas.Natural.Generic.Cost	95	3/1/2031	3/31/2031	3.88
Gas.Natural.Generic.Cost	96	4/1/2031	4/30/2031	3.71
Gas.Natural.Generic.Cost	97	5/1/2031	5/31/2031	3.67
Gas.Natural.Generic.Cost	98	6/1/2031	6/30/2031	3.59
Gas.Natural.Generic.Cost	99	7/1/2031	7/31/2031	3.7
Gas.Natural.Generic.Cost	100	8/1/2031	8/31/2031	3.71
Gas.Natural.Generic.Cost	101	9/1/2031	9/30/2031	3.66
Gas.Natural.Generic.Cost	102	10/1/2031	10/31/2031	3.65
Gas.Natural.Generic.Cost	103	11/1/2031	11/30/2031	3.72
Gas.Natural.Generic.Cost	104	12/1/2031	12/31/2031	3.8
Gas.Natural.Generic.Cost	105	1/1/2032	1/31/2032	4.01
Gas.Natural.Generic.Cost	106	2/1/2032	2/29/2032	4.02
Gas.Natural.Generic.Cost	107	3/1/2032	3/31/2032	3.98
Gas.Natural.Generic.Cost	108	4/1/2032	4/30/2032	3.78
Gas.Natural.Generic.Cost	109	5/1/2032	5/31/2032	3.72
Gas.Natural.Generic.Cost	110	6/1/2032	6/30/2032	3.63
Gas.Natural.Generic.Cost	111	7/1/2032	7/31/2032	3.69
Gas.Natural.Generic.Cost	112	8/1/2032	8/31/2032	3.72
Gas.Natural.Generic.Cost	113	9/1/2032	9/30/2032	3.67
Gas.Natural.Generic.Cost	114	10/1/2032	10/31/2032	3.69
Gas.Natural.Generic.Cost	115	11/1/2032	11/30/2032	3.79
Gas.Natural.Generic.Cost	116	12/1/2032	12/31/2032	3.87
Gas.Natural.Generic.Cost	117	1/1/2033	1/31/2033	4.1
Gas.Natural.Generic.Cost	118	2/1/2033	2/28/2033	4.13
Gas.Natural.Generic.Cost	119	3/1/2033	3/31/2033	4.06
Gas.Natural.Generic.Cost	120	4/1/2033	4/30/2033	3.89
Gas.Natural.Generic.Cost	121	5/1/2033	5/31/2033	3.75
Gas.Natural.Generic.Cost	122	6/1/2033	6/30/2033	3.66
Gas.Natural.Generic.Cost	123	7/1/2033	7/31/2033	3.7
Gas.Natural.Generic.Cost	124	8/1/2033	8/31/2033	3.73
Gas.Natural.Generic.Cost	125	9/1/2033	9/30/2033	3.75
Gas.Natural.Generic.Cost	126	10/1/2033	10/31/2033	3.78
Gas.Natural.Generic.Cost	127	11/1/2033	11/30/2033	3.91
Gas.Natural.Generic.Cost	128	12/1/2033	12/31/2033	4.01
Gas.Natural.Generic.Cost	129	1/1/2034	1/31/2034	4.24
Gas.Natural.Generic.Cost	130	2/1/2034	2/28/2034	4.26
Gas.Natural.Generic.Cost	131	3/1/2034	3/31/2034	4.23
Gas.Natural.Generic.Cost	132	4/1/2034	4/30/2034	4.02
Gas.Natural.Generic.Cost	133	5/1/2034	5/31/2034	3.91
Gas.Natural.Generic.Cost	134	6/1/2034	6/30/2034	3.8
Gas.Natural.Generic.Cost	135	7/1/2034	7/31/2034	3.83
Gas.Natural.Generic.Cost	136	8/1/2034	8/31/2034	3.85
Gas.Natural.Generic.Cost	137	9/1/2034	9/30/2034	3.88
Gas.Natural.Generic.Cost	138	10/1/2034	10/31/2034	3.91
Gas.Natural.Generic.Cost	139	11/1/2034	11/30/2034	4.03
Gas.Natural.Generic.Cost	140	12/1/2034	12/31/2034	4.12

Gas.Natural.Generic.Cost	141	1/1/2035	1/31/2035	4.36
Gas.Natural.Generic.Cost	142	2/1/2035	2/28/2035	4.39
Gas.Natural.Generic.Cost	143	3/1/2035	3/31/2035	4.36
Gas.Natural.Generic.Cost	144	4/1/2035	4/30/2035	4.19
Gas.Natural.Generic.Cost	145	5/1/2035	5/31/2035	4.05
Gas.Natural.Generic.Cost	146	6/1/2035	6/30/2035	3.98
Gas.Natural.Generic.Cost	147	7/1/2035	7/31/2035	4
Gas.Natural.Generic.Cost	148	8/1/2035	8/31/2035	4.04
Gas.Natural.Generic.Cost	149	9/1/2035	9/30/2035	4.06
Gas.Natural.Generic.Cost	150	10/1/2035	10/31/2035	4.09
Gas.Natural.Generic.Cost	151	11/1/2035	11/30/2035	4.21
Gas.Natural.Generic.Cost	152	12/1/2035	12/31/2035	4.29
Gas.Natural.Generic.Cost	153	1/1/2036	1/31/2036	4.55
Gas.Natural.Generic.Cost	154	2/1/2036	2/29/2036	4.55
Gas.Natural.Generic.Cost	155	3/1/2036	3/31/2036	4.49
Gas.Natural.Generic.Cost	156	4/1/2036	4/30/2036	4.31
Gas.Natural.Generic.Cost	157	5/1/2036	5/31/2036	4.14
Gas.Natural.Generic.Cost	158	6/1/2036	6/30/2036	4.04
Gas.Natural.Generic.Cost	159	7/1/2036	7/31/2036	4.07
Gas.Natural.Generic.Cost	160	8/1/2036	8/31/2036	4.1
Gas.Natural.Generic.Cost	161	9/1/2036	9/30/2036	4.14
Gas.Natural.Generic.Cost	162	10/1/2036	10/31/2036	4.17
Gas.Natural.Generic.Cost	163	11/1/2036	11/30/2036	4.32
Gas.Natural.Generic.Cost	164	12/1/2036	12/31/2036	4.4
Gas.Natural.Generic.Cost	165	1/1/2037	1/31/2037	4.66
Gas.Natural.Generic.Cost	166	2/1/2037	2/28/2037	4.68
Gas.Natural.Generic.Cost	167	3/1/2037	3/31/2037	4.63
Gas.Natural.Generic.Cost	168	4/1/2037	4/30/2037	4.44
Gas.Natural.Generic.Cost	169	5/1/2037	5/31/2037	4.29
Gas.Natural.Generic.Cost	170	6/1/2037	6/30/2037	4.19
Gas.Natural.Generic.Cost	171	7/1/2037	7/31/2037	4.2
Gas.Natural.Generic.Cost	172	8/1/2037	8/31/2037	4.25
Gas.Natural.Generic.Cost	173	9/1/2037	9/30/2037	4.27
Gas.Natural.Generic.Cost	174	10/1/2037	10/31/2037	4.31
Gas.Natural.Generic.Cost	175	11/1/2037	11/30/2037	4.46
Gas.Natural.Generic.Cost	176	12/1/2037	12/31/2037	4.55
Gas.Natural.Generic.Cost	177	1/1/2038	1/31/2038	4.8
Gas.Natural.Generic.Cost	178	2/1/2038	2/28/2038	4.82
Gas.Natural.Generic.Cost	179	3/1/2038	3/31/2038	4.76
Gas.Natural.Generic.Cost	180	4/1/2038	4/30/2038	4.58
Gas.Natural.Generic.Cost	181	5/1/2038	5/31/2038	4.43
Gas.Natural.Generic.Cost	182	6/1/2038	6/30/2038	4.33
Gas.Natural.Generic.Cost	183	7/1/2038	7/31/2038	4.35
Gas.Natural.Generic.Cost	184	8/1/2038	8/31/2038	4.42
Gas.Natural.Generic.Cost	185	9/1/2038	9/30/2038	4.43
Gas.Natural.Generic.Cost	186	10/1/2038	10/31/2038	4.49
Gas.Natural.Generic.Cost	187	11/1/2038	11/30/2038	4.62

Gas.Natural.Generic.Cost	188	12/1/2038	12/31/2038	4.73
Gas.Natural.Generic.Cost	189	1/1/2039	1/31/2039	4.96
Gas.Natural.Generic.Cost	190	2/1/2039	2/28/2039	5.01
Gas.Natural.Generic.Cost	191	3/1/2039	3/31/2039	4.93
Gas.Natural.Generic.Cost	192	4/1/2039	4/30/2039	4.8
Gas.Natural.Generic.Cost	193	5/1/2039	5/31/2039	4.74
Gas.Natural.Generic.Cost	194	6/1/2039	6/30/2039	4.64
Gas.Natural.Generic.Cost	195	7/1/2039	7/31/2039	4.77
Gas.Natural.Generic.Cost	196	8/1/2039	8/31/2039	4.86
Gas.Natural.Generic.Cost	197	9/1/2039	9/30/2039	4.81
Gas.Natural.Generic.Cost	198	10/1/2039	10/31/2039	4.88
Gas.Natural.Generic.Cost	199	11/1/2039	11/30/2039	4.96
Gas.Natural.Generic.Cost	200	12/1/2039	12/31/2039	5.08
Gas.Natural.Generic.Cost	201	1/1/2040	1/31/2040	5.3
Gas.Natural.Generic.Cost	202	2/1/2040	2/29/2040	5.4
Gas.Natural.Generic.Cost	203	3/1/2040	3/31/2040	5.26
Gas.Natural.Generic.Cost	204	4/1/2040	4/30/2040	5.25
Gas.Natural.Generic.Cost	205	5/1/2040	5/31/2040	5.07
Gas.Natural.Generic.Cost	206	6/1/2040	6/30/2040	5.02
Gas.Natural.Generic.Cost	207	7/1/2040	7/31/2040	5.11
Gas.Natural.Generic.Cost	208	8/1/2040	8/31/2040	5.2
Gas.Natural.Generic.Cost	209	9/1/2040	9/30/2040	5.16
Gas.Natural.Generic.Cost	210	10/1/2040	10/31/2040	5.3
Gas.Natural.Generic.Cost	211	11/1/2040	11/30/2040	5.4
Gas.Natural.Generic.Cost	212	12/1/2040	12/31/2040	5.6
Gas.Natural.Generic.Cost	213	1/1/2041	1/31/2041	5.82
Gas.Natural.Generic.Cost	214	2/1/2041	2/28/2041	5.89
Gas.Natural.Generic.Cost	215	3/1/2041	3/31/2041	5.78
Gas.Natural.Generic.Cost	216	4/1/2041	4/30/2041	5.54
Gas.Natural.Generic.Cost	217	5/1/2041	5/31/2041	5.41
Gas.Natural.Generic.Cost	218	6/1/2041	6/30/2041	5.27
Gas.Natural.Generic.Cost	219	7/1/2041	7/31/2041	5.35
Gas.Natural.Generic.Cost	220	8/1/2041	8/31/2041	5.43
Gas.Natural.Generic.Cost	221	9/1/2041	9/30/2041	5.4
Gas.Natural.Generic.Cost	222	10/1/2041	10/31/2041	5.54
Gas.Natural.Generic.Cost	223	11/1/2041	11/30/2041	5.66
Gas.Natural.Generic.Cost	224	12/1/2041	12/31/2041	5.84
Gas.Natural.Generic.Cost	225	1/1/2042	1/31/2042	6.08
Gas.Natural.Generic.Cost	226	2/1/2042	2/28/2042	6.15
Gas.Natural.Generic.Cost	227	3/1/2042	3/31/2042	5.98
Gas.Natural.Generic.Cost	228	4/1/2042	4/30/2042	5.76
Gas.Natural.Generic.Cost	229	5/1/2042	5/31/2042	5.58
Gas.Natural.Generic.Cost	230	6/1/2042	6/30/2042	5.46
Gas.Natural.Generic.Cost	231	7/1/2042	7/31/2042	5.53
Gas.Natural.Generic.Cost	232	8/1/2042	8/31/2042	5.62
Gas.Natural.Generic.Cost	233	9/1/2042	9/30/2042	5.58
Gas.Natural.Generic.Cost	234	10/1/2042	10/31/2042	5.73

Gas.Natural.Generic.Cost	235	11/1/2042	11/30/2042	5.81
Gas.Natural.Generic.Cost	236	12/1/2042	12/31/2042	6.05
Gas.Natural.Generic.Cost	237	1/1/2043	1/31/2043	6.29
Gas.Natural.Generic.Cost	238	2/1/2043	2/28/2043	6.39
Gas.Natural.Generic.Cost	239	3/1/2043	3/31/2043	6.26
Gas.Natural.Generic.Cost	240	4/1/2043	4/30/2043	6.02
Gas.Natural.Generic.Cost	241	5/1/2043	5/31/2043	5.84
Gas.Natural.Generic.Cost	242	6/1/2043	6/30/2043	5.72
Gas.Natural.Generic.Cost	243	7/1/2043	7/31/2043	5.79
Gas.Natural.Generic.Cost	244	8/1/2043	8/31/2043	5.88
Gas.Natural.Generic.Cost	245	9/1/2043	9/30/2043	5.84
Gas.Natural.Generic.Cost	246	10/1/2043	10/31/2043	5.99
Gas.Natural.Generic.Cost	247	11/1/2043	11/30/2043	6.14
Gas.Natural.Generic.Cost	248	12/1/2043	12/31/2043	6.31

TimeSeries	ItemIndex	EffectiveDate	EndingDate	Interval:1	Interval:2	Interval:3	Interval:4	Interval:5	Interval:6	Interval:7	Interval:8	Interval:9	Interval:10	Interval:11	Interval:12	Interval:13	Interval:14	Interval:15	Interval:16	Interval:17	Interval:18	Interval:19	Interval:20	Interval:21	Interval:22	Interval:23	Interval:24
SPP South - Energy Price - 1H2023	1	1/1/2023	1/1/2023	16.66	27.67	39.92	17	23.94	23.37	33.41	51.28	51.28	5.9	4.88	4.84	3.84	-14.12	-13.75	4.34	14.21	51.28	51.28	51.28	51.28	51.28	39.92	39.92
SPP South - Energy Price - 1H2023	2	1/2/2023	1/2/2023	35.44	39.92	39.92	39.92	39.92	39.92	54.3	57.03	55.11	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.89	55.06	58.47	54.3	62.54	54.3	43.97	39.92
SPP South - Energy Price - 1H2023	3	1/3/2023	1/3/2023	37.55	37.55	41.68	41.68	41.68	42.82	59.35	59.97	59.98	59.98	59.97	59.36	59.36	59.36	59.36	59.36	56.14	57.13	56.93	52.32	52.32	52.32	37.55	40.82
SPP South - Energy Price - 1H2023	4	1/4/2023	1/4/2023	36.7	36.7	36.7	36.7	36.7	36.7	54.36	54.36	54.36	50.51	50.51	50.51	50.51	52.32	52.32	52.32	53.55	55.68	54.72	54.36	54.36	52.32	41.82	37.27
SPP South - Energy Price - 1H2023	5	1/5/2023	1/5/2023	36.26	36.26	36.26	36.26	40.22	40.22	52.32	52.32	49.99	49.99	49.99	49.99	49.99	52.32	54.36	52.32	53.44	56.51	57.62	57.62	56.93	54.36	41.31	41.31
SPP South - Energy Price - 1H2023	6	1/6/2023	1/6/2023	46.99	42.67	45.22	45.52	45.22	45.22	57.55	66.25	57.55	57.55	57.55	57.55	54.36	56	57.55	57.55	57.55	57.55	57.55	54.36	52.32	52.32	42.67	28.62
SPP South - Energy Price - 1H2023	7	1/7/2023	1/7/2023	42.67	19.18	42.67	7.36	28.1	42.67	54.81	54.81	60.36	59.14	59.14	58.09	58.09	58.09	60.36	58.09	58.09	60.36	60.36	60.36	60.36	58.09	44.91	42.67
SPP South - Energy Price - 1H2023	8	1/8/2023	1/8/2023	23.38	30.69	42.67	17	30.13	30.69	54.81	54.81	54.81	33.63	20.13	15.87	16.47	3.63	3.34	23.42	54.81	54.81	54.81	54.81	54.81	54.81	42.67	42.67
SPP South - Energy Price - 1H2023	9	1/9/2023	1/9/2023	38.3	38.3	38.3	27.95	28.1	38.3	52.39	52.39	54.36	52.39	52.39	52.39	52.39	52.32	52.32	52.32	46.68	52.32	52.39	52.39	52.39	52.39	38.3	41.68
SPP South - Energy Price - 1H2023	10	1/10/2023	1/10/2023	38.35	37.55	37.55	41.68	37.55	41.68	59.35	59.36	57.3	54.36	51.51	55.11	54.36	54.63	56.14	54.57	59.35	59.36	59.98	59.97	59.97	59.97	45.22	42.82
SPP South - Energy Price - 1H2023	11	1/11/2023	1/11/2023	41.82	41.82	41.82	41.82	41.82	41.82	58.21	57.64	57.56	57.46	58.21	55.04	52.32	52.32	52.32	54.36	52.32	54.84	57.43	57.12	54.94	52.32	40.72	40.72
SPP South - Energy Price - 1H2023	12	1/12/2023	1/12/2023	40.22	40.22	40.22	40.22	40.22	40.22	55.82	57.54	55.05	51.58	52.32	52.32	52.32	52.32	52.32	52.32	52.32	55.28	57.62	57.62	55.82	55.82	40.22	41.31
SPP South - Energy Price - 1H2023	13	1/13/2023	1/13/2023	37.76	37.76	37.76	37.76	37.76	41.64	53.99	57.25	57.24	54.98	53.99	53.98	53.55	53.55	53.55	53.55	53.55	53.55	53.55	53.55	53.55	52.32	37.76	34.74
SPP South - Energy Price - 1H2023	14	1/14/2023	1/14/2023	33.24	36.03	33.24	36.79	36.76	37.76	48.5	48.5	48.5	48.5	48.5	48.5	48.5	47.25	47.25	47.25	48.5	48.5	48.5	48.5	48.5	48.5	37.76	37.76
SPP South - Energy Price - 1H2023	15	1/15/2023	1/15/2023	37.76	36.78	33.24	33.24	33.24	33.24	42.7	47.25	47.25	42.7	18.18	4.84	3.84	-25.9	-6.93	4.34	14.21	42.7	42.7	42.7	42.7	42.7	33.24	18.03
SPP South - Energy Price - 1H2023	16	1/16/2023	1/16/2023	37.65	37.65	24.9	39.71	37.65	44.2	54.36	59.49	59.49	57.13	54.37	59.49	59.49	54.37	54.37	54.37	54.37	55.26	59.49	59.49	59.49	59.49	46.99	46.99
SPP South - Energy Price - 1H2023	17	1/17/2023	1/17/2023	46	46	45.22	45.22	45.22	46.99	67.87	75.25	75.95	72.97	72.88	68.23	64.48	64.48	64.48	64.48	58.78	58.78	58.78	57.34	52.32	52.32	40.23	26.94
SPP South - Energy Price - 1H2023	18	1/18/2023	1/18/2023	16.66	40.23	17.26	40.23	44.73	44.73	57.44	57.44	57.7	57.44	57.68	57.44	57.44	57.44	57.44	57.44	57.44	57.68	57.7	57.7	57.7	57.44	44.73	44.73
SPP South - Energy Price - 1H2023	19	1/19/2023	1/19/2023	43.43	43.43	43.43	43.43	43.43	39.09	61.43	61.43	61.43	61.43	57.61	57.36	61.43	59.23	61.43	58.41	61.43	64.7	64.7	61.43	57.68	57.61	43.43	43.43
SPP South - Energy Price - 1H2023	20	1/20/2023	1/20/2023	44.18	44.17	44.17	44.17	44.17	44.17	62.31	62.31	62.31	57.72	62.31	62.31	62.31	56.87	56.87	56.87	56.87	57.15	56.87	56.86	56.86	56.86	44.18	42.62
SPP South - Energy Price - 1H2023	21	1/21/2023	1/21/2023	42.79	18.36	3.92	15.59	3.79	39.74	51.05	51.05	51.06	53.9	51.06	51.05	56.75	56.75	56.75	56.75	51.06	56.75	58.09	58.09	56.75	56.75	44.18	44.18
SPP South - Energy Price - 1H2023	22	1/22/2023	1/22/2023	44.18	44.18	44.17	44.18	44.17	42.5	56.75	56.75	56.75	56.75	56.75	56.65	56.75	56.75	56.75	56.75	58.09	58.09	60.36	60.36	58.09	56.75	44.17	44.1
SPP South - Energy Price - 1H2023	23	1/23/2023	1/23/2023	39.94	44.4	44.1	44.4	44.4	44.4	55.45	62.57	55.45	55.45	55.45	52.32	52.32	52.32	13.08	45.89	42.33	37.85	52.32	52.32	52.32	19.97	4.12	3.66
SPP South - Energy Price - 1H2023	24	1/24/2023	1/24/2023	3.25	-7.94	0	0	0	3.54	31.05	54.36	44.12	43.62	18.13	41.9	4.1	46.95	49.52	4.45	54.36	60.96	62.63	62.63	62.63	62.63	46.99	46
SPP South - Energy Price - 1H2023	25	1/25/2023	1/25/2023	48.38	48.38	48.38	48.38	45.22	48.22	58.09	65.44	61	54.36	50.65	43.17	29.65	37.77	4.15	42.72	29.03	52.32	54.36	54.36	54.36	54.36	44.1	45.22
SPP South - Energy Price - 1H2023	26	1/26/2023	1/26/2023	18.37	19.18	15.11	3.83	17.2	38.72	52.32	59.39	56.96	59.03	57.84	57.95	57.84	57.48	56.11	46.4	52.32	52.32	58.02	59.39	59.39	54.36	43.27	43.27
SPP South - Energy Price - 1H2023	27	1/27/2023	1/27/2023	18.37	18.96	3.7	3.83	0	22.27	52.32	54.36	52.32	6.35	6.45	42.08	37.62	4.27	49.26	46.88	12.08	59.02	66.63	66.63	66.63	66.63	46.99	45.22
SPP South - Energy Price - 1H2023	28	1/28/2023	1/28/2023	43.23	43.42	45.22	45.22	45.22	46.99	60.36	60.36	55.17	58.09	55.17	55.17	55.17	13.64	3.34	-25.05	55.17	26.46	58.45	55.17	55.17	55.17	45.22	42.95
SPP South - Energy Price - 1H2023	29	1/29/2023	1/29/2023	42.95	45.22	45.22	45.22	46.99	46.99	60.36	61.43	60.36	58.09	58.09	55.17	60.36	60.36	55.17	23.42	14.21	60.36	60.36	58.09	58.09	58.09	42.95	42.95
SPP South - Energy Price - 1H2023	30	1/30/2023	1/30/2023	37.21	37.21	37.21	40.01	37.21	37.21	54.36	54.36	52.32	52.32	52.32	52.23	52.23	52.22	52.32	52.32	52.32	52.32	53.55	52.32	52.32	52.23	37.21	37.21
SPP South - Energy Price - 1H2023	31	1/31/2023	1/31/2023	35.75	35.75	35.75	35.75	38.68	38.68	54.36	57.4	56.93	54.36	52.51	52.32	50.49	50.49	44.08	46.45	50.49	50.49	50.49	50.49	46.11	49.17	35.75	35.75
SPP South - Energy Price - 1H2023	32	2/1/2023	2/1/2023	17.79	35.66	35.66	35.66	39.49	39.5	52.86	52.86	50.92	50.52	51.02	52.2	50.86	50.12	49.48	52.86	49.48	52.86	54.93	54.93	52.86	54.93	43.15	42.97
SPP South - Energy Price - 1H2023	33	2/2/2023	2/2/2023	45.08	45.08	46.32	45.08	45.08	45.78	62.24	62.24	57.39	56.76	54.93	56.25	55.44	55.6	57.09	57.28	57.67	58.19	62.24	62.24	62.24	59.86	46.32	45.08
SPP South - Energy Price - 1H2023	34	2/3/2023	2/3/2023	56.1	56.1	54.06	56.1	56.1	56.1	71.62	82.67	71.63	71.62	64.96	60.41	54.93	54.93	52.86	52.86	11.84	54.93	54.93	52.86	36.91	51.05	46.79	18.98
SPP South - Energy Price - 1H2023	35	2/4/2023	2/4/2023	1.48	9.08	16.89	22.58	46.79	46.79	36.39	51.17	61.35	51.17	51.17	51.17	2.31	2.28	0	2.48	2.28	44.56	52.06	45.55	51.17	48.75	51.22	48.62
SPP South - Energy Price - 1H2023	36	2/5/2023	2/5/2023	53.27	55.05	54.06	53.84	56.1	52.97	61.35	61.35	63.33	66.36	62.69	61.35	57.79	56.51	55.68	53.18	53.18	56.26	55.96	53.18	53.18	53.18	46.79	48.62
SPP South - Energy Price - 1H2023	37	2/6/2023	2/6/2023	42.66	42.66	42.66	42.42	18.11	42.66	56.14	56.14	52.86	11.41	6.21	0.3	0	0.61	0	0	0	1.05	1.82	0	0.3	4.37	3.57	0
SPP South - Energy Price - 1H2023	38	2/7/2023	2/7/2023	0	0	0	2.22	2.69	5.93	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	51.49	48.11	50.9	52.3	52.3	54.93	52.86	52.3	39.33	39.33
SPP South - Energy Price - 1H2023	39	2/8/2023	2/8/2023	37.51	37.51	37.51	17.55	16.68	37.51	50.21	58.21	54.93	54.93	52.86	52.43	52.86	52.86	51.34	51.68	50.77	51.88	52.86	55.62	56.08	58.21	42.72	41.6
SPP South - Energy Price - 1H2023	40	2/9/2023	2/9/2023	42.35	42.35	42.35	42.35	42.35	42.35	52.86	52.86	52.86	53.6	54.11	53	51.76	50.97	51.34	50.97	50.97	51.88	50.97	50.97	52.86	54.93	42.99	42.58
SPP South - Energy Price - 1H2023	41	2/10/2023	2/10/2023	43.15	42.01	42.01	42.01	43.15	43.15	58.69	58.69	58.69	58.69	58.69	58.69	54.45	51.77	51.34	50.81	50.63	53.09	55.23	54.09	52.86	54.93	43.15	43.15
SPP South - Energy Price - 1H2023	42	2/11/2023	2/11/2023	43.15	42.01	42.01	38.7	37.87	37.87	45.95	47.06	47.2	44.4	43.5	44.29	44.22	41.42	41.42	41.42	11.47	2.03	41.42	45.95	41.42	2.85	1.63	1.45
SPP South - Energy Price - 1H2023	43	2/12/2023	2/12/2023	1.48	0	1.92	2.12	19.48	37.26	41.42	45.95	45.95	45.95	45.95	45.95	45.95	41.42	41.42	41.42	41.42	45.95	47.19	47.19	42.32	41.42	37.87	37.87
SPP South - Energy Price - 1H2023	44	2/13/2023	2/13/2023	36.11	36.11	36.11	36.11	40.01	40.01	52.86	54.93	54.93	52.86	52.86	51.02	49.77	48.6	48.6	48.6	41.84	52.86	54.93	52.86	52.95	52.86	40.01	38.46
SPP South - Energy Price - 1H2023	45	2/14/2023	2/14/2023	36.61	36.61	36.61	36.61	38.46	40.57	53.4	57.02	52.86	49.17	49.66	49.17	12.57	10.53	2.25	2.43	2.36	22.12	49.17	49.17	49.17	12.96	3.57	1.45
SPP South - Energy Price - 1H2023	46	2/15/2023	2/15/2023	1.48	0	0	0	0	2.32	23.55	50.01	50.01	26.81	2.33	2.08	1.71	1.13	1.28	1.51	4.29	50.01	53.29	52.86	53.42	57.29	41.57	41.81
SPP South - Energy Price - 1H2023	47	2/16/2023	2/16/2023	40.98	36.96	36.96	40.98	40.98	40.98	52.86	54.93	49.58	52.23	52.74	53.33	53.07	52.58	49.58	49.58	49.58	49.58	51.31	53.06	51.55	50.67	36.96	36.96
SPP South - Energy Price - 1H2023	48	2/17/2023	2/17/2023	36.47	36.47	36.47	36.47	36.47	40.43	49.02	52.86	50.12	49.53	49.49	49.02	49.49	47.72	49.01	45.09	38.99	48.83	49.22	49.01	49.01	49.01	28.93	18.98
SPP South - Energy Price - 1H2023	49	2/18/2023	2/18/2023	1.48	5.32	13.38	9.78	36.47	36.47	39.89	45.4	44.21	44.21	41.65	42.44	40.43	39.89	39.89	39.89	34.15	38.21	1.77	14.88	11.07	2.85	12.3	8.35
SPP South - Energy Price - 1H2023	50	2/19/2023	2/19/2023	7.19	9.67	0.76	5.66	36.47	36.47	39.89	39.89	39.89	43.36	39.89	40.07	39.89	39.89	39.89	39.89	39.89	39.89	39.89	44.21	45.4	45.4	40.43	40.43
SPP South - Energy Price - 1H2023	51	2/20/2023	2/20/2023	46.21	46.79	46.21	46.21	46.79	46.79	63.55	63.55	64.28	64.15	64.28	64.28	64.28	63.54	63.55	58.6	59.93	63.55	63.54	63.54	57.91	57.74	43.66	41.56
SPP South - Energy Price - 1H2023	52	2/21/2023	2/21/2023	36.93	41.56	40.9	40.9	40.9	45.45	54.82	55.34	54.82	52.86	54.81	45.35	42.04	52.86	24.35	34.85	41.66	45.82	52.86	54.81	49.8	48.36	40.9	39.41
SPP South - Energy Price - 1H2023	53	2/22/2023	2/22/2023	44.95	40.89	40.89	44.45	16.68	44.95	52.86	52.86	49.25	46.2	51.64	48.64	44.98	0	1.61	0	0	1.35	11.5	50.04	49.74	28.65	11.7	1.45
SPP South - Energy Price - 1H2023	54	2/23/2023	2/23/2023	1.48	2.09	1.92	2.12	2.24	12.9	54.93	56.46	52.86	52.86	52.86	8.33	47.31	2.3	50.12	52.86	46.44	52.86	52.86	56.46	56.46	56.46	46.79	42.74
SPP South - Energy Price - 1H2023	55	2/24/2023	2/24/2023	39.58	39.58	39.58	39.58	39.58	39.58	52.86	52.86	53.26	52.82	52.82	1.72	0	0	0	0	2.36	2.09	46.16	52.82	52.82	52.82	39.58	39.58
SPP South - Energy Price - 1H2023	56	2/25/2023	2/25/2023	39.58	39.58	39.58	39.58	39.58	39.58	43.29	44.68	43.29	43.29	37.3	12.49	12.17	2.28	2.18	40.31	2.28	10.59	43.29	43.29	43.81	43.29	39.58	39.58
SPP South - Energy Price - 1H2023	57	2/26/2023	2/26/2023	39.58	39.58	39.58	39.58	39.58	39.58	43.29	43.29	43.29	41.35	39.42	43.29	12.17	0	-23.24	-13.12	-24.09	1.78	2.17	30.62	43.29	43.29	39.58	39.58
SPP South - Energy Price - 1H2023	58	2/27/2023	2/27/2023	37.66	42.16	37.66	37.66	42.43	42.79	54.93	58.98	55.17	54.93	55.89	56.88	55.1	55.44	54.93	54.93	58.9	58.98	58.99	58.99	54.93	54.93	42.9	42.02
SPP South - Energy Price - 1H2023	59	2/28/2023	2/28/2023	44.3	44.3	44.13	43.04	44.45	44.53	55.62	61.01	55.62	54.93	54.93	52.86	52.86	54.93	31	2.57	48.56	8.06	42.87	50.04	17.71	49.68	37.83	16.96
SPP South - Energy Price - 1H2023	60	3/1/2023	3/1/2023	2.87	2.64	2.76	2.68	2.44	44.21	50.33	50.33	50.33	47.77	40.98	41.07	11.95	12.52	3.1	4.17	4.25	1.41	1.72	1.99	1.72	1.49	0	0
SPP South - Energy Price - 1H2023	61	3/2/2023	3/2/2023	0	0	0	0	0	2.05	16.45	7.7	1.94	1.83	1.91	1.77	0	1.84	44.89	2.04	0	5.54	49.4	52.57	53.94	53.93	51.24	49.31
SPP South - Energy Price - 1H2023	62	3/3/2023	3/3/2023	48.95	48.91	48.95	48.95	48.71	48.95	51.85	51.85	51.85	51.85	52.06	52.16	51.85	51.85	51.85	47.77	47.77	49.63	51.85	51.85	47.77	38.97	17.79	19.85
SPP South - Energy Price - 1H2023	63	3/4/2023	3/4/2023	16.62	2.64	2.76	0	0	2.17	4.11	3.97	-9.19	-42.68	-48.99	-50.23	-59.34	-59.75	-59.18	-48.76	-48.39	-26.8	3.06	3.45	0	-23.51	0	0
SPP South - Energy Price - 1H2023	64	3/5/2023	3/5/2023	0	9.89	9.04	0	0	5.47	73.81	73.81	18.45	1.43	0	0	-27.97	0	3.74	0	0	0	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	65	3/6/2023	3/6/2023	0	0	0	0	0.03	33.22	29.02	34.72	13.29	36.38	1.91	43.99	47.77	52.46	49.63	43.54	40.93	41.49	44.76	47.77	43.06	47.77	40.53	0
SPP South - Energy Price - 1H2023	66	3/7/2023	3/7/2023	0	0	0	0	0	0	0.33	2.23	1.94	1.83	0	-17.73	-20.86	-14.04	-14.04	-20.06	-23.83	-14.04	1.72	44.17	43.95	43.72	41.16	41.16
SPP South - Energy Price - 1H2023	67	3/8/2023	3/8/2023	46.45	16.72	28.7	49.87	32.63	50.04	58.99	56.94	52.56	49.63	49.63	54.41	58.9	55.79	49.63	56.37	58.99	59	59	59	58.99	58.99	50.04	50.04
SPP South - Energy Price - 1H2023	68	3/9/2023	3/9/2023	49.34	49.34	43.2	49.31	49.31	49.34	52.18	57.38	53.77	52.18	52.18	49.58	47.77	47.77	47.77	2.04	1.98	40.17	51.99	55.42	52.18	56.2	49.31	48.86
SPP South - Energy Price - 1H2023	69	3/10/2023	3/10/2023	44.85	45.07	45.19	45.11	48.41	50.78	52.94	52.94	49.63	48.37	49.63	48.37	48.37	47.77	44.5	47.77	47.77	48.37	48.37	48.37	48.37	47.77	15.91	1.89
SPP South - Energy Price - 1H2023	70	3/11/2023	3/11/2023	0	2.64	2.76	3.29	18.3	31.88	67.8	67.8	3.45	55.02	59.81	15.38	67.8	67.8	76.79	76.69	77.21	77.21	78.11	78.53	77.22	77.21	44.85	41.26
SPP South - Energy Price - 1H2023	71	3/12/2023	3/12/2023	39.38	14.32	39.38	16.37	44.53	44.61	77.17	77.02	70.89	50.54	67.8	76.19	76.65	22.25	3.74	21.97	23.26	67.8	78.14	67.8	67.79	64.88	0	0
SPP South - Energy Price - 1H2023	72	3/13/2023	3/13/2023	-6.3	-0.36	-17.68	-15.25	0	2.17	43.67	43.67	43.67	43.67	43.67	43.67	42.42	43.67	43.67	43.67	41.5	8.97	1.72	1.94	1.72	0	0	-1.67
SPP South - Energy Price - 1H2023	73	3/14/2023	3/14/2023	2.87	0	-2.81	0	6.45	42.11	49.63	44.76	44.62	44.62	44.94	47.77	49.63	47.77	49.63	49.63	49.63	49.63	47.77	49.63	47.77	47.77	42.18	41.83
SPP South - Energy Price - 1H2023	74	3/15/2023	3/15/2023	37.56	37.56	16.25	37.56	37.55	37.56	45.06	45.05	45.06	15.22	45.06	47.77	45.06	45.06	45.06	47.77	47.77	47.79	50.82	50.82	49.63	49.63	43.97	39.76
SPP South - Energy Price - 1H2023	75	3/16/2023	3/16/2023	44.59	40.19	40.19	44.59	44.69	45.8	49.63	49.75	48.16	50.77	45.95	45.95	49.63	48.46	47.77	46.82	47.61	45.95	45.95	45.95	45.95	45.95	40.19	17.43
SPP South - Energy Price - 1H2023	76	3/17/2023	3/17/2023	37.38	37.38	37.38	37.38	37.38	37.38	43.23	43.17	47.77	44.78	44.92	49.63	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.18	45.01	43.17	17.79	6.27
SPP South - Energy Price - 1H2023	77	3/18/2023	3/18/2023	2.87	0	2.76	2.68	2.44	2.17	4.11	3.97	3.45	0	0	0	0	0	0	0	0	3.33	3.06	7.35	3.06	9.51	15.91	10.12
SPP South - Energy Price - 1H2023	78	3/19/2023	3/19/2023	16.78	16.72	16.25	15.76	37.38	17.93	71.27	73.17	73.17	73.17	73.17	71.27	64.36	64.36	69.95	64.36	64.36	64.36	64.36	64.36	64.35	64.35	37.38	37.38
SPP South - Energy Price - 1H2023	79	3/20/2023	3/20/2023	40.3	35.75	36.43	40.3	40.3	40.3	46.28	46.05	48.28	48.88	46.72	46.85	46.05	46.51	47.65	46.05	46.05	41.71	46.05	46.05	7.8	0	0	0
SPP South - Energy Price - 1H2023	80	3/21/2023	3/21/2023	0	0	0	0	0	11.14	12.63	9.53	1.94	1.83	0	0	0	0	0	-23.79	-21.95	0	0	10.65	16.95	17.17	39.54	17.1
SPP South - Energy Price - 1H2023	81	3/22/2023	3/22/2023	6.74	0	0	2.68	0	39.82	45.58	17.71	10.38	0	0	0	0	1.84	0	0	1.98	1.87	8.48	45.58	47.77	47.77	39.82	39.82
SPP South - Energy Price - 1H2023	82	3/23/2023	3/23/2023	42.21	46.88	42.21	42.21	46.88	46.88	55.62	55.62	55.62	55.62	50.78	55.62	51.13	49.63	49.63	49.63	49.63	47.94	49.63	47.94	47.94	47.94	10.15	0

SPP South - Energy Price - 1H2023	83	3/24/2023	3/24/2023	0	0	-15.56	0	0	0	2.31	2.23	0	0	-14.16	-16.01	-14.38	0	0	2.62	44.19	30.97	46.63	46.63	46.63	33.66	19.72	16.3
SPP South - Energy Price - 1H2023	84	3/25/2023	3/25/2023	16.78	19.91	19.12	31.05	40.88	40.88	70.39	72.9	70.39	78.13	73.48	78.13	11.42	49.02	50.75	13	14.62	22.39	70.38	70.39	30.12	30.51	17.79	15.9
SPP South - Energy Price - 1H2023	85	3/26/2023	3/26/2023	16.78	27.95	16.25	40.88	40.88	40.88	78.13	78.13	78.13	78.13	77.12	70.39	70.39	22.25	61.94	3.63	0	70.38	31.47	31.47	13.52	0	10.54	-5.84
SPP South - Energy Price - 1H2023	86	3/27/2023	3/27/2023	0	33.37	9.69	2.68	21.37	47.43	49.63	47.69	47.69	47.77	47.69	49.63	50.09	49.63	49.63	49.63	49.63	50.11	51.06	49.96	49.63	47.77	46.6	41.95
SPP South - Energy Price - 1H2023	87	3/28/2023	3/28/2023	40.59	40.59	16.25	30.62	17.43	44.43	47.77	46.34	46.34	46.34	47.77	49.63	48.66	49.63	53.45	53.79	53.45	49.63	49.63	53.79	53.79	49.63	45.05	45.05
SPP South - Energy Price - 1H2023	88	3/29/2023	3/29/2023	43.36	44.53	43.36	39.11	43.36	43.36	47.77	47.77	47.77	47.77	47.77	49.63	46.07	47.77	47.77	44.88	45.2	44.88	44.88	44.88	44.88	23.96	17.79	39.11
SPP South - Energy Price - 1H2023	89	3/30/2023	3/30/2023	16.78	36.51	36.51	36.51	40.41	41.45	42.31	45.87	42.31	47.77	47.77	44	47.77	47.77	47.77	42.31	42.31	42.31	42.31	49.18	47.77	49.13	40.41	36.51
SPP South - Energy Price - 1H2023	90	3/31/2023	3/31/2023	3.51	3.96	33.65	19.05	33.65	33.65	39.49	39.49	39.49	45.9	43.13	39.49	39.68	45.91	44.66	45.96	42.4	43.61	39.49	46.27	45.97	46.27	37.16	33.65
SPP South - Energy Price - 1H2023	91	4/1/2023	4/1/2023	11.52	23.14	28.44	34.1	35.92	34.88	51.95	51.95	50.68	50.68	51.95	51.95	50.68	51.95	51.95	51.95	51.95	52.49	52.71	51.95	50.68	50.68	36.99	36.99
SPP South - Energy Price - 1H2023	92	4/2/2023	4/2/2023	36.98	34.1	34.1	34.1	36.98	36.98	50.68	50.68	26.99	3.76	-17.4	-45.92	-34.48	-17.4	-17.4	-36.46	0	0	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	93	4/3/2023	4/3/2023	0	-26.52	0	0	0	0	0	0	0	0	3.17	48.92	50.8	50.8	50.8	50.8	55.88	55.88	57	57	57	57	44.05	44.05
SPP South - Energy Price - 1H2023	94	4/4/2023	4/4/2023	46.33	42.49	44.04	42.49	46.33	46.33	55.88	52.95	55.88	55.88	45.25	3.1	2.52	2.42	2.62	0.44	52.95	50.51	20.74	52.95	45.25	45.25	22.98	2.86
SPP South - Energy Price - 1H2023	95	4/5/2023	4/5/2023	0	0	0	0	34.73	21.22	51.69	21.02	20.24	19.48	19.34	3.1	2.52	2.42	3.85	2.41	2.48	2.59	2.75	3.25	0	0	0	-18.73
SPP South - Energy Price - 1H2023	96	4/6/2023	4/6/2023	-18.6	0	0	0	0	0	3.34	19.23	43.72	2.82	2.59	3.1	2.59	53.67	0	0	0	0	0	3.25	0	0	0	0
SPP South - Energy Price - 1H2023	97	4/7/2023	4/7/2023	0	0	0	0	0	2.97	3.34	3.23	17.18	50.67	19.34	16.14	2.52	0	5.26	6.35	0	0	2.75	50.67	50.67	50.67	41.01	11.79
SPP South - Energy Price - 1H2023	98	4/8/2023	4/8/2023	3.71	11.52	41.01	27.78	41.01	41.01	56.2	56.2	56.19	56.2	61.23	56.2	56.19	42.13	27.46	0	49.62	56.2	56.2	56.2	56.2	56.2	41.01	41.01
SPP South - Energy Price - 1H2023	99	4/9/2023	4/9/2023	41.01	22.78	21.07	21.2	0	2.97	29.5	4.31	56.19	56.19	56.2	56.19	56.2	58.54	56.2	56.2	61.23	61.23	61.23	61.23	61.23	61.23	42.69	41.01
SPP South - Energy Price - 1H2023	100	4/10/2023	4/10/2023	11.37	0	40.01	24.19	15.19	40.02	55.88	49.63	49.63	47.92	19.34	3.1	20.29	2.42	2.62	2.41	2.48	0.31	12.65	21.51	25.15	4.06	0	0
SPP South - Energy Price - 1H2023	101	4/11/2023	4/11/2023	0	0	0	0	0	2.97	3.34	3.23	0	0	0	3.1	10.66	32.73	25.77	50.93	50.94	50.94	57.96	55.88	57.96	50.94	41.26	9.63
SPP South - Energy Price - 1H2023	102	4/12/2023	4/12/2023	-3.75	0	0	0	12.37	21.22	51.91	55.88	51.91	51.91	51.91	51.91	51.91	49.61	51.91	51.91	51.91	51.91	51.91	44.97	44.97	16.08	0	-18.73
SPP South - Energy Price - 1H2023	103	4/13/2023	4/13/2023	-7.47	0	0	0	3.15	27.95	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	51.44	46.02	41.74	41.55
SPP South - Energy Price - 1H2023	104	4/14/2023	4/14/2023	41.45	41.45	41.45	44.33	45.16	45.16	55.88	55.34	20.24	2.82	3.17	3.1	2.22	0	2.62	2.41	-7.13	0.31	0	0	3.75	0	41.44	0
SPP South - Energy Price - 1H2023	105	4/15/2023	4/15/2023	0	0	0	0	0	0	0	0	0	-31.6	-39.45	-39.56	-38.42	-38.42	-39.8	-40.8	-36.05	0	0	4.34	28.61	56.79	41.44	41.44
SPP South - Energy Price - 1H2023	106	4/16/2023	4/16/2023	41.44	41.44	29.73	27.52	41.44	41.44	56.79	56.79	4.15	3.76	56.79	56.79	15.21	3.23	3.5	3.22	34.34	61.49	63.53	63.53	61.89	61.88	41.45	41.45
SPP South - Energy Price - 1H2023	107	4/17/2023	4/17/2023	41.06	41.06	20.96	21.2	21.9	41.06	50.73	47.69	50.73	46.23	19.34	27.86	0	2.42	2.62	11.1	7.65	2.59	8.31	20.28	18.52	4.06	9.46	2.86
SPP South - Energy Price - 1H2023	108	4/18/2023	4/18/2023	0	0	0	0	0	28.98	52.74	51.32	51.32	51.32	43.68	3.1	2.52	2.42	1.83	3.17	2.48	21.47	51.32	51.8	51.32	51.32	15.26	21.06
SPP South - Energy Price - 1H2023	109	4/19/2023	4/19/2023	24.05	19.43	21.07	21.2	41.92	43.53	51.63	14.93	11.49	0	0	3.1	0	-11.77	-11.79	0	0	14.3	0	0.73	0	0	0	0
SPP South - Energy Price - 1H2023	110	4/20/2023	4/20/2023	3.71	0	0	0	0	0.52	3.34	0.71	0.59	0	0	0	0	0	0	0	0	0	0	1.49	1.58	1.53	1.49	0.41
SPP South - Energy Price - 1H2023	111	4/21/2023	4/21/2023	0	3.56	12.42	11.42	44.55	45.73	58.01	57.53	57.53	57.53	57.53	57.53	57.53	57.53	57.53	57.53	57.53	57.53	55.88	55.88	55.88	51.9	44.55	42
SPP South - Energy Price - 1H2023	112	4/22/2023	4/22/2023	40.89	40.98	40.89	40.89	44.55	40.89	61.05	61.04	61.04	61.04	61.05	56.03	56.03	3.23	3.5	3.22	19.53	19.07	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	113	4/23/2023	4/23/2023	0	0	0	0	0	0	0	28.98	0	0	0	56.04	56.04	31.23	61.04	62.28	61.04	61.05	62.66	56.03	56.04	56.03	40.89	40.89
SPP South - Energy Price - 1H2023	114	4/24/2023	4/24/2023	12.91	0	0	0	23.63	21.22	55.88	55.88	56.61	55.88	56.61	56.61	56.61	57.06	57.06	57.06	57.06	57.06	57.06	56.61	57.06	56.61	44.83	43.68
SPP South - Energy Price - 1H2023	115	4/25/2023	4/25/2023	44.35	42.79	44.35	44.35	44.35	44.35	55.88	50.01	54.36	50.01	50.01	50.01	52.67	50.01	50.01	50.01	55.88	57.31	57.31	55.88	57.31	55.88	44.35	40.71
SPP South - Energy Price - 1H2023	116	4/26/2023	4/26/2023	32.8	39.75	39.75	41.41	43.27	43.27	55.88	56.18	55.88	56.18	56.18	55.88	49	49	49	49	45.52	48.49	45.08	49	25.15	4.06	0	0
SPP South - Energy Price - 1H2023	117	4/27/2023	4/27/2023	0	0	0	0	3.15	39.31	48.54	3.23	3.11	2.92	3.17	3.1	2.52	0	2.52	0	0	0	2.75	3.25	48.54	48.54	3.32	0
SPP South - Energy Price - 1H2023	118	4/28/2023	4/28/2023	0	0	0	0	11.19	26.54	48.42	55.54	48.42	55.53	48.42	48.42	48.42	48.42	2.62	48.42	48.42	0	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	119	4/29/2023	4/29/2023	0	-26.52	-28.64	0	0	0	0	0	0	0	0	0	-37.29	-36.52	-39.61	0	0	0	0	4.34	5	33.24	20.34	17.86
SPP South - Energy Price - 1H2023	120	4/30/2023	4/30/2023	3.71	3.56	3.06	3.26	11.19	11.81	4.45	16.26	0	-13.54	-39.19	0	0	0	0	0	0	0	53.7	56.32	58.45	53.71	23.61	31.75
SPP South - Energy Price - 1H2023	121	5/1/2023	5/1/2023	44.39	4.08	0	4.14	4.09	3.49	2.71	0	0	-21.69	-18.16	-9.92	0	3.79	14.47	4.59	11.21	4.25	4.85	39.73	8.9	3.15	18.11	0
SPP South - Energy Price - 1H2023	122	5/2/2023	5/2/2023	0	0	0	0	0	3.49	11.97	10.39	37.64	40.63	41.13	46.58	46.58	46.58	46.95	46.95	46.95	46.95	46.95	46.94	46.58	46.58	50.92	49.62
SPP South - Energy Price - 1H2023	123	5/3/2023	5/3/2023	49.44	46.07	49.44	45.41	45.41	48.03	41.63	46.24	46.24	46.45	46.24	45.01	46.45	46.5	46.81	46.81	46.81	46.81	47.54	46.81	46.45	46.45	49.44	49.44
SPP South - Energy Price - 1H2023	124	5/4/2023	5/4/2023	43.58	47.4	43.58	46.11	47.4	47.4	44.89	44.89	40.87	40.87	39.12	39.81	39.5	39.81	39.12	39.11	39.11	39.12	39.12	39.11	36.36	8.68	0	4.37
SPP South - Energy Price - 1H2023	125	5/5/2023	5/5/2023	0	0	-0.91	0	19.91	24.38	27.52	5.78	0	34.4	21.8	27.53	6.86	9.32	18.08	37.23	42.78	40.25	4.07	3.2	42.78	37.23	7.88	4.37
SPP South - Energy Price - 1H2023	126	5/6/2023	5/6/2023	4.2	-16.27	-20.23	-30.47	6.35	20.67	38.18	12.99	38.18	38.18	38.18	9.58	30.68	38.18	38.18	38.18	38.18	38.18	38.18	38.18	38.18	38.18	41.09	12.02
SPP South - Energy Price - 1H2023	127	5/7/2023	5/7/2023	0	4.08	-16.17	-29.22	0	0	0	0	-22.32	4.35	18.15	3.79	16.04	19.3	21.98	38.18	38.18	38.18	41.47	42.53	42.53	41.47	44.63	44.63
SPP South - Energy Price - 1H2023	128	5/8/2023	5/8/2023	40	40	35.44	40	43.41	43.41	42.07	37.2	36.41	36.41	36.41	36.4	36.4	36.4	36.41	21.95	36.4	36.41	36.41	42.07	42.31	42.07	44.51	43.41
SPP South - Energy Price - 1H2023	129	5/9/2023	5/9/2023	44.86	41.3	41.3	41.94	43.41	44.86	42.96	42.96	42.96	42.96	41.72	42.53	42.96	42.96	40.33	37.39	39.19	37.39	42.96	39.01	42.96	37.39	41.3	41.3
SPP South - Energy Price - 1H2023	130	5/10/2023	5/10/2023	43.79	21.37	43.79	18.85	43.79	47.64	45.01	45.07	40.94	45.07	45.39	45.39	45.39	45.07	45.07	45.07	41.47	45.07	45.07	45.39	45.39	45.07	43.79	23.87
SPP South - Energy Price - 1H2023	131	5/11/2023	5/11/2023	19.18	4.15	4.22	4.15	18.18	48.59	39.97	33.45	39.93	39.93	39.93	12.68	38.26	38.04	39.93	35.3	39.93	39.93	39.93	40.32	45.8	41.45	44.65	14.17
SPP South - Energy Price - 1H2023	132	5/12/2023	5/12/2023	4.2	7.67	19.89	44.27	44	48.17	44.16	39.64	43.35	45.48	45.48	45.81	48.05	45.81	45.48	45.81	45.81	45.48	48.05	46.24	46.24	45.81	52.39	49.42
SPP South - Energy Price - 1H2023	133	5/13/2023	5/13/2023	48.17	49.42	48.17	46.86	44.27	48.17	45.93	45.93	49.14	54.04	50.19	50.59	53.26	53.52	54.04	57.81	48.99	45.93	53.52	54.73	57.81	51	52.39	49.43
SPP South - Energy Price - 1H2023	134	5/14/2023	5/14/2023	48.17	48.17	48.17	48.17	49.42	48.17	45.93	45.93	45.93	45.93	45.93	50.6	54.04	54.04	57.81	49.2	47.68	50.6	45.93	44.76	44.76	41.14	44.27	44.27
SPP South - Energy Price - 1H2023	135	5/15/2023	5/15/2023	14.29	21.37	8.81	23.03	45.07	24.64	40.24	46.15	40.24	46.15	46.15	46.15	46.5	46.24	46.15	46.24	40.24	40.24	46.15	40.24	40.24	40.24	1.68	4.37
SPP South - Energy Price - 1H2023	136	5/16/2023	5/16/2023	4.2	46.14	36.02	46.14	36.85	46.14	29.78	10.39	9.82	8.57	2.63	11.3	12.83	15.44	41.06	46.24	47.06	41.06	41.06	41.06	41.06	24.99	25.72	19.57
SPP South - Energy Price - 1H2023	137	5/17/2023	5/17/2023	0	21.37	0	4.79	37.13	46.52	25.39	17.72	41.35	46.24	46.24	46.24	47.38	47.39	46.24	47.39	47.38	47.39	47.39	47.39	47.39	47.39	46.52	46.52
SPP South - Energy Price - 1H2023	138	5/18/2023	5/18/2023	51.15	47	47	15.15	39.75	47.3	41.71	43.63	47.79	47.91	48.05	48.05	48.19	48.05	48.05	48.05	47.79	47.79	47.79	48.05	48.05	46.24	48.79	47
SPP South - Energy Price - 1H2023	139	5/19/2023	5/19/2023	46.72	46.72	46.72	46.72	46.72	46.72	46.24	41.5	43.21	47.56	46.24	46.24	46.24	46.5	47.56	47.56	47.56	47.56	47.56	47.56	47.56	44.38	50.9	50.9
SPP South - Energy Price - 1H2023	140	5/20/2023	5/20/2023	46.72	46.72	4.22	23.85	32.42	0	20.4	43.42	47.3	48.55	47.3	48.55	48.55	47.29	47.3	48.55	43.42	44.24	43.42	47.3	47.3	43.41	4.24	7.95
SPP South - Energy Price - 1H2023	141	5/21/2023	5/21/2023	46.72	16.4	0	4.14	18.18	0	0	7.23	15.3	43.42	43.41	43.42	43.42	43.42	43.42	47.29	43.42	43.42	22.82	43.42	43.42	5.32	25.72	12.23
SPP South - Energy Price - 1H2023	142	5/22/2023	5/22/2023	4.2	0	4.22	11.38	47.67	47.67	33.55	32.6	35.43	25.49	42.22	47.59	46.24	46.24	42.22	46.24	46.24	43.33	42.22	46.24	46.24	46.24	47.67	13.35
SPP South - Energy Price - 1H2023	143	5/23/2023	5/23/2023	0	25.14	4.22	4.14	29.65	33.57	23.9	42.46	42.47	46.24	42.47	46.24	46.24	46.24	46.24	42.47	42.47	42.47	42.47	46.16	46.24	42.47	4.24	4.37
SPP South - Energy Price - 1H2023	144	5/24/2023	5/24/2023	0	0	0	0	4.09	3.49	6.31	2.31	2.22	2.34	7.67	33.55	42.19	42.19	42.19	24.24	9.53	10.36	9.53	8.19	42.19	11.85	0	0
SPP South - Energy Price - 1H2023	145	5/25/2023	5/25/2023	0	0	0	0	0	0	2.71	2.31	2.22	8.57	6.77	22.96	21.12	41.99	41.99	41.99	41.99	41.99	41.99	41.99	48.05	41.99	47.37	4.37
SPP South - Energy Price - 1H2023	146	5/26/2023	5/26/2023	0	0	0	0	0	38.61	38.35	35.68	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	3.15	4.24	4.37
SPP South - Energy Price - 1H2023	147	5/27/2023	5/27/2023	0	0	0	0	0	0	0	0	0	0	12.97	42.69	42.69	42.69	46.49	46.49	50.25	47.71	46.49	47.71	42.69	42.69	18.11	0
SPP South - Energy Price - 1H2023	148	5/28/2023	5/28/2023	0	0	0	0	0	0	0	0	0	42.69	42.69	42.69	46.49	42.69	42.69	24.69	2.24	5.32	20.24	46.49	18.82	46.49	45.94	0
SPP South - Energy Price - 1H2023	149	5/29/2023	5/29/2023	23.27	0	0	0	4.09	45.94	0	0	1.35	8.57	40.91	43.85	46.24	46.24	47.27	46.24	47.27	46.9	46.9	46.5	46.24	41.31	45.94	45.94
SPP South - Energy Price - 1H2023	150	5/30/2023	5/30/2023	47.25	0	4.22	18.85	47.25	47.25	9.15	41.9	43.65	43.25	48	48.05	48.41	48.05	48.05	49.92	48.5	49.92	48.41	48.41	48.41	48.05	52.85	47.25
SPP South - Energy Price - 1H2023	151	5/31/2023	5/31/2023	51.77	53.3	53.31	53.3	48.88	53.31	46.02	43.32	43.97	46.24	47.46	46.24	46.24	48.05	48.05	49.39	48.05	46.24	43.14	46.24	43.14	8.68	0	0
SPP South - Energy Price - 1H2023	152	6/1/2023	6/1/2023	10.88	2.29	-22.69	-19.91	6.16	30.29	8.32	37.86	39.51	37.87	42.26	37.87	37.87	42.26	42.26	43.39	43.39	42.26	37.87	37.86	31.85	34.65	9.55	10.63
SPP South - Energy Price - 1H2023	153	6/2/2023	6/2/2023	10.27	0	2.29	-15.64	0	6.73	5.63	37.99	39.19	4.05	37.99	37.99	37.99	37.99	37.99	37.99	37.99	37.99	37.99	37.99	37.99	35.61	25.57	6.96
SPP South - Energy Price - 1H2023	154	6/3/2023	6/3/2023	10.27	7.27	-8.71	0	5.41	1.96	1.99	1.88	32.02	32.02	34.88	34.88	32.02	32.02	34.88	34.88	34.88	34.88	34.88	34.88	34.88	34.88	33.13	33.12
SPP South - Energy Price - 1H2023	155	6/4/2023	6/4/2023	30.41	30.41	30.41	30.41	33.12	33.12	34.88	34.88	34.88	35.8	35.81	35.81	38.35	42.23	42.23	42.55	42.23	42.23	37.19	35.81	35.81	34.88	33.12	30.41
SPP South - Energy Price - 1H2023	156	6/5/2023	6/5/2023	28.36	28.35	5.86	28.36	28.35	28.35	35.8	35.8	35.8	35.8	39.13	41.08	35.8	36	41.09	41.09	41.09	42.26	41.09	41.37	41.37	41.09	30.84	30.84
SPP South - Energy Price - 1H2023	157	6/6/2023	6/6/2023	29.82	29.72	29.82	27.74	27.74	27.92	36.44	40.35	39.19	40.62	41.56	41.56	42.57	42.26	42.26	42.26	42.26	42.26	45.51	44.15	44.18	42.26	32.95	33.29
SPP South - Energy Price - 1H2023	158	6/7/2023	6/7/2023	31.45	31.45	31.45	30.65	31.38	31.45	40.88	40.88	40.88	40.88	40.88	41.16	44.81	40.88	44.81	44.81	41.16	44.3	43.95	41.16	41.16	40.88	30.65	28.19
SPP South - Energy Price - 1H2023	159	6/8/2023	6/8/2023	27.39	27.39	27.39	27.39	27.39	27.39	36.43	39.93	39.93	39.93	40.18	40.18	40.18	40.18	42.26	40.18	40.18	40.18	39.93	40.18	40.18	39.93	27.39	27.39
SPP South - Energy Price - 1H2023	160	6/9/2023	6/9/2023	25.94	25.94	25.94	5.35	25.95	25.95	33.23	34.31	38.21	38.21	38.41	42.26	42	42.26	42.26	41.12	41.37	41.47	39.09	42.26	42.26	42.26	29.86	28.16
SPP South - Energy Price - 1H2023	161	6/10/2023	6/10/2023	25.95	25.95	25.95	25.95	25.95	28.16	27.32	29.65	33.01	35.5	37.43	38.81	42.55	42.55	44.21	42.55	42.55	35.61	31.18	30.4	30.4	30.4	28.16	25.95
SPP South - Energy Price - 1H2023	162	6/11/2023	6/11/2023	28.16	28.16	28.16	28.16	28.87	28.16	29.65	29.65	29.65	29.65	29.65	29.65	29.65	29.65	29.65	29.65	30.4	29.65	29.65	31.86	30.4	30.4	28.16	28.87
SPP South - Energy Price - 1H2023	163	6/12/2023	6/12/2023	32.61	32.61	32.61	30.56	30.66	32.61	42.98	42.98	43.32	43.91	43.91	43.91	43.32	43.32	43.32	42.98	42.98	42.98	42.98	42.26	37.49	37.56	29.94	32.61
SPP South - Energy Price - 1H2023	164	6/13/2023	6/13/2023	31.03	31.03	33.82	31.03	33.82	33.82	43.91	43.91	43.91	44.28	44.28	44.28	44.28	44.67	45.85	46.4	44.67	43.91	43.91	44.67	44.51	44.28	34.73	31.03
SPP South - Energy Price - 1H2023	165	6/14/2023	6/14/2023	2.64	0	31.83	32.59	34.71	34.71	42.26	43.91	45.23	45.23	45.65	45.96	45.96	45.96	47.2	49.6	46.59	45.65	45.23	45.65	45.63	44.74	34.71	34.71

SPP South - Energy Price - 1H2023	166	6/15/2023	6/15/2023	33.93	33.93	33.93	33.93	33.93	33.93	42.26	43.91	44.4	46.11	47.81	49.22	49.22	53.32	52.27	57.5	51.38	46.34	44.79	46.14	44.79	44.4	31.77	31.13
SPP South - Energy Price - 1H2023	167	6/16/2023	6/16/2023	28.55	29.46	28.94	29.11	31.06	31.06	40.16	41.32	39.2	38.04	41.32	40.89	41.32	41.61	39.29	41.32	41.32	38.01	38.01	41.32	41.32	41.32	31.06	31.06
SPP South - Energy Price - 1H2023	168	6/17/2023	6/17/2023	28.55	28.55	28.55	28.55	10.54	6.95	6.63	30.06	30.06	32.7	30.06	30.06	32.71	33.03	32.71	33.56	32.71	32.71	32.71	32.71	32.71	32.71	31.06	28.55
SPP South - Energy Price - 1H2023	169	6/18/2023	6/18/2023	28.55	6.29	5.86	1.98	28.55	9.98	30.06	30.06	30.06	30.06	32.71	32.7	32.71	32.71	33.56	32.7	30.87	32.7	32.71	32.71	33.56	33.56	31.06	31.06
SPP South - Energy Price - 1H2023	170	6/19/2023	6/19/2023	31.25	31.25	31.25	31.25	31.25	31.25	39.64	38.89	39.19	38.89	42.26	38.89	38.89	38.89	42.26	38.89	38.89	42.26	42.26	43.91	43.91	42.26	34.06	31.25
SPP South - Energy Price - 1H2023	171	6/20/2023	6/20/2023	10.03	6.29	5.86	1.98	5.41	30.21	37.78	37.78	37.78	38.04	42.26	43.66	39.84	42.26	43.3	43.3	43.3	43.3	43.3	43.3	43.3	42.26	33.78	33.78
SPP South - Energy Price - 1H2023	172	6/21/2023	6/21/2023	33.72	32.85	33.72	33.72	33.72	33.72	41.82	41.71	42.26	43.24	43.24	43.24	43.59	45.81	44.48	44.33	43.59	43.59	44.68	46.21	45.95	43.91	40.4	33.72
SPP South - Energy Price - 1H2023	173	6/22/2023	6/22/2023	34.57	33.72	30.9	30.9	31.98	33.68	39.37	40.46	43.86	43.91	44.12	44.12	43.91	44.13	44.13	44.51	44.51	44.51	45.63	44.51	49.31	45.63	37.83	34.57
SPP South - Energy Price - 1H2023	174	6/23/2023	6/23/2023	34.7	34.7	33.8	34.7	34.7	35.04	42.26	44.25	44.25	45.27	46.42	48.7	45.77	49.04	49.04	57.24	49.04	44.69	46.42	49.04	48.7	45.77	40.4	35.81
SPP South - Energy Price - 1H2023	175	6/24/2023	6/24/2023	36.96	34.7	34.7	34.7	34.7	34.7	36.53	36.53	39.56	42.55	43.13	44.21	48.08	52.55	44.21	42.55	40.32	42.55	42.55	43.13	36.53	35.59	34.7	31.01
SPP South - Energy Price - 1H2023	176	6/25/2023	6/25/2023	33.8	31.01	31.57	31.01	31.01	33.8	35.59	35.59	37.67	40.32	42.55	42.88	44.21	45.7	44.21	42.55	40.32	36.53	36.53	42.55	42.55	40.32	36.16	34.7
SPP South - Energy Price - 1H2023	177	6/26/2023	6/26/2023	35.77	34.83	34.83	34.83	34.83	35.77	42.73	43.91	45.36	42.26	42.26	43.91	43.91	43.91	43.91	43.91	39.62	42.26	42.26	42.52	45.36	45.36	35.77	34.83
SPP South - Energy Price - 1H2023	178	6/27/2023	6/27/2023	35.25	35.25	32.31	32.31	35.25	35.25	43.91	43.91	45.81	45.81	43.91	43.91	46.25	46.25	50.99	45.81	43.91	45.13	44.95	44.94	44.94	43.91	35.73	35.25
SPP South - Energy Price - 1H2023	179	6/28/2023	6/28/2023	35.95	36.92	36.87	36.87	36.91	36.85	43.91	45.56	46.55	43.91	46.56	43.99	46.55	46.55	47.01	44.27	46.55	44.04	42.07	44.04	45.73	45.32	36.91	35.95
SPP South - Energy Price - 1H2023	180	6/29/2023	6/29/2023	36.34	35.59	36.34	36.34	36.34	34.7	41.07	43.91	45.06	46.98	46.98	46.72	46.98	46.98	47.45	46.98	47.45	46.98	46.98	46.98	46.98	46.98	37.33	37.33
SPP South - Energy Price - 1H2023	181	6/30/2023	6/30/2023	35.08	35.88	35.88	34.94	35.88	35.88	45.48	45.48	45.48	45.7	46.07	47.41	47.48	48.59	52.07	58.99	45.9	46.36	45.48	45.7	45.9	45.48	38.43	35.88
SPP South - Energy Price - 1H2023	182	7/1/2023	7/1/2023	41.98	39.52	39.52	39.52	39.52	39.52	42.84	42.84	46.54	47.33	48.15	48.15	50.03	50.64	64.39	55.52	48.15	48.15	48.15	45.87	48.15	42.84	38.49	35.88
SPP South - Energy Price - 1H2023	183	7/2/2023	7/2/2023	38.49	35.75	38.49	38.49	38.49	38.49	42.84	42.84	46.54	41.72	42.84	47.32	48.15	48.15	48.15	48.15	48.15	50.03	48.15	44.59	48.15	42.84	39.52	38.49
SPP South - Energy Price - 1H2023	184	7/3/2023	7/3/2023	35.18	32.55	35.18	35.18	35.18	37.6	45.83	47.18	47.31	50.1	50.1	54.65	52.36	58.53	50.67	49.71	49.69	46.07	45.83	45.83	45.48	45.48	35.18	35.18
SPP South - Energy Price - 1H2023	185	7/4/2023	7/4/2023	35.18	35.18	35.18	35.18	35.18	35.18	45.48	45.83	47.84	51.38	50.95	49.71	52.13	50.56	58.53	58.52	58.53	49.74	49.82	50.57	52.28	56.34	44.42	42.53
SPP South - Energy Price - 1H2023	186	7/5/2023	7/5/2023	44.42	38.72	37.18	40.99	43.95	44.42	47.18	46.95	48.37	51.19	52.51	60.23	60.16	60.91	60.09	50.22	56.6	49.78	51.31	51.46	51.46	47.48	43.84	36.22
SPP South - Energy Price - 1H2023	187	7/6/2023	7/6/2023	30.03	29.29	28.59	28.59	30.81	30.03	38.57	38.71	41.7	43.34	41.44	45.47	48.62	49.07	51.49	49.99	45.4	45.4	47.18	45.4	45.4	45.4	32.38	29.29
SPP South - Energy Price - 1H2023	188	7/7/2023	7/7/2023	36.97	40.1	38.65	38.94	39.63	41.87	47.18	47.18	51.37	58.62	59.23	59.79	63.96	64.19	64.19	64.14	62.78	64.09	64.1	59.79	59.79	52.76	43.64	44.42
SPP South - Energy Price - 1H2023	189	7/8/2023	7/8/2023	43.58	36.97	36.97	36.97	40.81	39.61	40.14	48.15	49.2	46	48.15	50.03	60.59	60.59	60.58	63.77	60.58	60.59	50.03	45.28	45.27	45	42.42	41.22
SPP South - Energy Price - 1H2023	190	7/9/2023	7/9/2023	40.39	39.97	38.9	36.97	36.97	37.6	39.04	40.07	40.07	44.77	44.04	48.15	48.15	50.03	48.15	48.15	44.2	39.04	39.04	41.58	40.59	41.82	36.97	36.01
SPP South - Energy Price - 1H2023	191	7/10/2023	7/10/2023	37.63	37.62	37.63	37.63	37.91	38.63	47.18	46.81	45.4	47.18	47.95	49.28	50.2	49.58	49.75	49.28	48.04	45.89	47.88	41.95	45.4	45.6	34.51	37.63
SPP South - Energy Price - 1H2023	192	7/11/2023	7/11/2023	38.18	35.01	2.45	11.37	38.18	38.18	46.96	48.16	48.62	50.76	51.83	52.93	54.68	54.06	54.03	54.03	54.03	53.18	53.15	48.62	49.37	49.6	40.37	39.2
SPP South - Energy Price - 1H2023	193	7/12/2023	7/12/2023	39.34	39	39	39	39	39	48.41	48.24	49.51	48.85	55.16	53.53	54.71	50.5	48.85	48.41	48.41	49.94	49.94	49.87	48.85	49.77	39	38.48
SPP South - Energy Price - 1H2023	194	7/13/2023	7/13/2023	36.88	35.19	35.05	36.88	37	37.86	47.18	47.26	49.16	49.71	49.79	49.78	49.8	49.8	52.65	51.57	52.63	52.27	52.33	53.02	47.67	51.81	44.42	39.03
SPP South - Energy Price - 1H2023	195	7/14/2023	7/14/2023	39.34	37.57	36.69	36.76	36.66	37.52	46.73	46.92	47.32	49.78	53.17	51.55	52.74	52.11	52.31	51.9	60.6	51.9	51.93	49.85	51.9	49.77	43.64	42.86
SPP South - Energy Price - 1H2023	196	7/15/2023	7/15/2023	41.4	41.06	38.32	38.76	38.45	37.53	40.77	41.74	42.48	44.96	43.63	46.78	45.51	44.84	50.03	50.03	48.08	48.15	47.99	48.15	47.99	46.63	41.43	37.53
SPP South - Energy Price - 1H2023	197	7/16/2023	7/16/2023	38.87	36.83	36.69	36.75	37.52	37.52	40.68	40.68	44.74	41.87	47.99	46.78	45.66	50.03	53.05	50.03	56.11	51.83	49.88	52.8	49.37	48.15	41.4	39.03
SPP South - Energy Price - 1H2023	198	7/17/2023	7/17/2023	38.79	37.78	37.78	37.78	38.79	38.79	48.21	48.64	53.18	57.35	55.02	56.53	55.55	53.51	53.73	53.58	52.23	53.57	53.77	53.51	50.26	50.26	40.93	38.79
SPP South - Energy Price - 1H2023	199	7/18/2023	7/18/2023	39.21	38.79	39.42	38.71	39.11	43.54	48.85	50.54	53.94	56.91	63	63.39	63.59	64.01	67.41	67.74	66.34	64.01	61.01	63.35	57	51.5	43.55	43.55
SPP South - Energy Price - 1H2023	200	7/19/2023	7/19/2023	43.7	42.03	41.41	41.01	41.96	41.88	48.98	49.44	49.44	51.63	49.31	55.1	63.56	63.56	61.14	66.5	63.56	63.55	63.58	58.82	49.44	48.98	39.56	39.56
SPP South - Energy Price - 1H2023	201	7/20/2023	7/20/2023	40.94	39.87	40.95	40.95	40.94	40.94	46.73	50.39	48.35	49.41	53.56	53.16	54.2	54.43	53.21	52.36	49.93	48.95	50.39	53.48	49.55	50.89	44.42	40.95
SPP South - Energy Price - 1H2023	202	7/21/2023	7/21/2023	39.66	38.82	38.62	38.56	39.23	39.66	47.18	49.09	49.09	49.84	50.88	49.62	49.62	51.28	51.28	49.82	49.55	49.55	49.55	51.28	49.55	49.55	44.17	42.11
SPP South - Energy Price - 1H2023	203	7/22/2023	7/22/2023	42.2	41.7	39.66	39.66	39.66	39.66	43	43	47.5	47.9	48.15	43	46.96	50.03	50.03	50.03	50.03	47.45	50.03	48.15	43	43	41.02	39.66
SPP South - Energy Price - 1H2023	204	7/23/2023	7/23/2023	39.47	9.82	8.7	8.43	39.66	38.63	38.38	42.99	44.41	42.99	43	46.59	43	45.72	42.99	47.44	43	42.99	42.99	46.01	48.29	48.15	42.27	39.66
SPP South - Energy Price - 1H2023	205	7/24/2023	7/24/2023	41.98	38.04	38.04	39.87	39.92	38.04	47.18	47.18	47.85	49.11	57.34	59.85	61.35	61.35	61.35	61.35	61.35	63.41	57.44	58.43	58.14	54.3	46.15	45.32
SPP South - Energy Price - 1H2023	206	7/25/2023	7/25/2023	42.34	42.45	38.36	38.36	39.21	40.68	47.76	48.18	49.76	52.96	48.72	61.04	61.81	61.82	61.81	61.81	64.26	49.63	61.18	49.48	49.31	54.64	45.29	38.36
SPP South - Energy Price - 1H2023	207	7/26/2023	7/26/2023	37.78	37.78	37.78	37.78	37.78	36.8	45.4	45.4	47.18	47.18	47.58	52.22	53.32	47.58	49.79	49.79	60.96	49.07	53.87	54.14	47.18	47.58	39.25	39.08
SPP South - Energy Price - 1H2023	208	7/27/2023	7/27/2023	37.43	37.43	37.43	37.43	37.43	40.38	47.18	47.18	49.4	51.78	57.72	60.47	60.47	60.48	63.35	61.21	60.47	59.33	59.61	60.46	60.46	51.78	44.42	44.15
SPP South - Energy Price - 1H2023	209	7/28/2023	7/28/2023	37.12	39.59	40.19	39.09	40.97	40.87	46.89	47.18	51.59	56.29	59.44	60.05	62.58	60.01	63.5	64.18	63.72	62.58	61.17	60.01	60.01	51.95	44.42	44.42
SPP South - Energy Price - 1H2023	210	7/29/2023	7/29/2023	44.42	44.42	40.99	40.92	43.4	43.77	46.26	48.15	48.15	49.81	51.58	54.06	60.81	57.05	60.81	60.81	58.91	56.26	54.75	50.03	50.03	48.15	43.77	40.94
SPP South - Energy Price - 1H2023	211	7/30/2023	7/30/2023	37.12	37.11	36.16	37.11	39.03	37.11	40.23	41.97	40.23	40.23	40.23	48.15	49.86	55.02	56.58	58.82	57.48	55.02	53.1	48.87	48.15	49.77	42.27	39.62
SPP South - Energy Price - 1H2023	212	7/31/2023	7/31/2023	39.12	35.53	36.47	38.17	37.71	41.32	47.18	45.85	46.04	46.39	47.62	59.06	59.08	59.06	59.07	59.07	62.44	61.21	59.86	59.07	54.63	49.11	44.42	38.05
SPP South - Energy Price - 1H2023	213	8/1/2023	8/1/2023	33.31	37.25	33.31	35.58	33.31	33.3	44.99	46.76	45.56	56.22	56.59	51.09	57.22	59.95	58.03	57.41	57.22	57.21	57.22	55.57	51.02	50.77	39.13	39.17
SPP South - Energy Price - 1H2023	214	8/2/2023	8/2/2023	42.54	36.35	36.35	35.41	36.15	36.93	47.94	48.59	48.59	56.81	58.78	61.46	61.27	61.74	61.87	61.87	61.87	61.11	53.24	52.98	53.01	48.34	42.56	42.86
SPP South - Energy Price - 1H2023	215	8/3/2023	8/3/2023	37.4	38.41	42.41	40.23	42.12	43.44	50.61	50.61	50.6	55.43	58.33	62.84	64.21	65.01	63.78	65.03	64.6	63.89	63.13	61.85	58.73	55.73	43.44	42.99
SPP South - Energy Price - 1H2023	216	8/4/2023	8/4/2023	37.55	42.46	38.35	42.21	42.53	43.44	50.55	50.09	50.55	55.04	51	50.55	52.26	55.66	64.93	64.94	54.94	52.49	52.26	51.09	50.55	50.08	39.81	37.35
SPP South - Energy Price - 1H2023	217	8/5/2023	8/5/2023	37.35	37.35	34.25	36.39	38.35	34.25	34.08	36.22	38.06	39.64	41.19	41.35	41.35	43.06	42.45	52.63	41.62	41.19	41.35	38.65	35.27	35.83	38.35	37.35
SPP South - Energy Price - 1H2023	218	8/6/2023	8/6/2023	37.35	37.35	37.35	34.25	37.35	37.35	34.08	34.08	32.07	34.08	35.08	39.64	41.19	41.19	43.77	41.19	41.19	41.19	39.64	41.35	41.19	38.84	38.35	38.35
SPP South - Energy Price - 1H2023	219	8/7/2023	8/7/2023	33.21	33.21	33.21	32.37	33.21	33.21	44.88	45.92	46.76	46.76	50.85	51.09	51.09	57.05	57.05	57.05	57.06	57.05	56.32	57	51.02	50.55	39.01	43.44
SPP South - Energy Price - 1H2023	220	8/8/2023	8/8/2023	43.44	40.02	38.61	38.61	38.61	43.44	50.37	50.83	50.83	50.97	56	63.28	64.06	64.99	65.34	66.25	65.34	65.32	63.87	61.39	60.98	50.86	42.56	43.2
SPP South - Energy Price - 1H2023	221	8/9/2023	8/9/2023	40.18	38.23	38.23	38.23	39.26	39.26	51.05	51.05	50.67	51.54	52.37	52.37	53.79	55.37	54.74	53.79	53.55	56.87	51.54	51.54	51.54	51.05	39.26	39.26
SPP South - Energy Price - 1H2023	222	8/10/2023	8/10/2023	38.73	38.73	35.49	35.49	38.73	38.73	51.6	48.59	51.61	51.61	52.11	52.11	55.37	64.04	51.61	67.11	65.03	60.69	57.56	54.02	51.61	51.61	39.78	38.73
SPP South - Energy Price - 1H2023	223	8/11/2023	8/11/2023	39.63	39.63	39.63	39.63	39.63	40.62	51.45	51.45	51.45	51.45	51.95	51.95	57.37	63.44	61.13	64.71	53.84	60.47	57.21	57.05	51.95	51.95	43.04	39.63
SPP South - Energy Price - 1H2023	224	8/12/2023	8/12/2023	39.63	39.63	39.63	39.63	39.63	38.59	36.16	35.51	36.16	37.26	38.89	39.64	41.19	41.19	42.78	41.19	41.19	42.37	37.89	40.62	41.19	39.96	42.06	39.63
SPP South - Energy Price - 1H2023	225	8/13/2023	8/13/2023	39.63	39.63	40.95	40.36	39.63	39.63	36.16	36.16	36.16	39.19	39.96	41.19	41.19	42.78	42.78	41.19	42.78	42.78	41.19	41.19	41.19	39.64	39.63	39.63
SPP South - Energy Price - 1H2023	226	8/14/2023	8/14/2023	38.95	38.95	38.95	40.01	40.01	43.44	51.85	51.85	52.37	54.31	57.88	66.39	66.71	67.22	67.49	67.49	67.48	67.48	56.72	57	57.88	51.85	40.94	40.01
SPP South - Energy Price - 1H2023	227	8/15/2023	8/15/2023	41.12	40.94	38.94	38.94	40.94	39.75	50.71	51.19	51.24	52.32	59.91	65.43	65.25	65.85	66.07	66.18	65.43	56.44	55.73	56.55	55.04	51.39	43.44	43.03
SPP South - Energy Price - 1H2023	228	8/16/2023	8/16/2023	36.92	35.2	35.92	32.65	32.65	32.65	44.27	44.27	44.27	44.27	48.07	49.72	50.99	48.92	56.22	51.13	56.2	51.06	55.68	51.06	51.06	46.76	32.65	32.65
SPP South - Energy Price - 1H2023	229	8/17/2023	8/17/2023	29.31	29.31	29.31	29.31	29.31	34.23	40.59	41.01	41.62	46.76	46.76	48.59	49.73	50.48	51.1	51.08	51.07	51.08	48.59	51.07	50.78	44.88	38.2	41.53
SPP South - Energy Price - 1H2023	230	8/18/2023	8/18/2023	32.23	28.81	30.88	30.61	28.81	33.62	42.9	46.76	43.06	48.59	46.76	48.59	50.32	50.33	50.33	51.06	50.33	50.33	50.32	50.24	46.76	44.16	35.41	33.62
SPP South - Energy Price - 1H2023	231	8/19/2023	8/19/2023	31.58	31.58	28.81	31.58	33.65	33.91	30.68	33.36	39.64	39.64	39.64	40.67	40.67	41.19	40.67	41.19	40.67	40.67	40.15	40.48	37.02	37.04	33.62	33.62
SPP South - Energy Price - 1H2023	232	8/20/2023	8/20/2023	33.62	31.58	31.58	29.45	28.81	28.81	28.82	30.68	35.56	39.64	39.64	40.67	39.64	40.67	40.67	40.67	33.92	34.18	39.64	40.67	40.44	39.64	39.68	38.04
SPP South - Energy Price - 1H2023	233	8/21/2023	8/21/2023	42.85	42.4	39.68	39.53	36.8	40.53	48.59	48.69	47.69	50.97	52.79	55.77	57.29	53.3	53.48	51.29	51.2	50.99	53.21	53.3	52.93	50.82	40.96	38.09
SPP South - Energy Price - 1H2023	234	8/22/2023	8/22/2023	41.55	40.95	40.96	39.38	39.38	43.01	51.19	51.19	51.2	56.18	58.23	57.12	57.04	57.32	57.16	66.52	56.36	56.84	59.96	57.33	54.85	51.68	41.45	41.45
SPP South - Energy Price - 1H2023	235	8/23/2023	8/23/2023	42.52	42.11	41.23	40.57	40.57	43.44	52.45	52.45	51.06	56.03	58.63	58.63	58.63	60.67	60.76	61.49	59.75	58.66	67.97	68.34	59.6	52.99	43.44	40.57
SPP South - Energy Price - 1H2023	236	8/24/2023	8/24/2023	42.37	43.44	42.47	40.38	43.44	43.44	52.25	52.77	52.88	60.62	60.53	65.81	60.54	68.49	68.03	68.49	68.8	68.05	69.4	68.49	68	62.45	48.78	45.14
SPP South - Energy Price - 1H2023	237	8/25/2023	8/25/2023	45.14	43.44	44.53	44.38	44.58	45.14	54.41	51.06	53.72	51.37	65.21	65.65	66.33	66.36	70.31	70.3	66.59	66.48	66.36	65.65	65.44	57.3	45.14	44.51
SPP South - Energy Price - 1H2023	238	8/26/2023	8/26/2023	42.88	43.44	42.61	41.99	42.54	43.44	39.64	39.64	39.13	41.19	46.69	45.49	52.55	53.22	53.22	55.23	56.32	56.32	56.21	53.03	52.98	53.05	45.14	45.14
SPP South - Energy Price - 1H2023	239	8/27/2023	8/27/2023	45.14	43.44	42.83	40.57	39.72	42.42	38.82	39.13	40.96	41.87	45.16	52.69	51.55	52.92	45.23	53.21	53.22	53.17	52.69	41.87	41.87	41.19	43.33	43.44
SPP South - Energy Price - 1H2023	240	8/28/2023	8/28/2023	43.4	43.28	42.83	43.02	42.54	42.42	50.93	51.41	51.41	53.51	57.84	62.41	65	65.85	66.15	66.15	66.15	66.15	65.47	62.85	53.71	51.41	43.67	43.41
SPP South - Energy Price - 1H2023	241	8/29/2023	8/29/2023	40.71	40.71	39.63	39.63	39.63	40.71	52.6	52.6	52.6	53.14	58.82	58.82	64.58	59.14	68.57	60.36	58.22	58.71	60.63	59.4	53.14	52.6	40.71	40.71
SPP South - Energy Price - 1H2023	242	8/30/2023	8/30/2023	40.95	39.86	39.86	40.95	39.86	40.95	51.17	52.86	52.86	54.9	68.19	68.64	68.92	69.42	71.93	73.36	73.53	70.66	68.92	68.92	68.7	62.24	49.08	45.14
SPP South - Energy Price - 1H2023	243	8/31/2023	8/31/2023	43.44	43.24	41.25	41.78	41.37	43.44	53.74	53.42	57.99	61.05	61.72	66.8	69.37	69.4	69.9	70.03	69.9	69.4	59.54	65.17	60.64	53.74	43.44	43.44
SPP South - Energy Price - 1H2023	244	9/1/2023	9/1/2023	43.45	44.39	44.02	43.86	45.49	45.49	47.06	47.06	48.78	55.4	60.61	60.61	60.61	58.73	60.62	60.64	60.62	60.58	50.17	50.8	46.61	46.61	43.4	45.49
SPP South - Energy Price - 1H2023	245	9/2/2023	9/2/2023	43.45	43.38	42.64	43.62	43.81	45.07	52.88	52.84	54.65	56.78	59.46	63.29	60.79	61.82	74.85	74.96	74.96	59.63	74.05	60.41	54.65	53.77	41.61	41.61
SPP South - Energy Price - 1H2023	246	9/3/2023	9/3/2023	41.61	41.61	41.61	40.52	41.61	41.61	49.99	49.99	54.65	54.65	54.65	60.31	60.79	60.02	58.28	58.24	56.78	56.78	56.78	59.15	56.78	54.65	43.4	41.61
SPP South - Energy Price - 1H2023	247	9/4/2023	9/4/2023	41.61	41.61	41.61	41.61	41.61	41.61	46.61	46.61	45.98	48.78	53.43	51.75	49.83	51.98	48.25	51.98	51.98	51.98	50.29	51.98	51.98	48.9	45.49	45.49
SPP South - Energy Price - 1H2023	248	9/5/2023	9/5/2023	43.45	44.56	43.64	43.62	43.43	47.27	45.86	45.86	46.34	49.93	51.68	50.01	48.46	49.22	50.48	50.52	47.04	47.44	48.46	46.42	46.53	45.83	44.56	41.56

SPP South - Energy Price - 1H2023	249	9/6/2023	9/6/2023	40.83	40.17	40.17	40.17	40.17	40.17	45.27	43.92	43.82	43.23	42.26	42.26	42.26	42.26	42.26	42.26	42.26	46.07	45.69	45.69	45.27	40.94	39.12	39.12
SPP South - Energy Price - 1H2023	250	9/7/2023	9/7/2023	38.81	38.81	38.81	38.81	39.12	39.84	44.98	43.03	42.96	42.94	42.26	39.28	39.28	43.92	43.92	43.92	44.98	44.98	45.92	45.39	44.49	44.98	45.49	39.85
SPP South - Energy Price - 1H2023	251	9/8/2023	9/8/2023	43.68	44.08	39.57	39.57	43.93	45.49	45.12	44.72	44.77	45.86	45.12	45.12	45.12	45.12	49.62	49.62	46.61	46.61	45.12	45.12	44.72	44.72	38.54	38.54
SPP South - Energy Price - 1H2023	252	9/9/2023	9/9/2023	38.54	39.57	38.54	38.54	35.35	38.54	46.3	46.29	46.3	47.53	54.65	56.13	54.65	56.78	56.78	56.13	56.13	54.65	54.65	56.78	54.65	54.65	39.57	35.35
SPP South - Energy Price - 1H2023	253	9/10/2023	9/10/2023	36.18	35.35	38.54	35.35	35.35	38.54	43.46	43.56	43.46	43.51	47.53	47.64	54.65	54.65	56.13	56.13	52.48	54.65	50.27	56.13	54.65	47.53	38.54	38.54
SPP South - Energy Price - 1H2023	254	9/11/2023	9/11/2023	38.66	38.66	38.66	35.46	38.66	39.69	44.84	44.84	42.26	44.84	44.84	45.24	44.84	43.92	44.84	43.92	43.92	43.92	44.84	43.92	42.26	39.55	38.66	35.46
SPP South - Energy Price - 1H2023	255	9/12/2023	9/12/2023	36.47	36.47	39.79	36.47	36.47	39.79	42.26	42.26	40.36	42.26	42.26	42.26	45.91	45.91	43.92	43.92	45.91	42.26	43.92	42.26	42.26	40.11	36.47	36.47
SPP South - Energy Price - 1H2023	256	9/13/2023	9/13/2023	36.65	36.65	36.65	36.65	36.65	39.99	43.92	43.55	46.1	46.1	46.54	48.33	49.37	51.35	51.35	47.06	48.2	46.55	49.37	49.99	46.54	46.1	45.38	41.84
SPP South - Energy Price - 1H2023	257	9/14/2023	9/14/2023	40.44	39.56	39.56	39.56	40.62	40.62	45.69	45.69	45.69	45.29	45.85	45.91	43.86	45.6	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	39.56	36.27
SPP South - Energy Price - 1H2023	258	9/15/2023	9/15/2023	34.89	34.89	34.89	34.89	34.89	34.89	42.26	40.7	39.35	38.61	38.61	34.11	2.8	16.05	34.08	20.3	38.61	38.61	42.26	42.26	38.61	22.35	20.94	2.78
SPP South - Energy Price - 1H2023	259	9/16/2023	9/16/2023	0	2.77	2.83	8.42	34.08	34.89	41.91	41.91	37.22	41.91	41.91	41.91	41.91	41.91	41.91	45.68	45.68	45.68	46.89	46.89	46.1	45.68	34.89	9.85
SPP South - Energy Price - 1H2023	260	9/17/2023	9/17/2023	14.21	0	0	15.45	7.61	30.67	15.95	15.47	41.91	14.29	41.91	45.68	45.68	46.89	46.89	48.55	46.89	46.89	46.89	46.89	45.68	42.6	38.02	35.78
SPP South - Energy Price - 1H2023	261	9/18/2023	9/18/2023	34.51	34.51	37.61	37.61	37.61	38.14	43.83	43.83	43.83	42.26	43.83	43.84	43.92	44.21	44.21	45.37	44.21	44.21	44.21	44.21	43.92	43.84	37.61	37.61
SPP South - Energy Price - 1H2023	262	9/19/2023	9/19/2023	32.42	32.42	35.28	35.28	32.42	35.28	41.92	41.92	41.62	38.21	36.28	41.62	41.62	41.62	41.92	41.62	41.62	42.26	41.92	41.62	36.28	36.28	24.63	23.08
SPP South - Energy Price - 1H2023	263	9/20/2023	9/20/2023	9.73	21.02	9.26	1.36	5.59	34.42	38.17	38.17	38.17	38.17	38.17	38.17	34.94	38.17	42.26	42.26	42.26	42.26	43.74	42.26	42.26	38.17	34.42	34.42
SPP South - Energy Price - 1H2023	264	9/21/2023	9/21/2023	34.66	34.66	34.66	34.66	34.66	34.66	39	38.53	5.41	38.39	38.45	42.26	42.26	42.26	43.92	43.92	43.99	46.29	48.7	46.29	44.36	43.99	39.57	38.77
SPP South - Energy Price - 1H2023	265	9/22/2023	9/22/2023	38.44	38.44	37.56	38.44	38.44	38.44	43.92	43.68	43.92	43.92	43.92	43.68	43.92	44.05	43.68	43.68	43.68	43.92	43.68	43.68	42.26	42.26	34.37	34.37
SPP South - Energy Price - 1H2023	266	9/23/2023	9/23/2023	34.37	21.02	31.08	26.26	2.28	0.67	41.29	0	0	13.88	0	0	0	2.74	2.98	0	5.01	41.29	41.29	44.98	41.29	41.29	10.4	5.8
SPP South - Energy Price - 1H2023	267	9/24/2023	9/24/2023	0	0	0.05	-16.22	-6.34	-6.46	0	-31.05	-30.74	-39.01	-27.85	-27.69	0	0	0	3.42	5.01	41.29	44.98	41.29	41.29	8.97	0	0
SPP South - Energy Price - 1H2023	268	9/25/2023	9/25/2023	-2.67	-2.52	-4.62	-1.29	0	0.01	2.63	11.3	10.91	33.19	38.02	38.02	38.02	38.21	38.21	41.23	38.87	41.45	43.92	42.26	38.21	38.02	32.3	31.5
SPP South - Energy Price - 1H2023	269	9/26/2023	9/26/2023	32.21	34.41	32.21	34.41	35.04	35.95	41.39	41.39	41.39	41.68	41.68	42.26	42.65	43.92	45.45	45.45	45.45	45.45	45.3	43.92	42.76	42.26	35.04	34.41
SPP South - Energy Price - 1H2023	270	9/27/2023	9/27/2023	29.99	29.99	32.57	29.99	32.57	33.11	39.26	39.26	39.04	39.04	39.26	40.05	40.05	42.26	42.26	40.05	39.26	43.92	43.92	43.92	40.05	39.04	32.57	29.99
SPP South - Energy Price - 1H2023	271	9/28/2023	9/28/2023	32.35	32.35	32.35	35.2	35.2	35.2	41.84	40.51	41.54	41.54	41.84	41.84	41.84	42.26	41.84	41.84	41.84	45.64	45.64	42.26	41.84	41.54	35.2	35.2
SPP South - Energy Price - 1H2023	272	9/29/2023	9/29/2023	29.39	30.39	31.9	31.9	31.9	32.27	38.4	38.4	38.4	36.91	38.4	33.4	33.4	33.4	33.4	33.4	33.4	38.6	38.4	33.4	33.4	33.4	24.63	2.78
SPP South - Energy Price - 1H2023	273	9/30/2023	9/30/2023	2.77	2.77	0	0	0	0	0	0	0	-20.75	-20.94	-20.71	-23.92	0	-6.56	4.15	0	13.35	8.43	2.43	3.59	4.29	0	0
SPP South - Energy Price - 1H2023	274	10/1/2023	10/1/2023	0	0	0	0	0	0	-19.47	-31.84	-33.64	-31.97	-39.68	-37.5	-33.97	-21.2	-27.62	-6.58	-15.79	7.22	8.84	0	0	0	-10.61	-11.31
SPP South - Energy Price - 1H2023	275	10/2/2023	10/2/2023	-12.01	-13.41	-12.99	-12.01	-13.52	0	0	0	0	2.93	0	3.42	17.4	38.81	38.81	38.81	38.81	38.81	44.2	44.2	42.53	38.81	27.43	27.43
SPP South - Energy Price - 1H2023	276	10/3/2023	10/3/2023	27.66	7.2	14.39	27.66	27.66	23.85	39.08	13.76	8.87	2.93	39.08	35.95	39.08	39.08	39.08	39.08	39.08	44.2	44.2	44.2	42.53	42.39	27.66	27.66
SPP South - Energy Price - 1H2023	277	10/4/2023	10/4/2023	27.81	27.81	27.81	27.81	27.81	30.83	42.53	42.53	44.2	44.2	44.2	44.2	42.53	44.2	44.2	44.2	44.2	45.31	42.53	42.53	42.53	41.08	27.81	27.81
SPP South - Energy Price - 1H2023	278	10/5/2023	10/5/2023	28.22	28.22	28.22	31.3	28.22	31.3	42.53	42.53	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	39.78	18.08	17.59
SPP South - Energy Price - 1H2023	279	10/6/2023	10/6/2023	17.11	18.1	16.21	2.91	3.2	13.84	40.23	37.92	40.23	31.28	36.42	36.21	36.83	37.63	36.6	35.76	36.01	38.27	40.23	40.23	40.23	40.23	28.59	24.59
SPP South - Energy Price - 1H2023	280	10/7/2023	10/7/2023	14.15	14.54	14.98	14	14.87	13.84	20.43	18.45	12.67	5.26	0	0	0	0	0	0	6.78	0	4.73	2.33	0	0	0	0
SPP South - Energy Price - 1H2023	281	10/8/2023	10/8/2023	0	0	0	0	0	0	41.91	0	0	-31.86	-23.62	-15.18	-5.11	-3.55	6.98	6.08	49.4	54.81	54.81	54.8	54.8	49.4	28.59	28.59
SPP South - Energy Price - 1H2023	282	10/9/2023	10/9/2023	30.57	7.04	18.34	16.44	16.21	26.89	44.2	42.53	40.83	40.83	40.83	42.53	42.53	44.2	44.2	44.2	45.25	45.26	46.73	45.25	44.2	42.53	30.57	26.89
SPP South - Energy Price - 1H2023	283	10/10/2023	10/10/2023	28.99	25.54	25.54	28.99	28.99	25.54	43.31	42.53	39.17	39.17	39.17	39.17	39.17	39.17	39.17	39.17	39.17	39.17	39.17	39.17	31.93	30.74	10.74	3.15
SPP South - Energy Price - 1H2023	284	10/11/2023	10/11/2023	0	3.12	0	15.46	15.78	20.01	39.09	39.08	13.42	0	13.42	3.42	23.69	3.13	4.54	2.64	30.36	39.08	39.09	29.82	29.42	39.09	25.47	17.46
SPP South - Energy Price - 1H2023	285	10/12/2023	10/12/2023	14.15	3.12	0	0	0	3.33	3.94	9.65	-4.28	0	-3.02	13.53	0	0	0	0	21.86	19.24	40.03	40.03	40.03	42.53	18.08	9.03
SPP South - Energy Price - 1H2023	286	10/13/2023	10/13/2023	8.45	7.62	16.81	15.46	14.87	29.34	42.53	42.53	44.2	44.2	44.2	44.2	44.2	44.2	44.2	42.53	42.53	44.2	44.2	44.2	44.2	44.2	33.06	31.5
SPP South - Energy Price - 1H2023	287	10/14/2023	10/14/2023	31.5	29.93	29.93	29.93	29.93	34.24	60.99	61.03	60.99	58.13	58	57.07	59.16	57.66	54.21	48.13	57.49	58.93	61.03	58.72	51.73	45.52	26.34	26.34
SPP South - Energy Price - 1H2023	288	10/15/2023	10/15/2023	26.34	26.34	26.34	29.93	29.93	29.93	45.52	45.52	53.98	51.72	51.73	54.26	45.52	22.97	7.74	51.73	45.51	49.74	45.52	45.52	45.52	45.52	26.34	26.34
SPP South - Energy Price - 1H2023	289	10/16/2023	10/16/2023	28.63	25.62	25.62	29.08	29.08	29.08	43.41	43.41	43.42	43.42	43.42	42.53	42.53	42.53	42.53	43.14	44.2	44.2	44.2	43.41	42.53	39.26	29.08	30.92
SPP South - Energy Price - 1H2023	290	10/17/2023	10/17/2023	29.96	26.36	27.22	29.96	32.57	34.26	44.49	44.49	44.49	44.49	44.49	44.2	38.78	40.18	40.18	40.18	40.18	42.53	44.2	44.2	42.53	42.53	26.36	22.21
SPP South - Energy Price - 1H2023	291	10/18/2023	10/18/2023	17.11	18.51	25.88	25.88	25.88	29.39	39.58	42.53	39.85	43.79	43.79	43.79	42.53	43.79	42.53	43.79	43.79	43.79	43.79	43.79	43.79	43.79	33.43	29.39
SPP South - Energy Price - 1H2023	292	10/19/2023	10/19/2023	29.63	33.69	29.61	31.16	33.77	33.9	44.2	44.2	43	42.53	42.53	39.81	44.06	39.81	42.53	40.53	42.53	45.39	44.2	50.48	45.39	44.06	29.6	26.06
SPP South - Energy Price - 1H2023	293	10/20/2023	10/20/2023	27.5	27.5	27.5	27.5	27.5	30.28	42.53	42.53	42.49	42.53	42.53	42.53	41.46	40.4	42.53	41.47	42.53	44.2	47.31	44.2	44.2	41.46	27.5	24.27
SPP South - Energy Price - 1H2023	294	10/21/2023	10/21/2023	24.27	24.27	24.27	24.27	24.27	24.27	51.07	44.75	15.22	41.94	49.5	50.33	47.52	53.73	55.87	52.94	52.21	53.87	53.79	51.95	51.38	47.52	27.5	27.5
SPP South - Energy Price - 1H2023	295	10/22/2023	10/22/2023	27.5	27.5	27.5	27.5	27.5	27.5	52.29	50.47	41.93	41.94	41.94	41.94	41.94	41.94	41.94	41.94	41.94	47.52	47.52	50.74	47.52	47.52	27.5	27.5
SPP South - Energy Price - 1H2023	296	10/23/2023	10/23/2023	31.56	29.72	29.72	29.72	31.57	31.7	45.56	44.21	44.2	44.2	44.21	44.21	44.2	42.53	44.2	44.2	44.2	50.66	49.83	44.33	44.21	44.2	32.08	31.52
SPP South - Energy Price - 1H2023	297	10/24/2023	10/24/2023	31.93	30.11	30.11	30.11	30.11	30.11	44.2	42.53	42.53	44.2	43.85	42.53	40.34	40.34	40.34	40.34	42.53	44.2	44.2	44.2	42.53	40.34	27.19	17.59
SPP South - Energy Price - 1H2023	298	10/25/2023	10/25/2023	21.67	16.7	26.71	15.46	3.2	26.71	42.53	40.62	40.61	40.61	40.61	40.61	42.53	40.62	40.62	40.62	40.61	42.53	40.62	40.62	31.84	3.93	0	3.15
SPP South - Energy Price - 1H2023	299	10/26/2023	10/26/2023	-3.35	-7.09	0.62	18.78	14.87	28.59	39.31	42.53	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	42.53	42.53	38.58	38.58	38.58	38.58	13.21	3.15
SPP South - Energy Price - 1H2023	300	10/27/2023	10/27/2023	3.2	0	5.12	7.66	27.01	13.84	40.51	40.51	42.53	40.51	40.51	42.53	40.51	42.53	42.53	40.51	40.51	27.56	34.97	38.01	40.51	36.85	27.01	21.49
SPP South - Energy Price - 1H2023	301	10/28/2023	10/28/2023	27.01	29.92	21.44	27.01	20.07	27.01	23.17	54.36	17.42	17.7	32.35	46.67	24.95	28.28	25.63	23.95	51.7	60.99	59.53	60.99	52.84	52.84	29.92	27.01
SPP South - Energy Price - 1H2023	302	10/29/2023	10/29/2023	27.01	27.01	29.92	29.92	29.92	27.52	51.7	51.7	44.15	46.67	0	0	0	0	-15.83	0	46.67	56.82	55.36	60.11	51.7	56.71	29.92	29.92
SPP South - Energy Price - 1H2023	303	10/30/2023	10/30/2023	27.09	18.73	18.66	15.46	27.09	30.01	42.53	44.2	40.61	40.61	42.53	44.2	42.53	44.2	45.14	45.14	45.14	51.82	55.98	45.14	44.2	45.14	30.01	27.09
SPP South - Energy Price - 1H2023	304	10/31/2023	10/31/2023	27.32	27.32	14.39	12.83	3.2	11.46	14.25	14.53	0	0	0	0	0	0	0	0	2.74	3.35	3.84	4.09	0	0	0	0
SPP South - Energy Price - 1H2023	305	11/1/2023	11/1/2023	-14.93	-14.21	-13.98	0	0	3.03	8.4	37.54	27.95	37.54	39.22	40.51	40.51	40.5	40.51	39.22	39.22	39.22	39.22	37.54	37.54	31.22	24.18	24.41
SPP South - Energy Price - 1H2023	306	11/2/2023	11/2/2023	2.4	2.47	3.29	2.12	23.74	23.74	36.71	36.71	36.71	36.71	36.71	30.13	28.38	30.13	36.71	29.57	39.22	32.75	0	11.81	11.81	3.13	0	0
SPP South - Energy Price - 1H2023	307	11/3/2023	11/3/2023	0	0	0	0	0	0	13.52	35.98	38.74	39.22	39.22	39.93	39.22	39.85	40.75	40.75	40.75	40.75	40.75	40.75	39.22	38.74	25.93	25.58
SPP South - Energy Price - 1H2023	308	11/4/2023	11/4/2023	26.47	25.58	25.58	25.58	26.72	25.58	72.38	67.24	76.02	69.94	81.21	81.21	76.02	72.26	76.02	75.66	80.38	78.54	81.21	78.54	77.12	67.24	25.58	23.14
SPP South - Energy Price - 1H2023	309	11/5/2023	11/5/2023	23.14	23.14	11.64	5.65	6.57	6.7	17.26	19.93	-25.22	-46.36	-45.44	-45.65	-46.39	-45.64	-44.18	-44.26	0	7.33	11.98	5.69	4.53	6.88	0	0
SPP South - Energy Price - 1H2023	310	11/6/2023	11/6/2023	2.16	2.47	0	0	3.69	27.84	40.75	40.75	40.37	40.37	40.75	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	40.75	40.75	29.14	29.37
SPP South - Energy Price - 1H2023	311	11/7/2023	11/7/2023	29.96	30.27	29.28	30.68	28.62	32.85	40.95	40.96	40.96	42.46	42.46	42.46	42.46	42.46	42.46	40.96	42.46	44.36	44.36	42.46	42.46	45.85	34.14	34.14
SPP South - Energy Price - 1H2023	312	11/8/2023	11/8/2023	32.19	32.17	27.86	32.15	28.64	32.85	40.75	40.75	40.75	41.49	40.75	40.75	39.98	39.98	38.74	38.74	38.74	38.74	38.74	14.2	11.81	14.41	1.87	2.09
SPP South - Energy Price - 1H2023	313	11/9/2023	11/9/2023	2.16	0	0	0	3	0	38.94	35.82	38.94	38.94	38.94	38.94	38.94	39.22	38.94	39.22	40.19	40.2	40.75	40.75	40.75	40.75	32.4	32.85
SPP South - Energy Price - 1H2023	314	11/10/2023	11/10/2023	34.14	34.14	29.16	30	29.16	31.4	41.54	43.12	40.75	39.22	40.75	39.22	39.22	39.22	35.82	31.4	40.75	41.54	41.54	40.75	40.75	3.13	0	0
SPP South - Energy Price - 1H2023	315	11/11/2023	11/11/2023	0	0	0	0	0	0	7.04	31.63	1.37	0	0	5.33	5.8	5.16	0	22.47	78.87	81.76	76.65	76.65	69.11	69.11	10.04	2.09
SPP South - Energy Price - 1H2023	316	11/12/2023	11/12/2023	10.46	10.76	11.64	11.72	17.15	20.42	69.11	76.64	69.11	42.87	55.58	53.67	21.09	22.67	0	0	55.95	57.23	0	0	0	0	0	-10.06
SPP South - Energy Price - 1H2023	317	11/13/2023	11/13/2023	-10.06	-14.21	-13.75	-17	-12.75	0	3.2	0	0	0	-4.53	-0.61	-13.29	0	0	0	2.24	30.73	5.44	5.84	2.06	3.13	0	0
SPP South - Energy Price - 1H2023	318	11/14/2023	11/14/2023	0	-7.5	-7.63	0	0	3.03	41.07	45.6	40.75	41.07	40.75	39.22	40.75	10.15	39.22	40.75	40.75	41.07	41.07	41.07	39.22	39.22	28.08	0
SPP South - Energy Price - 1H2023	319	11/15/2023	11/15/2023	28.99	28.99	28.99	28.99	30.09	32.22	42.18	46.87	46.87	46.87	46.87	46.87	46.87	46.87	46.87	46.87	46.87	47.41	47.41	46.87	46.87	46.87	32.85	32.85
SPP South - Energy Price - 1H2023	320	11/16/2023	11/16/2023	32.18	28.7	28.7	28.7	28.7	28.7	41.83	41.83	38.36	39.35	5.61	2.42	2.63	2.34	3.63	2.3	13.2	16.79	39.22	5.84	2.06	3.13	1.87	2.09
SPP South - Energy Price - 1H2023	321	11/17/2023	11/17/2023	2.16	2.47	2.27	2.27	21.44	23.43	25.73	39.07	39.07	28.8	14.64	23.88	39.07	35.31	39.07	39.07	40.75	43.34	43.34	39.07	40.75	39.22	29.34	29.34
SPP South - Energy Price - 1H2023	322	11/18/2023	11/18/2023	26.45	26.45	21.81	18.54	26.45	27.68	77.12	69.53	69.53	69.53	69.53	69.53	5.8	5.16	7.99	5.06	9.91	7.33	11.98	12.85	4.53	0	0	0
SPP South - Energy Price - 1H2023	323	11/19/2023	11/19/2023	0	0	0	0	0	0	6.12	0	28.57	69.52	31.04	21.09	21.09	22.67	22.67	54.96	69.53	69.87	69.52	65.27	69.52	69.52	26.45	27
SPP South - Energy Price - 1H2023	324	11/20/2023	11/20/2023	10.46	2.47	6.45	5.19	23.86	23.86	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	39.74	39.22	35.9	35.9	35.9	23.86	23.86
SPP South - Energy Price - 1H2023	325	11/21/2023	11/21/2023	26.53	26.53	29.43	29.43	30.09	30.22	40.75	42.63	40.75	39.22	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	40.75	40.75	40.75	39.22	29.43	29.43
SPP South - Energy Price - 1H2023	326	11/22/2023	11/22/2023	27.76	30.66	30.83	30.66	30.66	30.66	40.75	45.17	45.17	45.17	45.17	45.17	42.12	45.17	40.75	45.17	45.17	45.17	45.65	45.17	45.65	45.17	32.85	30.83
SPP South - Energy Price - 1H2023	327	11/23/2023	11/23/2023	30.83	27.76	27.76	27.76	27.76	27.76	39.81	39.81	39.22	39.81	5.61	1.31	-7.77	-19.44	-14.62	-16.57	0	8.86	39.22	39.22	39.81	39.22	27.76	27.76
SPP South - Energy Price - 1H2023	328	11/24/2023	11/24/2023	27.88	27	27	28.87	29.97	29.97	40.75	40.75	39.22	39.22	39.22	39.22	39.22	39.22	38.88	38.88	38.88	40.75	39.22	38.88	38.88	38.88	27	27
SPP South - Energy Price - 1H2023	329	11/25/2023	11/25/2023	27	27	27	27	29.97	29.97	78.78	80.92	78.78	78.78	78.78	78.78	78.78	70.99	70.99	70.99	78.78	78.78	78.78	78.78	78.78	78.78	30.78	29.97
SPP South - Energy Price - 1H2023	330	11/26/2023	11/26/2023	29.97	29.97	29.97	29.97	27	27	70.99	77.16	78.78	78.78	70.99	70.99	21.09	0	0	0	61.39	70.99	70.99	22.2	12.25	11.44	10.04	10.69
SPP South - Energy Price - 1H2023	331	11/27/2023	11/27/2023	2.16	8.54	1.87	6.62	30.24	32.85	42.06	42.06	42.06	42.06	42.06	42.06	42.06	42.06	42.06	42.06	48.61	48.61	48.61	48.61	48.61	48.61	33.65	33.64

SPP South - Energy Price - 1H2023	332	11/28/2023	11/28/2023	32.85	32.85	32.85	29.64	32.85	32.96	41.33	41.51	41.33	41.33	41.41	42.08	42.63	41.33	41.33	41.33	41.33	42.95	42.95	42.88	42.63	41.41	32.85	29.64
SPP South - Energy Price - 1H2023	333	11/29/2023	11/29/2023	29.19	29.19	29.19	29.19	29.19	29.19	40.78	42.15	46.54	42.82	47.16	42.93	42.93	47.16	47.16	47.16	47.16	47.16	47.7	47.16	47.16	47.16	32.85	32.46
SPP South - Energy Price - 1H2023	334	11/30/2023	11/30/2023	30.14	30.14	30.14	30.14	30.96	30.14	42.08	42.92	39.22	39.22	39.22	38.3	39.22	39.22	38.3	40.75	42.81	40.75	39.32	40.75	38.3	39.22	30.14	30.14
SPP South - Energy Price - 1H2023	335	12/1/2023	12/1/2023	29.2	29.2	26.35	26.35	26.35	26.35	34.95	34.95	34.95	34.95	34.95	34.95	34.95	33.25	33.68	32.41	34.95	34.95	34.95	34.95	36.57	34.95	26.35	26.35
SPP South - Energy Price - 1H2023	336	12/2/2023	12/2/2023	14.34	26.35	26.35	26.35	26.35	26.35	37.12	41.13	37.12	37.12	41.13	41.13	41.13	42.23	47.46	42.23	42.23	42.23	46.64	42.23	41.13	41.13	29.2	29.2
SPP South - Energy Price - 1H2023	337	12/3/2023	12/3/2023	29.2	26.35	29.2	26.35	26.35	26.86	41.13	41.13	41.13	41.13	37.12	41.13	37.12	37.12	37.12	37.12	37.12	41.13	37.12	37.12	37.12	37.12	29.98	29.2
SPP South - Energy Price - 1H2023	338	12/4/2023	12/4/2023	28.85	28.85	28.85	28.85	28.85	29.62	39.32	40.43	40.43	40.43	40.43	40.43	41.48	41.42	42.34	41.45	40.43	41.42	41.53	40.07	40.43	40.07	29.62	33.08
SPP South - Energy Price - 1H2023	339	12/5/2023	12/5/2023	30.78	29.97	29.97	29.97	29.97	30.78	41.35	41.35	41.35	40.08	37.85	35.21	35.19	37.85	37.85	35.19	38.56	41.57	41.75	41.35	41.35	41.35	29.97	30.78
SPP South - Energy Price - 1H2023	340	12/6/2023	12/6/2023	30.14	30.14	30.95	30.95	30.95	30.14	41.54	41.54	41.54	39.32	37.85	37.85	37.85	37.85	37.85	37.85	40.74	41.54	41.54	41.54	41.54	41.54	33.88	34.03
SPP South - Energy Price - 1H2023	341	12/7/2023	12/7/2023	31.36	31.36	31.36	30.54	30.54	30.54	41.99	42	41.62	41.18	41.29	41.99	41.99	41.99	37.85	37.85	37.85	39.32	39.32	41.34	39.32	42	31.36	31.27
SPP South - Energy Price - 1H2023	342	12/8/2023	12/8/2023	33.71	33.71	33.71	33.71	30.32	30.32	38.92	38.92	38.92	38.92	38.92	39.23	38.92	38.92	38.92	38.92	40.76	41.69	45.61	45.61	44.36	41.72	34.03	34.03
SPP South - Energy Price - 1H2023	343	12/9/2023	12/9/2023	33.71	33.71	33.81	33.71	34.03	33.8	47.92	48.79	48.79	47.92	42.7	42.7	43.39	42.7	42.7	42.7	42.7	47.92	47.48	47.48	47.48	47.48	33.71	30.32
SPP South - Energy Price - 1H2023	344	12/10/2023	12/10/2023	30.32	30.32	30.32	30.32	30.32	30.32	42.7	42.7	42.7	42.7	15.24	2.26	13.33	12.85	21.92	42.7	44.52	47.48	47.92	47.48	44.52	42.7	30.32	30.32
SPP South - Energy Price - 1H2023	345	12/11/2023	12/11/2023	25.58	12.68	0	0	0	3.44	36.64	37.32	18.89	2.51	2.22	1.78	32.94	2.72	3.02	37.85	41.37	42.08	42.2	41.68	41.37	41.37	34.03	34.03
SPP South - Energy Price - 1H2023	346	12/12/2023	12/12/2023	34.03	34.03	34.03	34.03	34.03	35.36	41.89	48.74	48.74	42.75	41.89	41.89	41.88	39.32	41.88	41.89	41.89	41.89	42.12	41.89	41.89	41.88	34.89	35.19
SPP South - Energy Price - 1H2023	347	12/13/2023	12/13/2023	35.36	35.36	35.36	35.36	35.36	35.36	49.89	49.89	49.89	42.89	42.89	43.56	42.89	42.89	42.89	42.89	42.89	42.9	43.72	49.89	49.89	49.89	35.36	34.03
SPP South - Energy Price - 1H2023	348	12/14/2023	12/14/2023	35.1	35.1	35.36	35.36	35.1	35.1	44.57	44.57	44.57	44.57	44.57	39.32	39.32	42.83	44.57	44.57	44.57	45.14	45.1	44.57	44.57	44.57	35.1	35.1
SPP South - Energy Price - 1H2023	349	12/15/2023	12/15/2023	34.03	32.85	33.1	33.92	31.96	33.65	41.01	42.52	41.45	41.01	39.32	37.85	37.85	36.18	31.7	39.32	41	41.01	41	41	41	41	31.96	31.96
SPP South - Energy Price - 1H2023	350	12/16/2023	12/16/2023	20.53	19.23	22.32	19.35	16.15	12.93	20.76	45.01	45.01	41.31	15.24	13.97	32.42	12.85	29.83	49.8	47.92	49.8	47.92	50.1	50.1	45.01	31.95	31.95
SPP South - Energy Price - 1H2023	351	12/17/2023	12/17/2023	31.95	31.95	30.73	25.15	25.23	29.98	42.68	45.01	45.01	45.01	45.01	47.92	47.92	47.92	47.92	47.92	49.8	50.1	50.1	49.8	49.8	49.8	35.36	35.16
SPP South - Energy Price - 1H2023	352	12/18/2023	12/18/2023	31.72	34.03	31.72	34.03	34.03	34.03	40.73	40.73	41.9	41.62	40.73	40.73	40.73	40.73	40.73	40.08	40.73	41.39	40.73	40.73	37.91	39.04	31.71	31.71
SPP South - Energy Price - 1H2023	353	12/19/2023	12/19/2023	31.49	27.67	22.32	15.53	27.39	31.49	40.48	40.48	39.32	40.48	39.32	40.48	39.32	40.48	39.32	39.32	39.32	40.48	41.07	40.65	40.48	40.48	34.03	31.49
SPP South - Energy Price - 1H2023	354	12/20/2023	12/20/2023	31.03	32.29	31.03	34.03	32.29	34.03	39.95	39.32	39.32	39.95	39.95	39.95	39.95	39.95	39.95	39.95	39.95	39.95	41.32	46.53	46.53	46.53	34.51	34.03
SPP South - Energy Price - 1H2023	355	12/21/2023	12/21/2023	32.07	32.32	29.8	29.8	29.8	29.8	38.56	38.56	38.56	37.85	37.85	34.58	26.21	17.81	37.85	37.85	38.56	38.56	38.57	38.56	38.56	38.57	32.31	33.12
SPP South - Energy Price - 1H2023	356	12/22/2023	12/22/2023	31.11	31.11	30.29	30.29	31.11	30.29	39.32	41.05	41.14	39.32	39.32	39.32	39.32	37.85	35.74	37.85	37.85	37.85	40.03	41.65	41.02	41.03	31.11	31.11
SPP South - Energy Price - 1H2023	357	12/23/2023	12/23/2023	31.11	31.11	31.11	31.11	31.11	31.11	43.82	47.63	43.82	47.92	43.82	42.67	43.82	42.66	43.82	43.82	43.82	47.63	47.92	47.92	47.92	44.08	31.11	31.11
SPP South - Energy Price - 1H2023	358	12/24/2023	12/24/2023	31.11	31.11	31.11	30.29	31.11	30.29	43.82	43.82	43.82	47.92	47.92	47.92	47.92	47.92	47.92	44.29	47.92	47.92	47.92	47.92	47.92	47.92	33.05	34.03
SPP South - Energy Price - 1H2023	359	12/25/2023	12/25/2023	32.36	34.03	34.03	34.03	34.03	31.11	38.54	41.72	42.4	41.72	39.32	39.32	37.85	35.74	35.74	35.74	37.85	38.85	37.85	37.85	37.85	41.72	34.03	30.29
SPP South - Energy Price - 1H2023	360	12/26/2023	12/26/2023	28.84	28.84	28.84	28.84	24.89	16.46	37.48	37.48	37.47	37.47	37.47	1.78	2.1	2.72	3.57	32.69	37.47	37.48	37.48	37.85	37.85	37.85	32.03	32.03
SPP South - Energy Price - 1H2023	361	12/27/2023	12/27/2023	31.07	30.26	30.26	30.26	30.26	30.26	39.32	41.68	41.68	41.68	39.32	39.32	39.32	37.85	35.71	37.85	39.32	39.32	39.32	39.32	39.32	39.32	30.26	30.26
SPP South - Energy Price - 1H2023	362	12/28/2023	12/28/2023	32.6	31.74	31.74	31.74	32.6	32.6	39.71	43.36	43.36	37.85	37.85	37.85	36.95	36.95	36.95	36.95	37.85	43.36	37.85	36.95	37.85	37.85	31.74	28.58
SPP South - Energy Price - 1H2023	363	12/29/2023	12/29/2023	29.25	27.74	29.25	27.74	27.74	30.78	39.32	41.34	42.27	41.58	41.61	40.59	39.32	39.32	37.85	37.85	39.32	41.16	40.42	41.23	41.05	38.51	30.78	30.78
SPP South - Energy Price - 1H2023	364	12/30/2023	12/30/2023	30.78	30.78	30.78	30.78	31.61	31.61	44.53	45.44	44.53	44.52	43.35	43.83	43.35	43.35	39.07	39.07	43.35	44.52	44.53	43.35	43.35	40.25	30.78	27.74
SPP South - Energy Price - 1H2023	365	12/31/2023	12/31/2023	27.74	27.74	27.74	30.78	30.78	27.74	43.35	43.35	43.35	39.07	39.07	39.07	39.07	39.07	39.07	39.07	39.07	43.35	44.52	44.52	44.52	43.78	31.61	31.41
SPP South - Energy Price - 1H2023	366	1/1/2024	1/1/2024	26.23	26.23	26.23	26.23	26.24	26.24	41.95	46.89	45.61	43.12	41.95	40.76	41.95	40.76	41.95	42.57	43.57	45.61	47.04	45.51	47.04	43.57	29.12	29.12
SPP South - Energy Price - 1H2023	367	1/2/2024	1/2/2024	29.91	30.14	30.25	30.25	30.42	30.97	48.41	50.96	48.94	48.94	48.94	48.94	48.94	48.94	48.94	48.94	48.41	48.41	46.22	44.37	41.96	41.96	27.73	30.14
SPP South - Energy Price - 1H2023	368	1/3/2024	1/3/2024	25.88	25.88	25.88	25.88	25.88	25.88	44.92	45.62	44.09	41.95	41.95	41.95	41.95	41.95	41.95	43.57	44.53	46.49	44.53	44.53	43.57	43.57	29.5	28.72
SPP South - Energy Price - 1H2023	369	1/4/2024	1/4/2024	30.94	30.94	30.94	30.94	31.97	31.97	47.06	47.06	47.06	46.06	45.72	47.06	47.06	47.06	47.06	47.06	50.72	52.98	54.23	54.23	54.23	54.22	33.42	34.21
SPP South - Energy Price - 1H2023	370	1/5/2024	1/5/2024	33.17	31.97	33.17	33.17	31.97	31.97	52.47	52.48	52.47	45.52	45.52	45.52	45.52	45.52	45.52	48.48	48.48	47.43	47.44	45.52	43.57	41.95	29.79	29.79
SPP South - Energy Price - 1H2023	371	1/6/2024	1/6/2024	29.79	19.59	29.79	9.72	29.79	29.79	56.13	56.13	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	62.48	31.97	29.79
SPP South - Energy Price - 1H2023	372	1/7/2024	1/7/2024	29.79	29.79	29.79	29.79	29.79	29.79	56.13	56.13	56.13	56.13	49.49	15.9	48.44	5.66	14.55	48.69	56.13	60.23	60.23	56.13	56.13	56.13	29.79	29.79
SPP South - Energy Price - 1H2023	373	1/8/2024	1/8/2024	27.06	27.06	27.06	27.06	27.06	27.06	41.87	41.95	48.3	41.95	42.22	41.95	41.87	41.87	41.87	41.87	41.87	41.87	41.95	41.87	41.95	41.95	30.06	30.06
SPP South - Energy Price - 1H2023	374	1/9/2024	1/9/2024	29.79	29.6	26.82	29.79	29.79	29.79	47.93	48.45	47.93	44.09	41.54	47.93	45.51	47.93	47.93	45.8	47.93	48.45	50.41	50.41	50.41	48.45	31.97	31.97
SPP South - Energy Price - 1H2023	375	1/10/2024	1/10/2024	30.06	30.06	30.06	31.97	30.06	30.06	47.22	47.22	46.24	47.22	47.22	47.22	45.33	45.4	43.57	45.65	45.62	46.08	47.22	46.08	46.08	44.9	29.26	29.26
SPP South - Energy Price - 1H2023	376	1/11/2024	1/11/2024	29.01	29.01	29.01	29.01	29.01	29.01	45.76	46.89	45.6	43.98	41.95	45.6	41.95	43.57	41.95	41.95	43.57	46.89	46.89	47.37	46.89	46.89	29.8	29.8
SPP South - Energy Price - 1H2023	377	1/12/2024	1/12/2024	26.97	29.76	29.27	29.76	30.43	31.37	43.57	45.89	45.88	45.87	43.7	43.57	43.57	43.57	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	28.79	26.27
SPP South - Energy Price - 1H2023	378	1/13/2024	1/13/2024	26.27	26.27	26.27	26.8	26.27	26.97	50.81	56.07	50.81	50.8	50.81	50.81	50.81	50.8	50.8	50.8	50.81	52.12	59.96	59.96	50.81	50.81	26.7	26.97
SPP South - Energy Price - 1H2023	379	1/14/2024	1/14/2024	26.97	26.27	26.27	23.72	23.72	23.72	49.49	49.49	50.8	44.7	37.41	5.39	5.54	0	3.35	4.35	14.23	44.94	44.7	44.7	44.69	44.69	23.72	23.72
SPP South - Energy Price - 1H2023	380	1/15/2024	1/15/2024	26.94	27.5	26.94	30.25	28	31.97	44.27	54.82	54.67	48.63	48.63	48.63	48.63	48.63	44.41	44.27	44.56	48.63	50.62	60.59	54.67	56.2	36.45	36.52
SPP South - Energy Price - 1H2023	381	1/16/2024	1/16/2024	33.15	33.15	31.97	33.15	31.97	37.31	60.32	64.08	65.59	61.19	63.44	60.65	56.6	54.52	56.03	54.37	47.04	47.04	47.04	47.04	43.57	43.57	28.99	28.99
SPP South - Energy Price - 1H2023	382	1/17/2024	1/17/2024	28.78	30.55	28.78	28.78	31.97	31.97	51.53	51.53	51.53	46.76	46.76	46.76	46.76	46.76	46.76	46.76	46.76	51.53	51.53	51.53	51.53	46.76	32.9	31.97
SPP South - Energy Price - 1H2023	383	1/18/2024	1/18/2024	31.89	31.27	31.97	31.97	31.97	31.27	49.34	55.55	51.41	50.59	47.55	47.55	49.34	49.34	49.34	49.34	51.69	59.18	63.49	57.4	49.34	49.34	31.97	31.97
SPP South - Energy Price - 1H2023	384	1/19/2024	1/19/2024	32.18	31.97	31.97	31.97	31.97	32.18	50.57	50.57	50.57	50.57	58.59	57.18	52.86	50.57	50.57	50.57	50.21	50.57	50.57	45.93	45.93	45.93	32.18	31.97
SPP South - Energy Price - 1H2023	385	1/20/2024	1/20/2024	31.97	18.84	13.74	18.7	13.11	28.17	53.06	53.06	59.45	55.68	53.99	53.06	60.63	60.63	60.23	60.63	53.06	60.63	62.55	62.55	60.63	60.63	32.18	32.18
SPP South - Energy Price - 1H2023	386	1/21/2024	1/21/2024	32.67	32.18	32.18	32.18	32.18	31.97	60.63	60.63	60.63	60.63	60.63	60.63	60.63	60.63	60.63	62.55	62.55	68.1	68.11	68.07	68.25	62.55	32.18	31.97
SPP South - Energy Price - 1H2023	387	1/22/2024	1/22/2024	31.97	32.74	31.97	31.97	32.74	32.74	51.31	54.95	51.31	51.31	46.11	41.95	42.3	42.36	31.97	37.28	36.77	33.04	41.95	41.95	41.95	16.97	5.21	12.43
SPP South - Energy Price - 1H2023	388	1/23/2024	1/23/2024	2.22	-1.84	2.68	3.44	2.59	15.85	30.64	48.34	41.95	41.95	14.04	38.08	11.49	39.55	41.95	38.6	45.29	52.63	53.77	54.46	54.46	55.67	36.63	34.83
SPP South - Energy Price - 1H2023	389	1/24/2024	1/24/2024	34.14	34.14	33.13	33.13	33.13	33.13	52.16	58.21	51.17	48.71	41.95	41.95	39.7	41.95	37.04	40.05	41.09	43.57	51.86	47.42	49.68	47.7	33.13	31.97
SPP South - Energy Price - 1H2023	390	1/25/2024	1/25/2024	15.64	17.22	13.34	8.08	29.04	31.16	41.95	49.52	49.52	49.52	49.52	49.52	49.28	49.12	49.52	41.91	42.63	42.47	49.52	49.52	49.52	49.52	31.17	31.17
SPP South - Energy Price - 1H2023	391	1/26/2024	1/26/2024	12.55	13.1	13.34	12.88	12.85	30.63	43.57	43.57	41.95	15.15	27.53	41.95	41.95	10.74	41.95	41.95	9.92	48.94	57.14	57.14	60.35	54.88	33.96	33.2
SPP South - Energy Price - 1H2023	392	1/27/2024	1/27/2024	31.97	31.97	33.2	33.2	33.2	35.2	66.31	66.31	60.23	60.23	57.9	57.9	57.9	17.64	12.84	0	57.9	39.25	66.31	60.23	60.23	60.23	33.2	31.04
SPP South - Energy Price - 1H2023	393	1/28/2024	1/28/2024	31.97	33.2	33.2	33.2	35.2	35.2	66.31	73.58	66.31	66.31	60.81	60.23	66.31	66.1	60.23	57.9	22.09	66.31	66.31	66.31	60.23	62.55	31.97	31.04
SPP South - Energy Price - 1H2023	394	1/29/2024	1/29/2024	30.37	30.37	30.37	30.37	28	27.13	48.13	48.13	43.57	43.57	43.57	43.39	43.39	43.39	43.78	43.87	43.39	45.64	48.13	43.87	43.39	43.39	26.62	26.62
SPP South - Energy Price - 1H2023	395	1/30/2024	1/30/2024	25.77	25.77	25.77	26.6	29.37	29.37	46.79	48.56	46.79	46.79	43.82	43.76	42.25	41.95	41.95	41.95	41.95	42.25	41.95	41.95	38.58	42.25	25.77	25.77
SPP South - Energy Price - 1H2023	396	1/31/2024	1/31/2024	23.97	26.67	26.1	27.24	27.32	28.08	43.28	41.95	41.95	41.19	40.54	41.95	41.95	41.95	39.82	43.57	41.95	43.57	43.95	43.95	43.57	43.95	31.87	30.08
SPP South - Energy Price - 1H2023	397	2/1/2024	2/1/2024	36.03	36.03	36.87	36.87	36.03	36.03	52.3	52.91	52.3	52.3	52.02	52.3	47.01	47.8	51.98	52.24	52.3	52.3	52.3	52.91	52.3	52.3	36.87	36.03
SPP South - Energy Price - 1H2023	398	2/2/2024	2/2/2024	36.03	36.03	36.03	34.49	36.03	36.03	45.75	52.3	46.3	45.77	45.75	45.75	45.68	44.66	43.99	43.99	9.52	45.68	45.75	43.99	42.98	42.98	32.41	9.31
SPP South - Energy Price - 1H2023	399	2/3/2024	2/3/2024	1.12	4.88	12.86	18.94	18.37	32.86	22.58	40.6	52.38	43.51	43.87	45.19	1.9	1.87	0	2.04	1.87	35.16	43.51	17.89	43.51	43.51	40.24	39.41
SPP South - Energy Price - 1H2023	400	2/4/2024	2/4/2024	41.59	42.94	42.01	44.39	44.39	41.36	52.38	52.38	53.06	55.43	52.82	52.38	52.38	47.89	47.11	47.27	46.52	47.69	46.66	48.43	45.19	45.19	36.87	38.29
SPP South - Energy Price - 1H2023	401	2/5/2024	2/5/2024	33.79	33.79	28.77	33.79	13.79	33.79	45.68	47.44	43.99	9.17	9.96	1.2	0	0.49	0	0	0	0.84	1.47	0	0	3.51	1.24	0
SPP South - Energy Price - 1H2023	402	2/6/2024	2/6/2024	0	0	0	0	0	8.72	43.99	44.23	44.23	43.99	44.23	43.99	44.23	43.99	40.62	40.78	40.7	44.23	44.23	50.57	44.24	44.23	31.17	31.17
SPP South - Energy Price - 1H2023	403	2/7/2024	2/7/2024	29.6	29.6	29.6	13.36	12.7	29.6	43.99	48.4	48.4	48.4	43.99	43.77	43.99	43.99	43.99	43.03	42.33	43.99	44.31	48.4	48.4	48.4	33.73	33
SPP South - Energy Price - 1H2023	404	2/8/2024	2/8/2024	35.41	34.47	34.47	34.47	33.67	34.47	45.68	44.48	44.2	45.53	47.02	44.99	44.07	44.07	44.07	44.07	44.07	44.07	44.07	44.07	44.07	45.68	34.71	34.57
SPP South - Energy Price - 1H2023	405	2/9/2024	2/9/2024	33.48	33.32	33.82	33.97	34.23	34.23	49.49	49.49	48.99	48.99	48.98	48.99	46.06	42.91	42.84	42.84	42.84	44.87	46.32	45.58	45.11	48.98	34.22	34.22
SPP South - Energy Price - 1H2023	406	2/10/2024	2/10/2024	34.23	33.32	33.32	30.02	30.02	30.02	39.32	40.39	41.33	37.75	35.43	35.43	35.43	35.43	35.43	35.43	8.7	5.18	35.43	37.31	35.43	2.34	1.24	1.11
SPP South - Energy Price - 1H2023	407	2/11/2024	2/11/2024	1.12	0	1.46	1.61	10.18	14.56	35.43	39.32	39.32	39.32	39.32	40.1	39.32	35.43	35.43	35.43	35.43	39.32	40.39	39.32	35.43	35.43	30.02	17.32
SPP South - Energy Price - 1H2023	408	2/12/2024	2/12/2024	28.64	28.64	28.64	28.64	31.74	31.74	44.11	47.06	45.68	45.68	43.99	42.19	40.58	40.58	40.58	40.58	33.12	43.99	46.95	44.11	45.68	44.53	31.74	31.66
SPP South - Energy Price - 1H2023	409	2/13/2024	2/13/2024	28.34	31.4	29.79	31.4	31.4	31.4	43.99	46.64	43.99	40.21	40.21	40.21	10.1	8.17	1.81	2.06	1.9	23.32	43.34	40.21	40.21	9.21	8.39	1.11
SPP South - Energy Price - 1H2023	410	2/14/2024	2/14/2024	1.12	0	0	0	0	1.76	27.41	41.39	41.39	20.95	1.88	1.43	1.62	1.28	1.3	1.21	3.45	41.39	44.21	45.43	46.58	46.73	33.38	32.5
SPP South - Energy Price - 1H2023	411	2/15/2024	2/15/2024	29.21	29.21	29.21	32.4	32.4	32.4	43.99	47.86	43.14	43.99	43.99	44.51	44.08	43.45	41.28	41.28	41.28	41.53	42.73	44.44	43.95	41.8	29.21	29.21
SPP South - Energy Price - 1H2023	412	2/16/2024	2/16/2024	28.27	28.27	28.27	28.27	28.27	32.17	43.99	43.99	42.21	40.83	40.61	40.14	41.2	38.58	40.14	35.31	26.93	38	40.14	40.14	40.14	40.14	14.02	3.63
SPP South - Energy Price - 1H2023	413	2/17/2024	2/17/2024	1.26	2.1	8.31	7.45	28.27	28.27	33.37	36.98	36.98	36.98	34.41	34.73	33.51	33.36	33.36	33.36	9.42	25.37	1.45	15.58	8.92	2.34	14.02	6.36
SPP South - Energy Price - 1H2023	414	2/18/2024	2/18/2024	3.91	6.64	0	4.65	28.27	28.27	33.36	33.37	33.37	36.97	33.37	33.57	33.37	33.37	33.37	33.36	33.37	33.37	33.37	36.97	37.97	37.97	32.17	31.33

SPP South - Energy Price - 1H2023	415	2/19/2024	2/19/2024	36.63	36.87	36.63	36.87	36.87	36.87	53.03	53.66	53.66	53.66	53.66	53.66	53.66	53.03	53.03	48.05	53.03	53.03	53.03	53.03	53.03	47.99	32.93	32.93
SPP South - Energy Price - 1H2023	416	2/20/2024	2/20/2024	32.15	32.15	32.15	32.15	32.15	34.01	44.86	46.49	44.86	43.99	44.86	34.99	34.5	40.7	0.42	25.69	28.5	36.42	42.48	44.72	41.52	39.55	32.15	29.6
SPP South - Energy Price - 1H2023	417	2/21/2024	2/21/2024	35.6	35.6	28.78	35.6	7.93	35.6	43.99	45.68	42.46	38.36	42.52	39.05	33.08	0	1.03	0	0	0	5.55	41.47	41.22	12.63	4.65	1.11
SPP South - Energy Price - 1H2023	418	2/22/2024	2/22/2024	1.12	1.59	1.46	10.71	10.71	13.03	46.38	46.38	43.99	43.99	43.99	1.94	37.38	0	39.63	43.99	37.64	43.99	44.02	46.38	46.39	46.38	36.87	33.86
SPP South - Energy Price - 1H2023	419	2/23/2024	2/23/2024	31.81	31.81	31.81	31.81	31.81	31.81	43.99	44.11	44.63	43.9	43.9	1.38	0	0	0	0	1.9	1.68	43.22	43.9	43.9	43.9	31.81	31.81
SPP South - Energy Price - 1H2023	420	2/24/2024	2/24/2024	31.81	31.81	31.81	31.81	31.81	31.81	37.54	38.89	37.54	37.54	14.02	10.26	5.42	1.87	1.79	9.95	1.87	8.7	37.54	37.54	37.54	37.54	31.81	31.81
SPP South - Energy Price - 1H2023	421	2/25/2024	2/25/2024	31.81	31.81	31.81	31.81	31.81	31.81	37.54	37.54	37.54	36.12	31.34	37.54	6.66	0	-14.57	0	-16.95	1.47	1.79	12.23	37.54	37.54	31.81	31.81
SPP South - Energy Price - 1H2023	422	2/26/2024	2/26/2024	29.74	32.85	29.74	29.74	32.85	32.99	45.68	48.59	45.68	45.68	46.42	46.19	46.01	45.75	45.75	45.75	48.49	48.59	48.59	48.59	45.68	43.99	32.99	32.99
SPP South - Energy Price - 1H2023	423	2/27/2024	2/27/2024	33.59	33.59	33.59	31.67	33.59	33.61	45.68	49.31	45.68	43.72	43.72	43.72	43.72	43.72	35.64	2.06	30.53	6.48	33.19	39.79	14.24	40.75	28.03	11.13
SPP South - Energy Price - 1H2023	424	2/28/2024	2/28/2024	2.08	1.91	1.99	1.94	12.59	33.13	43.99	47.5	43.99	43.23	43.23	43.23	33.69	33.32	4.59	9.6	8.62	7.98	7.54	10.93	8.39	4.76	1.76	0
SPP South - Energy Price - 1H2023	425	2/29/2024	2/29/2024	0	0	1.77	1.94	1.77	1.57	43.32	43.32	9.24	1.62	1.7	9.24	1.8	39.63	37.79	39.63	36.46	14.57	43.99	43.99	45.68	43.99	36.71	33.21
SPP South - Energy Price - 1H2023	426	3/1/2024	3/1/2024	26.93	26.93	26.93	26.93	26.93	26.93	38.32	39.66	39.19	38.89	39.78	39.73	38.49	38.29	38.29	37.7	37.7	38.29	38.7	38.29	36.3	33.55	21.7	22.53
SPP South - Energy Price - 1H2023	427	3/2/2024	3/2/2024	10.4	6.35	5.99	1.44	1.32	7.61	14.94	2.64	0	0	0	-18.94	-19.5	-28.87	-28.48	-16.96	-16.55	2.22	8.59	2.3	2.04	0	0	1.08
SPP South - Energy Price - 1H2023	428	3/3/2024	3/3/2024	8.4	24.22	8.76	8.5	8.28	7.59	51.48	51.48	17.47	2.16	0	0	0	2.18	2.49	0	0	0	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	429	3/4/2024	3/4/2024	0	0	8.76	1.44	8.31	24.61	32.56	34.99	20.72	32.56	28.28	36.07	37.7	39.75	39.94	33.89	32.97	33.92	34.15	36.3	36.3	36.3	25.87	1.51
SPP South - Energy Price - 1H2023	430	3/5/2024	3/5/2024	1.13	0	0	0	1.81	2.25	8.58	8.41	1.42	1.34	0	0	0	0	0	0	0	0	4.62	36.3	36.3	36.39	23.53	23.53
SPP South - Energy Price - 1H2023	431	3/6/2024	3/6/2024	28.04	16.5	12	28.04	27.53	28.04	43.44	43.44	41.48	39.74	40.72	43.44	43.44	43.43	41.08	43.44	43.44	43.44	43.44	49.07	43.44	43.44	28.04	28.04
SPP South - Energy Price - 1H2023	432	3/7/2024	3/7/2024	28.05	28.05	25.21	27.53	27.53	28.05	43.12	44.72	41.17	41.78	39.61	39.61	36.78	36.3	37.7	9.8	9.61	36.3	39.61	44.37	44.19	43.72	28.05	28.05
SPP South - Energy Price - 1H2023	433	3/8/2024	3/8/2024	24.79	25.51	25.57	25.53	26.3	28.16	40.31	40.31	40.31	37.7	37.7	35.74	36.3	35.74	35.74	35.74	35.74	36.3	36.3	36.3	35.74	35.74	10.27	8.58
SPP South - Energy Price - 1H2023	434	3/9/2024	3/9/2024	1.55	9.13	1.49	10.09	18.93	22.34	47.47	47.47	46.36	47.47	47.47	38.22	47.47	49.56	52.68	52.69	53.96	53.4	53.65	54.91	53.65	52.94	24.79	22.95
SPP South - Energy Price - 1H2023	435	3/10/2024	3/10/2024	22.81	22.34	23.21	22.34	24.79	24.79	52.69	52.69	48.84	47.47	47.47	52.68	52.69	42.8	5.51	15.8	45.59	49.69	54.64	49.56	47.47	47.47	9.2	8.02
SPP South - Energy Price - 1H2023	436	3/11/2024	3/11/2024	1.89	6.22	0	0	1.32	7.61	36.3	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	11.98	1.26	1.43	1.26	1.09	1.31	1.08
SPP South - Energy Price - 1H2023	437	3/12/2024	3/12/2024	1.55	1.42	1.49	1.44	5.82	23.36	38.37	36.3	36.3	36.3	36.3	37.7	38.37	37.7	37.7	37.7	37.7	37.7	37.7	38.37	36.3	36.3	23.36	23.36
SPP South - Energy Price - 1H2023	438	3/13/2024	3/13/2024	23.74	23.74	10	21.41	21.41	21.41	36.3	34.49	34.49	19.67	36.3	36.3	36.3	34.49	34.49	37.7	36.3	37.1	39.82	40.35	38.89	37.7	25.02	22.05
SPP South - Energy Price - 1H2023	439	3/14/2024	3/14/2024	25.28	22.77	23.71	25.28	25.33	25.97	40.97	40.97	38.66	39.04	36.3	36.3	40.81	38.76	36.3	36.3	36.3	35.55	35.55	35.55	35.55	35.55	23.61	22.77
SPP South - Energy Price - 1H2023	440	3/15/2024	3/15/2024	23.67	21.35	21.35	21.35	21.35	21.35	33.64	33.64	36.3	36.3	34.38	38.79	37.7	37.7	37.7	37.7	37.7	37.7	36.3	36.3	36.3	33.64	21.35	8.58
SPP South - Energy Price - 1H2023	441	3/16/2024	3/16/2024	7.15	1.42	8.77	8.83	1.32	1.17	11.86	6.71	2.29	2.49	0	0	0	0	0	0	3.62	10.62	10.69	18.02	14.81	20.32	21.35	8.58
SPP South - Energy Price - 1H2023	442	3/17/2024	3/17/2024	16.01	14.73	17.06	10.83	21.35	21.35	51.61	51.65	51.65	51.65	51.65	50.3	50.3	45.37	50.3	45.37	45.73	45.37	45.37	45.37	45.37	45.37	21.35	21.35
SPP South - Energy Price - 1H2023	443	3/18/2024	3/18/2024	22.93	22.93	22.93	22.93	22.93	22.93	36.3	35.77	38.98	38.29	36.66	36.57	35.77	36.77	36.69	35.77	35.77	35.77	35.77	35.77	8.78	4.93	0	0
SPP South - Energy Price - 1H2023	444	3/19/2024	3/19/2024	0	0	0	0	0	7.61	33.73	9.1	7.27	2.05	1.41	1.3	0	0	0	0	0	0	1.26	11.18	35.25	35.25	22.54	22.54
SPP South - Energy Price - 1H2023	445	3/20/2024	3/20/2024	12.8	4.85	1.49	10.09	8.65	22.6	35.33	35.33	30.05	3.68	1.41	0	0	9.19	1.54	7.16	9.61	1.37	8.88	35.33	36.3	36.3	23.56	22.6
SPP South - Energy Price - 1H2023	446	3/21/2024	3/21/2024	24.04	26.72	24.86	26.72	26.72	27.46	42.93	42.93	42.93	43.42	42.93	42.93	42.93	42.91	42.93	41.53	40.72	37.7	40.08	37.26	37.26	37.26	9.59	3.7
SPP South - Energy Price - 1H2023	447	3/22/2024	3/22/2024	4.03	1.42	0	1.44	8.31	1.17	8.67	10.29	0.82	1.34	0	1.3	1.22	1.35	4.88	14.5	36.12	36.12	36.3	36.3	36.12	36.12	23.19	23.19
SPP South - Energy Price - 1H2023	448	3/23/2024	3/23/2024	10.44	23.19	23.19	25.51	24.09	25.76	54.74	55.81	53.91	55.33	54.74	54.74	49.28	54.74	54.74	25.26	49.28	19.08	49.28	50.56	49.28	49.28	23.19	23.19
SPP South - Energy Price - 1H2023	449	3/24/2024	3/24/2024	23.19	23.19	23.19	24.09	24.02	23.88	54.74	54.74	54.74	54.74	54.74	54.74	54.74	49.28	51.2	36.2	31.31	50.47	49.28	49.28	49.28	20.32	23.19	8.02
SPP South - Energy Price - 1H2023	450	3/25/2024	3/25/2024	9.05	23.67	23.67	12.44	23.67	26.72	42.36	36.76	37.03	39.6	36.76	42.36	42.35	39.82	42.35	42.35	42.35	42.36	42.35	42.35	42.35	38.41	26.3	25.92
SPP South - Energy Price - 1H2023	451	3/26/2024	3/26/2024	23.09	23.98	10.01	23.09	23.42	25.64	37.7	35.98	36.3	38.28	37.7	40.2	38.24	39.82	41.46	41.91	41.46	41.46	41.46	41.46	41.46	41.46	26.34	26.34
SPP South - Energy Price - 1H2023	452	3/27/2024	3/27/2024	25.28	25.28	24.62	24.61	24.62	24.62	37.7	37.7	37.7	39.04	37.77	40.08	37.45	36.36	36.3	36.3	36.3	36.3	37.7	36.89	36.3	34.76	22.19	22.81
SPP South - Energy Price - 1H2023	453	3/28/2024	3/28/2024	20.98	23.24	23.22	22	23.87	23.76	36.3	36.3	36.3	37.7	37.7	36.3	36.3	37.7	36.3	36.3	36.3	33.4	35.12	38.22	37.7	38.22	23.24	23
SPP South - Energy Price - 1H2023	454	3/29/2024	3/29/2024	19.7	19.7	21.79	19.7	21.79	21.79	31.42	36.25	32.31	36.25	36.25	32.46	32.73	36.25	36.25	36.25	36.25	36.25	34.71	36.35	36.3	36.54	22.36	21.79
SPP South - Energy Price - 1H2023	455	3/30/2024	3/30/2024	19.7	21.05	21.15	21.79	22.36	21.79	47.52	47.52	47.52	47.52	47.52	47.52	46.31	47.52	47.52	47.52	48.85	48.85	47.8	49.52	47.52	47.52	22.36	21.79
SPP South - Energy Price - 1H2023	456	3/31/2024	3/31/2024	21.79	21.79	19.7	21.16	21.79	21.79	46.31	46.31	41.86	41.86	1.88	0	0	0	0	0	0	0.31	12.79	3.29	3.79	0	0	0
SPP South - Energy Price - 1H2023	457	4/1/2024	4/1/2024	0	0	0	0	0	0.12	2.46	0	0	0	14.23	38.34	42.56	41.68	38.34	38.34	42.56	42.56	43.02	43.02	43.02	43.02	25	25
SPP South - Energy Price - 1H2023	458	4/2/2024	4/2/2024	26.57	26.57	26.57	26.57	26.57	26.57	42.56	40.31	42.56	42.56	40.3	11.23	20.04	37.72	36.89	1.78	40.31	40.31	40.3	40.31	40.3	38.59	13.05	4.98
SPP South - Energy Price - 1H2023	459	4/3/2024	4/3/2024	6.6	12.8	5.54	4.14	24.54	24.54	40.56	40.56	31.52	32.58	37.54	18.64	14.93	7.42	10.89	7.59	3.92	7.05	7.66	8.03	2.76	0	0	0
SPP South - Energy Price - 1H2023	460	4/4/2024	4/4/2024	0	0	0	0	1.74	4.15	15.16	33.77	40.58	14.34	14.6	9.03	18.6	40.58	15.16	1.78	15.16	40.58	2.03	2.39	2.76	2.6	0	0
SPP South - Energy Price - 1H2023	461	4/5/2024	4/5/2024	0	0	0	0	1.74	4.44	3.33	9.27	14.89	38.45	38.45	14.38	4.88	1.78	15.16	16.21	1.82	2.6	9.31	38.45	38.45	38.45	23.45	14.61
SPP South - Energy Price - 1H2023	462	4/6/2024	4/6/2024	15.03	17.05	25.56	24.31	25.56	25.56	41.92	41.92	38.46	38.46	43.03	38.46	38.46	38.46	38.46	11.16	38.46	41.81	38.46	38.46	38.46	38.46	23.45	23.45
SPP South - Energy Price - 1H2023	463	4/7/2024	4/7/2024	23.45	23.45	23.45	23.45	6.84	18.4	38.46	31.23	38.46	38.46	41.92	38.56	41.92	41.92	38.46	41.92	41.92	41.92	42.97	43.03	43.03	41.92	25.56	24.09
SPP South - Energy Price - 1H2023	464	4/8/2024	4/8/2024	22.8	12.8	22.99	22.8	22.8	24.83	42.56	39.93	39.84	37.54	37.54	2.28	37.54	8.68	1.93	9.43	1.82	1.91	37.54	37.54	37.54	2.99	1.83	1.58
SPP South - Energy Price - 1H2023	465	4/9/2024	4/9/2024	2.05	0	0	0	1.74	3.67	33.6	2.59	2.29	2.07	2.34	2.28	14.93	38.74	38.74	38.74	38.74	38.74	44.12	44.12	44.12	42.56	24.54	10.79
SPP South - Energy Price - 1H2023	466	4/10/2024	4/10/2024	0	1.97	2.4	4.24	12.11	20.83	39.48	42.56	39.48	39.48	39.48	39.48	39.48	39.48	39.48	42.02	39.48	39.48	39.48	39.48	39.48	25.68	1.83	0.02
SPP South - Energy Price - 1H2023	467	4/11/2024	4/11/2024	1.35	1.97	8.39	1.8	7.97	23.93	39.12	39.12	39.12	39.12	39.12	39.12	41.08	39.12	39.12	39.12	39.12	39.12	39.12	42.56	39.12	39.12	23.93	23.93
SPP South - Energy Price - 1H2023	468	4/12/2024	4/12/2024	23.76	23.76	23.76	25.91	25.91	25.91	44.2	42.56	38.54	32.61	2.34	2.28	1.86	1.78	1.93	1.78	1.82	1.91	0	9.79	2.76	38.89	23.76	2.02
SPP South - Energy Price - 1H2023	469	4/13/2024	4/13/2024	0	0	0	0	0	0	0	0	0	0	0	0	-24.49	-23.4	0	0	0	0	0	18.13	38.97	38.98	23.76	23.76
SPP South - Energy Price - 1H2023	470	4/14/2024	4/14/2024	23.76	23.76	19.25	23.65	23.76	23.76	38.98	38.97	6.57	27.71	38.98	38.98	38.97	25.14	19.87	38.97	38.98	42.49	43.62	43.62	43.62	42.49	25.9	23.76
SPP South - Energy Price - 1H2023	471	4/15/2024	4/15/2024	24.68	24.16	23.52	23.52	23.52	23.52	38.96	38.55	38.54	38.55	35.54	38.54	2.92	6.89	15.16	16.21	16.76	2.6	35.13	15.92	18.51	18.34	13.05	11.64
SPP South - Energy Price - 1H2023	472	4/16/2024	4/16/2024	8.05	1.97	0	1.8	12.11	23.87	41.96	42.56	39.03	38.73	32.64	27.85	8.4	8.68	27.85	27.69	16.32	36.25	39.03	42.56	39.03	39.93	18.93	21.45
SPP South - Energy Price - 1H2023	473	4/17/2024	4/17/2024	24.04	24.03	24.03	24.04	24.04	26.21	39.27	22.18	14.89	14.34	0	12.01	1.86	0	1.93	13.06	13.44	22.76	13.26	2.39	2.76	2.99	0	1.58
SPP South - Energy Price - 1H2023	474	4/18/2024	4/18/2024	23.82	0	0	0	1.74	1.64	3.33	2.38	8.5	2.07	2.05	5.91	1.86	1.78	1.93	1.78	1.82	1.91	2.03	4.36	2.76	18.34	13.4	11.64
SPP South - Energy Price - 1H2023	475	4/19/2024	4/19/2024	13.3	12.8	13.4	11.73	26.12	26.12	44.01	43.64	43.64	43.64	44.01	44.01	43.64	43.64	44.01	43.64	44.01	43.64	43.64	43.63	43.63	42.56	26.12	25.44
SPP South - Energy Price - 1H2023	476	4/20/2024	4/20/2024	25.44	25.44	25.44	23.35	25.44	25.44	42.83	41.73	41.72	41.73	41.73	38.29	38.29	18.03	11.56	17.78	20.11	19.33	11.16	11.47	3.31	3.58	1.83	11.33
SPP South - Energy Price - 1H2023	477	4/21/2024	4/21/2024	6.29	23.04	20.12	23.35	20.12	23.35	0	38.29	9.72	2.49	5.11	41.72	41.72	38.29	41.73	42.83	42.54	42.83	42.79	41.72	40.06	38.29	23.35	23.35
SPP South - Energy Price - 1H2023	478	4/22/2024	4/22/2024	7.14	7.73	6.51	6.32	14.9	22.55	42.39	42.56	42.56	42.54	42.73	42.56	42.73	42.73	42.73	42.73	42.73	43.95	42.73	42.73	42.73	42.56	25.27	24.56
SPP South - Energy Price - 1H2023	479	4/23/2024	4/23/2024	25.27	25.27	25.27	25.94	25.27	25.27	43.4	37.87	42.56	42.56	42.56	42.56	42.56	42.56	42.56	42.56	42.56	43.76	43.4	43.4	43.4	43.4	25.27	25.27
SPP South - Energy Price - 1H2023	480	4/24/2024	4/24/2024	22.49	23.56	22.49	23.39	24.48	25.13	42.29	42.56	42.56	42.56	42.56	42.29	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	0	0
SPP South - Energy Price - 1H2023	481	4/25/2024	4/25/2024	11.49	0	12.49	0	21.91	22.38	36.74	36.74	36.74	36.74	30.61	2.28	1.86	1.78	1.93	1.78	1.82	1.91	2.67	8.08	36.74	36.74	2.81	1.58
SPP South - Energy Price - 1H2023	482	4/26/2024	4/26/2024	2.05	0	0	1.8	6.62	22.17	40.94	41.81	36.45	41.81	36.45	40.75	36.45	36.45	3.87	36.45	36.45	0	0	0	0	0	0	0
SPP South - Energy Price - 1H2023	483	4/27/2024	4/27/2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.19	9.88	36.37	13.05	11.64
SPP South - Energy Price - 1H2023	484	4/28/2024	4/28/2024	7.88	8.62	7.45	7.93	11.93	22.17	14.14	14.07	0	0	0	0	0	0	0	0	21.14	36.37	36.37	39.58	39.58	36.37	22.17	22.17
SPP South - Energy Price - 1H2023	485	4/29/2024	4/29/2024	23.01	1.98	0	3.16	1.98	4.57	2.41	2.05	0	0	0	2.7	11.36	8.29	37.66	10.07	26.2	3.78	9.6	37.66	12.39	10.44	8.76	7.31
SPP South - Energy Price - 1H2023	486	4/30/2024	4/30/2024	6.91	1.97	5.39	2	1.98	6.91	13.86	12.75	38.42	38.42	38.83	44.2	43.95	44.2	44.33	44.33	44.33	44.33	44.33	44.2	43.95	44.2	26.35	25.66
SPP South - Energy Price - 1H2023	487	5/1/2024	5/1/2024	33.23	32.53	33.23	30.82	30.51	33.23	32.7	34.05	34.05	34.25	34.05	34.05	34.25	34.53	34.53	35.37	35.37	35.06	35.37	35.06	34.53	34.25	33.23	33.23
SPP South - Energy Price - 1H2023	488	5/2/2024	5/2/2024	31.11	32.12	30.97	32.12	32.12	32.12	33.32	33.32	33.32	31.85	29.44	29.3	29.61	33.32	29.09	29.09	29.09	33.32	30.31	29.09	29.09	6.18	2.74	9.5
SPP South - Energy Price - 1H2023	489	5/3/2024	5/3/2024	7.64	2.64	2.73	2.68	27.85	27.85	26.03	4.12	0.98	27.58	23.52	27.59	9.13	10.98	20.96	27.7	31.77	31.77	2.9	13.25	31.96	27.7	7.73	7.27
SPP South - Energy Price - 1H2023	490	5/4/2024	5/4/2024	9.24	0	0	-3.35	6.35	27.42	28.4	14.24	28.4	28.4	28.4	19.63	28.4	28.4	28.4	28.4	28.4	28.4	28.4	30.07	28.4	28.4	27.85	11.37
SPP South - Energy Price - 1H2023	491	5/5/2024	5/5/2024	7.94	11.18	0	0	4.86	0	6.25	6.25	-1.9	5.75	28.4	9.22	27	13.87	25.5	28.4	28.4	28.4	30.87	31.66	31.66	31.66	30.26	30.26
SPP South - Energy Price - 1H2023	492	5/6/2024	5/6/2024	29.45	29.45	27.12	29.45	29.45	29.45	31.26	28.28	27.09	27.91	27.26	27.09	27.09	27.09	27.09	24.21	27.09	27.09	27.4	31.26	33.59	31.26	30.2	30.2
SPP South - Energy Price - 1H2023	493	5/7/2024	5/7/2024	30.42	30.42	29.72	30.42	30.42	30.42	31.9	31.9	31.9	31.9	31.7	31.9	31.9	31.9	29.85	27.82	31.9	28.36	32.1	31.32	31.9	28.04	27.99	27.99
SPP South - Energy Price - 1H2023	494	5/8/2024	5/8/2024	29.66	29.66	29.66	29.66	29.66	33.12	33.46	33.29	31.63	33.63	33.71	33.71	33.71	33.71	33.71	33.46	33.46	33.71	33.71	33.71	33.71	33.46	30.74	29.66
SPP South - Energy Price - 1H2023	495	5/9/2024	5/9/2024	15.04	11.58	9.4	9.63	30.05	32.72	32.17	29.54	29.54	29.54	29.54	12.22	29.54	29.54	29.54	27.18	29.54	29.54	32.94	33.83	33.83	32.33	30.06	15.43
SPP South - Energy Price - 1H2023	496	5/10/2024	5/10/2024	6.59	13.81	29.98	29.98	29.98	32.64	32.98	29.48	32.76	33.57	34.01	34.02	35.37	34.02	34.01	34.02	34.02	34.02	37.74	35.37	35.37	34.02	37.06	33.49
SPP South - Energy Price - 1H2023	497	5/11/2024	5/11/2024	33.49	33.49	33.49	32.63	31.77	33.49	34.16	35.3	36.91	39.7	39.79	37.66	40.24	40.24	42.45	42.45	36.2	37.54	40.97	42.45	44.09	40.25	37.06	35.43

SPP South - Energy Price - 1H2023	498	5/12/2024	5/12/2024	33.49	32.64	32.64	32.64	33.49	33.49	34.16	34.16	34.16	35.89	39.7	41.19	42.45	42.45	42.45	40.24	40.24	41.19	36.87	33.29	33.29	31.25	29.98	29.98
SPP South - Energy Price - 1H2023	499	5/13/2024	5/13/2024	15.04	30.23	7.21	30.23	30.23	30.23	29.69	33.99	31.27	33.99	34.05	34.05	34.26	34.26	34.05	34.05	29.69	33.99	33.99	29.69	29.69	32.29	21.49	7.77
SPP South - Energy Price - 1H2023	500	5/14/2024	5/14/2024	7.66	30.85	25.18	30.85	25.77	30.85	30.2	26.77	27.57	26.77	2.71	8.04	9.13	30.2	30.21	34.57	34.57	30.2	30.21	32.33	32.36	24.59	16.7	22.48
SPP South - Energy Price - 1H2023	501	5/15/2024	5/15/2024	17.13	19.91	0	20.68	20.78	31.1	28.41	30.41	31.79	34.8	34.8	34.8	34.8	35.09	34.8	34.8	34.8	34.8	35.09	35.09	35.09	35.09	31.1	31.1
SPP South - Energy Price - 1H2023	502	5/16/2024	5/16/2024	34.31	34.31	31.48	31.48	31.48	34.31	30.74	33.28	35.16	35.37	35.47	35.47	35.47	35.47	35.47	35.47	35.37	35.37	35.37	35.47	35.47	35.16	34.31	31.48
SPP South - Energy Price - 1H2023	503	5/17/2024	5/17/2024	31.23	31.23	31.23	31.23	31.23	31.47	34.05	31.25	32.72	34.92	34.92	34.92	34.05	34.92	34.92	34.92	35.22	34.92	34.92	35.22	35.22	34.05	34.93	34.03
SPP South - Energy Price - 1H2023	504	5/18/2024	5/18/2024	34.03	31.23	12.86	31.23	31.23	31.23	31.85	34.71	35.63	35.83	35.63	35.63	35.63	34.71	35.5	35.63	31.85	34.71	34.71	34.74	34.71	31.85	4.32	13
SPP South - Energy Price - 1H2023	505	5/19/2024	5/19/2024	31.23	17.77	2.73	7.35	25.81	2.25	2.4	21.73	19.99	31.85	31.85	34.71	34.71	31.85	31.85	34.71	34.71	31.85	29.3	31.85	31.85	31.67	31.23	31.23
SPP South - Energy Price - 1H2023	506	5/20/2024	5/20/2024	2.71	2.64	7.65	29.74	32.05	32.05	31.17	28.88	31.17	29.34	31.92	35.37	35.32	34.05	34.05	34.05	34.05	34.05	34.05	35.37	35.37	34.05	32.05	19.19
SPP South - Energy Price - 1H2023	507	5/21/2024	5/21/2024	2.71	32.23	7.21	14.69	32.23	32.23	31.32	31.32	31.77	34.05	34.05	35.37	34.05	35.37	34.05	34.05	34.05	34.05	31.32	34.05	34.05	31.32	32.23	30.62
SPP South - Energy Price - 1H2023	508	5/22/2024	5/22/2024	0	0	2.73	2.68	7.03	2.25	4.49	3.47	3.92	4.13	7.16	26.55	31.1	31.1	31.1	29.15	8.14	7.51	7.1	31.1	31.1	27.54	2.74	2.82
SPP South - Energy Price - 1H2023	509	5/23/2024	5/23/2024	2.71	0	0	0	2.64	2.25	1.93	6.63	6.37	6.1	4.82	24.47	23.64	30.96	30.96	30.96	34.05	30.96	30.96	30.96	35.46	34.05	31.8	31.8
SPP South - Energy Price - 1H2023	510	5/24/2024	5/24/2024	18.03	26.47	26.83	15.7	24.34	30.74	30.07	30.07	30.08	30.08	30.08	30.08	34.05	30.08	30.08	30.08	30.08	34.05	34.05	30.08	30.07	2.24	2.74	30.74
SPP South - Energy Price - 1H2023	511	5/25/2024	5/25/2024	0	0	0	0	0	0	0	0	7.94	0	27.9	31.36	31.36	31.36	35.06	34.16	36.78	35.06	34.16	35.06	31.36	31.36	16.63	12.05
SPP South - Energy Price - 1H2023	512	5/26/2024	5/26/2024	0	0	0	0	0	11.4	0	0	0	31.36	34.16	31.36	34.16	31.36	31.36	18.32	17.44	14.24	14.36	34.16	31.36	34.16	30.74	15.43
SPP South - Energy Price - 1H2023	513	5/27/2024	5/27/2024	30.74	0	2.73	2.68	7.03	30.74	1.93	1.64	1.58	29.51	31.92	34.05	34.05	34.05	34.75	34.05	34.75	34.47	34.47	34.47	34.05	34.05	30.74	30.74
SPP South - Energy Price - 1H2023	514	5/28/2024	5/28/2024	31.62	2.64	7.65	30.74	31.62	31.62	8.52	30.81	33.09	31.39	35.37	35.6	35.6	35.6	35.6	37.26	36.74	37.05	37.03	36.59	35.6	35.6	35.38	34.46
SPP South - Energy Price - 1H2023	515	5/29/2024	5/29/2024	35.17	35.17	35.47	35.17	35.17	35.17	34.05	31.87	32.83	34.05	35.37	35.37	35.37	35.88	35.88	35.88	35.88	35.37	32.94	34.05	31.34	9.24	2.74	0
SPP South - Energy Price - 1H2023	516	5/30/2024	5/30/2024	11.26	6.26	-16.79	-13.9	3.86	32.47	6.48	31.52	31.72	31.52	34.05	31.52	31.52	34.05	34.05	34.05	35.37	34.05	31.52	31.52	30.04	31.52	9.51	32.47
SPP South - Energy Price - 1H2023	517	5/31/2024	5/31/2024	33	2.28	1.97	-16.7	0	10.85	8.17	32.02	32.02	21.73	32.02	32.02	32.02	32.02	32.02	32.02	32.02	32.02	32.01	32.01	32.02	31.57	32.12	5.99
SPP South - Energy Price - 1H2023	518	6/1/2024	6/1/2024	7.61	5.42	0	1.47	5.58	1.45	1.65	1.56	29.45	29.45	32.14	32.14	29.45	32.14	32.14	32.14	32.14	32.14	33.01	33.01	33.01	32.14	27.27	27.27
SPP South - Energy Price - 1H2023	519	6/2/2024	6/2/2024	25.76	27.27	24.99	27.27	27.27	27.27	32.14	32.14	33.01	33.01	33.01	33.01	36.5	36.5	36.5	36.5	36.5	36.5	36.5	33.01	33.01	32.14	27.27	24.99
SPP South - Energy Price - 1H2023	520	6/3/2024	6/3/2024	21.57	21.57	21.57	21.57	21.57	21.57	30.99	30.99	30.99	30.99	35.56	35.56	35.56	35.56	35.81	35.56	35.56	36.88	35.56	35.81	35.81	35.56	23.47	23.47
SPP South - Energy Price - 1H2023	521	6/4/2024	6/4/2024	22.31	21.58	22.95	21.11	22.63	21.28	31.63	34.93	34.93	35.16	36.88	37.65	37.07	38.24	36.88	38.24	36.88	36.88	39.63	38.49	38.52	36.88	27.67	27.38
SPP South - Energy Price - 1H2023	522	6/5/2024	6/5/2024	24.82	23.93	23.93	23.76	23.93	23.93	35.63	35.38	35.38	35.63	35.38	36.88	38.81	35.63	38.81	40.26	38.03	38.81	38.28	35.63	35.63	35.38	23.93	21.44
SPP South - Energy Price - 1H2023	523	6/6/2024	6/6/2024	22.07	20.84	20.84	20.84	20.84	21.07	34.57	34.57	34.57	34.79	34.79	35.58	36.88	35.58	36.88	36.88	34.79	34.79	34.79	34.79	34.79	34.79	20.84	20.84
SPP South - Energy Price - 1H2023	524	6/7/2024	6/7/2024	19.76	19.76	19.76	5.76	19.76	19.76	28.79	32.34	33.1	33.1	33.88	36.88	36.88	36.88	36.88	35.94	36.15	35.94	35.94	36.88	36.88	36.88	22.83	21.45
SPP South - Energy Price - 1H2023	525	6/8/2024	6/8/2024	21.45	19.76	19.76	21.45	21.45	21.45	25.28	25.28	27.66	30.37	36.5	36.5	36.5	36.5	39.76	37.91	36.5	30.37	27.25	25.92	26.44	25.92	21.45	21.45
SPP South - Energy Price - 1H2023	526	6/9/2024	6/9/2024	21.45	21.45	21.99	21.99	21.99	21.99	25.28	25.28	25.28	25.28	25.28	25.28	25.92	25.28	25.28	25.28	25.92	25.92	25.92	26.6	25.92	25.92	21.45	21.99
SPP South - Energy Price - 1H2023	527	6/10/2024	6/10/2024	25.63	24.97	25.59	24.97	24.97	25.59	37.4	37.4	37.71	38.31	38.31	38.31	38.31	37.71	37.71	37.71	37.71	37.4	37.4	36.88	36.88	32.63	22.93	24.97
SPP South - Energy Price - 1H2023	528	6/11/2024	6/11/2024	23.58	24.38	25.71	23.58	25.71	25.71	38.29	38.29	38.31	38.31	38.63	38.63	38.31	38.63	40.71	40.87	38.63	38.29	38.29	39.88	38.63	38.63	26.39	23.58
SPP South - Energy Price - 1H2023	529	6/12/2024	6/12/2024	1.95	1.7	24.18	26.37	26.37	27.05	36.88	39.1	39.1	39.46	39.47	40.08	40.04	40.08	43.47	48.64	41.62	39.47	39.1	39.47	39.46	39.1	26.71	26.37
SPP South - Energy Price - 1H2023	530	6/13/2024	6/13/2024	25.79	25.79	25.79	25.79	25.79	26.47	38.31	38.39	38.73	40.24	41.49	42.58	42.91	49.69	49.69	49.69	49.69	40.43	40.41	39.28	38.82	38.59	24.21	23.65
SPP South - Energy Price - 1H2023	531	6/14/2024	6/14/2024	22.76	23.71	24.79	24.79	24.79	25.44	36.88	36.88	35.17	33.92	36.88	37.17	37.18	37.48	35.51	37.17	36.88	36.88	36.88	37.18	37.17	36.88	24.79	24.79
SPP South - Energy Price - 1H2023	532	6/15/2024	6/15/2024	22.76	22.76	22.76	22.76	22.76	5.65	8.26	26.83	26.83	29.22	29.22	29.22	29.99	29.99	29.99	29.99	29.99	29.22	29.99	29.99	29.99	29.22	24.79	24.79
SPP South - Energy Price - 1H2023	533	6/16/2024	6/16/2024	22.76	21.07	22.76	22.76	22.76	22.37	26.83	26.83	29.22	29.22	29.22	29.22	29.99	29.99	29.99	29.22	29.22	29.22	29.22	29.22	29.99	29.99	24.79	24.79
SPP South - Energy Price - 1H2023	534	6/17/2024	6/17/2024	23.74	23.74	23.74	23.74	23.74	23.74	33.9	33.63	36.55	33.63	36.88	33.63	33.63	33.63	36.88	33.63	36.88	36.88	36.88	38.31	38.31	36.88	25.89	23.74
SPP South - Energy Price - 1H2023	535	6/18/2024	6/18/2024	9	5.86	7.65	1.47	6.85	23.02	32.75	32.75	32.75	32.94	37.53	37.85	36.88	36.88	37.53	37.53	37.85	37.85	37.53	37.53	37.53	37.53	25.75	25.75
SPP South - Energy Price - 1H2023	536	6/19/2024	6/19/2024	25.68	25.68	25.68	25.68	25.68	25.68	36.16	36.07	37.45	37.76	37.45	37.45	37.76	44.1	38.81	38.67	37.76	37.76	41.4	44.08	43.26	40.19	32.16	25.68
SPP South - Energy Price - 1H2023	537	6/20/2024	6/20/2024	26.28	26.28	23.48	23.48	25.59	25.6	34.22	35.5	37.06	38.16	38.31	38.31	38.16	38.49	38.49	39.28	39.28	39.07	42.29	39.72	43.11	41.86	29.13	26.4
SPP South - Energy Price - 1H2023	538	6/21/2024	6/21/2024	26.37	26.37	26.37	26.4	26.37	26.55	36.88	38.31	38.6	40.25	40.42	41.46	42.42	42.97	49.52	49.55	49.52	39.05	42.42	47.64	44.09	41.98	31.13	27.57
SPP South - Energy Price - 1H2023	539	6/22/2024	6/22/2024	28.93	26.99	26.4	26.4	26.37	26.38	31.04	31.08	33.6	36.5	37.91	40.58	43.11	44.08	37.91	36.69	36.5	36.5	36.69	36.69	31.08	31.03	26.37	25.68
SPP South - Energy Price - 1H2023	540	6/23/2024	6/23/2024	25.68	23.62	25.68	23.56	23.56	25.68	30.27	30.28	31.99	36.5	36.5	36.5	38.48	38.06	37.91	36.5	35.26	36.5	31.08	36.5	36.5	35.61	28.79	26.37
SPP South - Energy Price - 1H2023	541	6/24/2024	6/24/2024	27.17	26.46	26.46	26.46	26.46	27.17	38.31	38.43	39.22	38.31	38.31	39.22	39.22	39.22	39.22	38.31	36.09	36.88	36.88	37.08	39.22	39.22	27.17	26.46
SPP South - Energy Price - 1H2023	542	6/25/2024	6/25/2024	26.78	26.78	26.22	25.17	26.78	26.78	38.21	39.34	39.98	39.98	39.54	39.6	43.8	43.06	44.09	39.98	39.6	39.6	39.6	39.6	39.6	39.6	26.97	26.78
SPP South - Energy Price - 1H2023	543	6/26/2024	6/26/2024	27.3	28.19	27.96	27.96	28.04	27.94	38.31	39.81	40.24	40.24	40.63	38.31	40.24	40.24	40.63	39.53	40.24	39.53	36.88	39.53	40.24	40.24	28.04	27.72
SPP South - Energy Price - 1H2023	544	6/27/2024	6/27/2024	27.6	26.99	27.6	27.6	27.6	27.6	36.88	39.05	40.6	40.6	40.6	40.6	40.6	41.01	41.01	40.6	41.01	41.01	41.01	40.6	41.01	40.6	29.34	28.33
SPP South - Energy Price - 1H2023	545	6/28/2024	6/28/2024	27.26	27.26	27.26	26.54	27.26	27.92	39.32	39.32	39.32	39.68	41.06	41.2	41.67	43.73	46.99	51.02	39.68	40.44	39.32	39.68	39.68	39.68	29.41	27.89
SPP South - Energy Price - 1H2023	546	6/29/2024	6/29/2024	27.88	27.26	27.26	27.26	27.26	27.26	32.13	32.13	34.39	35.99	36.5	36.5	37.91	37.98	44.91	39.44	36.5	36.5	36.5	33.89	37.91	32.13	26.54	26.54
SPP South - Energy Price - 1H2023	547	6/30/2024	6/30/2024	26.57	26.54	26.54	26.54	26.54	26.54	32.13	32.76	33.72	31.98	32.13	35.49	36.5	36.5	36.5	37.91	37.91	37.91	36.5	33.58	36.5	32.13	27.26	26.54
SPP South - Energy Price - 1H2023	548	7/1/2024	7/1/2024	23.13	22.56	22.56	22.56	22.56	25.68	38.43	39.86	40.6	41.82	44.89	45.41	45.41	45.42	45.41	42.3	40.67	38.78	38.78	38.78	35.9	35.9	22.56	22.56
SPP South - Energy Price - 1H2023	549	7/2/2024	7/2/2024	26.24	26.24	26.93	26.24	26.24	26.93	40.32	40.65	42.43	45.57	45.63	44.55	52.03	52.03	52.73	52.03	52.04	44.55	44.57	52.03	52.03	52.03	32.63	32.63
SPP South - Energy Price - 1H2023	550	7/3/2024	7/3/2024	32.63	30.14	27.32	30.48	32.63	32.63	42.6	41.14	43.12	45.29	46.18	54.12	55.21	53.45	52.7	45.14	50.49	43.68	45.17	45.68	45.83	43.33	32.63	27.32
SPP South - Energy Price - 1H2023	551	7/4/2024	7/4/2024	29.56	27.32	27.32	27.32	27.64	27.32	40.79	40.79	42.41	42.43	43.64	46.92	52.69	52.71	56.08	56.39	43.99	45.1	47.38	45.74	42.65	43.61	29.29	26.93
SPP South - Energy Price - 1H2023	552	7/5/2024	7/5/2024	29.77	29.77	29.35	29.59	29.78	30.44	41.4	44	47.54	51.4	52.19	52.19	55.87	58.4	58.96	58.32	55.99	57.48	55.97	53.46	52.21	46.19	32.63	32.63
SPP South - Energy Price - 1H2023	553	7/6/2024	7/6/2024	32.63	29.92	27.03	27.03	29.78	29.82	45.13	49.37	51.52	49.61	49.61	51.52	62.09	62.09	62.09	65.17	62.09	62.09	56.67	46.31	47.01	46.36	30.92	30.07
SPP South - Energy Price - 1H2023	554	7/7/2024	7/7/2024	29.82	29.92	28.41	28.1	27.68	28.1	40.04	41.1	42.56	46.87	45.9	48.84	49.61	52.24	51.52	49.61	48.47	41.1	41.1	43.08	41.73	44.42	28.77	26.33
SPP South - Energy Price - 1H2023	555	7/8/2024	7/8/2024	28.24	27.79	28.53	28.53	28.53	28.54	42.26	41.06	40.61	42.26	42.26	46.44	46.98	44.12	44.12	43.71	42.26	41.97	42.26	39.86	39.86	41.4	27.79	27.79
SPP South - Energy Price - 1H2023	556	7/9/2024	7/9/2024	28.2	27.6	7.23	25.85	28.2	28.2	41.4	42.77	42.77	44.7	47.65	52.5	48.26	49.64	49.9	50.07	50.33	47.62	47.62	42.77	47.14	44.7	31.99	32.17
SPP South - Energy Price - 1H2023	557	7/10/2024	7/10/2024	32.11	28.8	28.8	28.8	28.8	30.33	42.59	42.59	44.38	42.99	48.76	47.39	48.39	47.83	43.82	42.99	42.59	46.53	44.49	46.53	43.3	44.09	29.29	28.8
SPP South - Energy Price - 1H2023	558	7/11/2024	7/11/2024	27.25	27.24	27.24	27.25	27.25	27.97	41.58	41.58	43.47	43.69	44.24	44.92	46.13	46.13	47.37	45.65	49.48	46.51	46.54	46.94	42.14	47.7	32.63	29.81
SPP South - Energy Price - 1H2023	559	7/12/2024	7/12/2024	29.75	27.73	27.16	27.2	27.01	27.7	40.99	41.29	41.78	45.76	46.97	45.67	47.03	50.84	51.09	52.44	53.41	50.26	45.99	46.39	46.54	45.43	32.08	31.81
SPP South - Energy Price - 1H2023	560	7/13/2024	7/13/2024	31.21	31.08	28.32	28.63	28.41	29.15	42.31	42.69	43.69	46.87	46.07	49.61	47.44	46.31	51.52	51.52	49.61	49.87	49.61	49.69	49.61	49.61	30.51	28.69
SPP South - Energy Price - 1H2023	561	7/14/2024	7/14/2024	28.5	27.73	27.16	27.73	27.73	27.73	41.59	42.16	45.99	42.77	49.61	49.61	49.61	50.11	63.55	52.84	63.55	53.9	51.12	63.55	51.52	50.22	32.19	30.27
SPP South - Energy Price - 1H2023	562	7/15/2024	7/15/2024	28.65	28.65	28.65	27.91	28.65	29.54	42.8	42.8	46.93	50.42	54.57	55.02	55.03	47.7	47.96	48.07	46.28	47.46	47.59	48.06	45.96	45.42	30.51	28.65
SPP South - Energy Price - 1H2023	563	7/16/2024	7/16/2024	28.99	29.11	29.12	28.64	28.75	32.63	43.38	47.64	47.5	50.29	55.44	55.84	58.43	58.98	59.66	60.25	59.5	59.04	55.83	55.83	55.83	47.81	32.54	32.17
SPP South - Energy Price - 1H2023	564	7/17/2024	7/17/2024	32.54	30.97	30.49	30.44	30.92	30.86	43.5	45.39	43.5	45.36	43.5	50.63	55.99	56	54.24	58.47	56.22	56	56.04	56	43.5	43.09	29.21	30.92
SPP South - Energy Price - 1H2023	565	7/18/2024	7/18/2024	30.23	29.43	30.23	31.04	30.23	30.23	40.99	44.32	42.78	43.48	47.04	48.65	49.55	49.57	46.98	47	44.32	43.39	44.32	54.22	44.31	44.77	32.63	31.92
SPP South - Energy Price - 1H2023	566	7/19/2024	7/19/2024	31.27	28.52	27.84	27.8	28.73	29.29	41.47	43.6	43.6	44.03	48.13	48.13	44.28	48.13	48.13	45.17	44.28	48.13	46.77	48.13	47.83	47.34	32.52	31.03
SPP South - Energy Price - 1H2023	567	7/20/2024	7/20/2024	31.05	30.7	30.56	30.51	29.29	29.29	44.53	47.38	48.81	49.42	49.61	49.21	49.21	52.68	52.68	53.6	58.9	49.61	52.68	49.41	44.53	45.68	30.92	29.29
SPP South - Energy Price - 1H2023	568	7/21/2024	7/21/2024	28.68	7.72	8.56	7.25	29.29	29.29	39.74	44.53	45.82	44.53	44.53	47.5	47.86	46.82	44.53	48.85	47.86	44.53	44.53	47.48	49.84	50.12	32.42	29.29
SPP South - Energy Price - 1H2023	569	7/22/2024	7/22/2024	31.39	28.1	28.1	30.09	30.12	30.24	41.74	41.74	42.11	43.3	50.39	52.48	54.12	54.06	56	56.57	56.61	55.73	51.96	51.31	52.05	48.27	35	33.19
SPP South - Energy Price - 1H2023	570	7/23/2024	7/23/2024	31.63	32.63	29.64	28.34	31.42	30.44	42.41	44.57	46.45	47.29	43.65	54.46	54.47	54.48	54.47	54.47	55.71	46.68	53.53	46.68	46.68	47.94	33.89	29.91
SPP South - Energy Price - 1H2023	571	7/24/2024	7/24/2024	28.99	27.91	27.91	27.91	28.79	27.91	41.13	40.75	41.88	41.51	41.88	50.27	49.42	41.88	46.04	46.04	53.72	43.48	48.33	48.4	41.88	41.88	28.89	28.77
SPP South - Energy Price - 1H2023	572	7/25/2024	7/25/2024	27.48	28.46	28.72	28.72	28.58	30.16	41.33	41.33	43.4	48.7	51.65	52.96	52.98	53.16	56.64	55.49	52.98	52.98	52.97	52.98	52.98	52.85	33.89	32.58
SPP South - Energy Price - 1H2023	573	7/26/2024	7/26/2024	29.9	29.55	29.91	29.37	29.9	29.82	41.4	43.68	45.32	50.33	52.39	52.4	54.46	53.69	55.87	56.48	56.07	54.96	53.75	53	52.4	51.27	33.89	33.89
SPP South - Energy Price - 1H2023	574	7/27/2024	7/27/2024	32.63	32.42	30.53	29.95	32.02	32.63	48.68	49.61	49.61	51.52	52.04	61.23	62.33	61.23	62.33	62.33	62.33	57.69	56.18	56.13	55.31	50.51	32.42	30.18
SPP South - Energy Price - 1H2023	575	7/28/2024	7/28/2024	29.26	27.15	27.15	27.15	28.47	27.15	41.27	42.95	41.27	45.03	46.02	49.61	51.52	54.71	62.33	62.33	62.33	57.69	56.18	51.52	49.61	50.51	32.02	28.88
SPP South - Energy Price - 1H2023	576	7/29/2024	7/29/2024	28.62	26.77	26.77	29.47	29.52	30.11	42.5	40.13	40.45	41.55	43.34	51.68	53.67	51.75	51.75	51.75	54.53	53.56	52.35	52.21	48.57	44.3	33.89	31.35
SPP South - Energy Price - 1H2023	577	7/30/2024	7/30/2024	28.16	30.39	27.8	30.2	27.43	27.43	41.27	41.42	41.27	52.43	52.2	49.09	52.89	53.89	54.61	54.8	52.9	52.89	52.89	52.65	49.79	47.9	30.7	32.63
SPP South - Energy Price - 1H2023	578	7/31/2024	7/31/2024	31.85	27.93	27.66	26.94	27.66	30.33	41.56	41.56	43.44	48.67	49.41	53.28	53.29	53.29	53.41	54.35	53.3	53.29	52.85	46.75	45.65	41.66	32.63	32.65
SPP South - Energy Price - 1H2023	579	8/1/2024	8/1/2024	29.38	30.17	33.24	33.13	33.25	34.26	46.08	45.22	43.61	47.81	51.18	55.54	55.55	55.56	54.87	56.12	55.55	55.37	55.54	55.54	51.64	47.62	34.26	34.26
SPP South - Energy Price - 1H2023	580	8/2/2024	8/2/2024	29.12	33.11	31.57	32.55	33.18	34.26	42.52	41.69	43.55	45.94	43.89	42.8	45.35	52.6	52.94	52.95	51.8	45.71	45.46	45.07	42.46	41.34	30.19	28.21

SPP South - Energy Price - 1H2023	581	8/3/2024	8/3/2024	27.87	27.87	27.87	27.87	28.61	27.87	33.65	36.22	37.25	40.13	41.86	44.72	46.14	48.8	49.07	50.81	49.62	41.86	44.58	37.84	34.56	36.14	28.61	28.61
SPP South - Energy Price - 1H2023	582	8/4/2024	8/4/2024	27.87	27.95	27.87	27.87	28.61	28.61	33.05	32.79	32.78	32.79	36.23	40.3	41.86	41.86	50.75	41.86	44.95	41.86	40.3	44.76	41.86	40.3	32.55	31.39
SPP South - Energy Price - 1H2023	583	8/5/2024	8/5/2024	28.74	26.17	26.17	26.17	26.17	28.81	39.34	40.14	40.14	41.69	43.82	48.25	48.26	48.88	48.88	48.88	50.98	48.88	48.36	48.79	47.59	46.79	34.26	34.26
SPP South - Energy Price - 1H2023	584	8/6/2024	8/6/2024	34.26	33.37	33.29	33.17	33.07	34.26	43.26	43.63	43.63	47.68	51.5	54.49	55.62	55.63	55.63	56.33	56.25	55.63	55.62	53.26	52.41	44.77	34.26	34.26
SPP South - Energy Price - 1H2023	585	8/7/2024	8/7/2024	32.41	29.98	29.98	30.78	32.01	33.56	43.94	43.94	43.23	43.94	48.51	48.51	48.51	54.34	48.51	48.51	48.51	51.03	45.53	48.51	43.94	43.94	34.02	32.68
SPP South - Energy Price - 1H2023	586	8/8/2024	8/8/2024	31.17	31.16	29.19	30.34	31.17	31.17	43.96	43.96	44.4	44.4	44.46	49.06	53.15	54.7	44.4	57.21	55.74	53.35	51.38	46.84	44.4	44.4	31.17	31.17
SPP South - Energy Price - 1H2023	587	8/9/2024	8/9/2024	30.98	31.17	31.59	30.98	31.37	32.1	44.17	43.74	44.03	44.17	45.07	46.6	50.73	54	53.02	55.22	48.79	51.37	48.79	48.79	45.49	44.67	34.24	32.61
SPP South - Energy Price - 1H2023	588	8/10/2024	8/10/2024	30.98	32.5	31.59	30.98	31.37	30.98	36.69	36.43	37.55	37.48	39.7	40.3	43.55	43.35	43.95	43.17	43.35	43.63	40.24	41.86	43.01	40.3	34.26	32.03
SPP South - Energy Price - 1H2023	589	8/11/2024	8/11/2024	31.77	31.68	32.42	31.48	31.92	31.28	36.9	37.64	37.55	39.43	41.86	42.88	43.11	45.2	46.51	47.49	47.65	45.97	43.11	43.1	42.96	41.86	30.98	30.98
SPP South - Energy Price - 1H2023	590	8/12/2024	8/12/2024	31.28	31.28	30.46	32.43	33.14	34.07	44.53	44.53	44.69	49.14	53.08	56.94	57.4	57.4	57.57	58.46	58.1	57.4	55.43	54.34	52.03	44.53	34.26	32.31
SPP South - Energy Price - 1H2023	591	8/13/2024	8/13/2024	33.19	32.25	30.98	31.88	33.74	33.3	43.64	43.64	45.19	48.14	55.46	55.75	56.15	56.27	57.55	58.34	56.15	55.47	54.9	54.55	53.88	48.14	34.26	34.06
SPP South - Energy Price - 1H2023	592	8/14/2024	8/14/2024	29.09	29.26	29.18	28.32	28.32	28.87	37.89	38.76	37.89	38.75	41.86	43.75	46.59	43.75	50.53	48.15	48.26	45.63	47.74	48.07	44.39	40.14	29.7	27.04
SPP South - Energy Price - 1H2023	593	8/15/2024	8/15/2024	27.04	26.06	24.83	24.39	25.76	28.33	37.37	37.37	37.37	41.11	40.14	41.69	43.81	43.81	47.15	47.01	43.81	43.84	43.81	43.81	43.64	40.14	32.66	32.72
SPP South - Energy Price - 1H2023	594	8/16/2024	8/16/2024	26.56	24.27	24.34	24.95	24.61	26.69	36.81	41.09	40.14	42.3	41.69	42.2	43.17	43.79	43.42	46.05	43.7	44.81	43.2	43.16	40.14	38.64	27.94	29.82
SPP South - Energy Price - 1H2023	595	8/17/2024	8/17/2024	26.56	26.05	26.54	26.89	27.35	27.93	33.11	36.08	39.92	40.42	40.3	41.86	41.86	43.97	41.86	43.97	41.86	41.86	41.33	41.07	40.3	38.25	29.52	29.06
SPP South - Energy Price - 1H2023	596	8/18/2024	8/18/2024	28.42	26.56	26.56	26.56	25.87	25.57	32.75	34.93	36.59	40.42	40.3	41.33	40.55	41.86	41.33	41.33	40.3	40.3	41.33	41.47	41.03	40.3	33.35	30.38
SPP South - Energy Price - 1H2023	597	8/19/2024	8/19/2024	33.45	33.31	31.88	30.85	30.85	32.24	41.69	41.69	40.14	43.05	45.79	48.98	49	47.79	49	48.99	43.82	42.21	48.46	47.41	47.69	43.12	31.79	29.98
SPP South - Energy Price - 1H2023	598	8/20/2024	8/20/2024	34.15	32.41	32.97	32.21	30.88	34.26	44.05	43.63	44.05	48.65	49.77	49.18	50.3	55.85	56.73	57.24	48.65	48.65	56.33	50.19	47.3	45.65	32.99	32.79
SPP South - Energy Price - 1H2023	599	8/21/2024	8/21/2024	34.26	34.26	33.17	31.75	31.75	34.26	45.09	44.84	44.64	48	51.13	50.3	50.23	51.83	58.18	58.18	51.04	50.09	58.19	58.18	50.86	46.82	34.26	33.52
SPP South - Energy Price - 1H2023	600	8/22/2024	8/22/2024	34.26	34.26	34.26	34.26	34.26	35.53	44.75	44.75	44.88	56.64	57.22	57.7	57.69	58.29	58.18	58.26	61.61	58.18	61.64	60.09	57.6	57.69	40.38	39.22
SPP South - Energy Price - 1H2023	601	8/23/2024	8/23/2024	35.91	35.59	35.91	35.73	35.91	35.53	47.91	45.66	47.91	47.69	55.73	55.89	58.73	59.26	64.07	63.95	60.38	59.74	59.26	57.18	55.73	51.13	39.07	35.59
SPP South - Energy Price - 1H2023	602	8/24/2024	8/24/2024	34.26	34.26	34.26	34.26	34.26	34.26	40.3	40.3	40.3	42.24	48.7	53.2	53.66	56.78	56.78	56.78	60.14	59.76	56.78	53.4	53.35	53.58	35.91	35.91
SPP South - Energy Price - 1H2023	603	8/25/2024	8/25/2024	35.91	34.26	34.26	33.34	33.23	33.13	40	39.66	41.61	44.26	51.48	53.2	52.52	53.29	53.29	53.66	53.66	53.53	53.07	47.75	45.03	42.24	35.59	35.59
SPP South - Energy Price - 1H2023	604	8/26/2024	8/26/2024	34.26	34.26	33.71	33.85	33.38	33.62	43.75	44.23	45.5	46.18	49.11	53.41	55.5	55.99	56.33	57.13	57.12	56.31	55.74	53.63	49.75	46.96	36.23	34.26
SPP South - Energy Price - 1H2023	605	8/27/2024	8/27/2024	31.9	31.9	31.9	31.05	31.05	31.9	45.27	45.27	44.81	47.18	52.13	51.53	54.91	58.11	58.87	58.43	50.13	50.22	57.93	54.59	46.59	45.27	33.42	33.81
SPP South - Energy Price - 1H2023	606	8/28/2024	8/28/2024	34.26	32.01	32.01	32.01	31.16	32.64	44.94	44.94	45.4	50.29	57.92	58.31	59.17	60.87	64.12	65.15	65.66	60.15	58.62	58.62	58.61	55.75	38.56	37.44
SPP South - Energy Price - 1H2023	607	8/29/2024	8/29/2024	35.59	34.26	33.83	34.26	34.26	34.26	45.91	46.16	49.94	52.91	54.39	59.32	59.42	59.52	61.34	61.96	59.82	59.47	58.93	59.26	53.65	46.97	35.59	34.26
SPP South - Energy Price - 1H2023	608	8/30/2024	8/30/2024	34.26	34.26	34.26	34.26	35.59	35.59	45.73	50.56	51.18	58.03	58.91	58.93	59.04	59.41	60.79	61.67	61.87	59.41	58.44	50.56	45.63	45.63	34.26	34.26
SPP South - Energy Price - 1H2023	609	8/31/2024	8/31/2024	34.26	33.68	34.26	34.26	34.26	34.26	40.3	40.3	40.3	44.87	47.29	56.12	56.6	56.6	56.6	59.13	59.19	56.03	55.62	55.79	44.57	40.3	32.19	32.51
SPP South - Energy Price - 1H2023	610	9/1/2024	9/1/2024	31.89	29.37	29.37	29.37	29.37	30.83	58.97	61.85	62.77	65.19	63.14	83.03	86.55	86.33	86.31	86.55	69.31	66.76	71.3	71.6	69.1	62.77	31.89	29.89
SPP South - Energy Price - 1H2023	611	9/2/2024	9/2/2024	30.06	30.27	29.37	29.37	29.56	31.89	40.9	40.9	40.9	45.05	46.7	45.32	44.32	52.75	52.75	52.75	52.76	52.76	52.74	52.47	52.75	52.04	33.12	33.12
SPP South - Energy Price - 1H2023	612	9/3/2024	9/3/2024	31.3	31.89	31.33	31.23	31.19	33.34	43.72	43.59	43.59	47.98	44.94	50.8	50.84	50.84	50.86	50.86	50.84	50.66	47.04	42.45	42.77	39.54	31.89	31.89
SPP South - Energy Price - 1H2023	613	9/4/2024	9/4/2024	30.94	30.94	28.01	28.01	28.2	28.01	38.95	38.95	38.32	37.65	36.6	36.9	38.95	36.6	38.43	38.01	38.95	40.58	39.32	39.56	39.31	36.6	28.01	27.28
SPP South - Energy Price - 1H2023	614	9/5/2024	9/5/2024	27.16	27.16	27.28	27.16	27.89	28.35	39.17	37.65	37.58	38.77	38.48	36.6	36.6	38.81	38.81	38.81	39.67	39.73	43.15	39.88	39.11	39.02	31.89	31.85
SPP South - Energy Price - 1H2023	615	9/6/2024	9/6/2024	31.89	31.89	27.67	30.41	31.89	32.69	41.53	38.91	39.68	42.83	42.83	43.72	40.22	49.47	49.86	49.98	48.86	47.38	42.83	39.28	38.91	38.91	26.95	27.67
SPP South - Energy Price - 1H2023	616	9/7/2024	9/7/2024	26.95	27.67	27.67	27.67	26.95	27.67	53.05	53.05	53.05	54.47	62.77	65.19	65.19	69.73	69.75	65.19	65.19	62.77	65.19	69.09	65.19	64.35	27.67	26.95
SPP South - Energy Price - 1H2023	617	9/8/2024	9/8/2024	26.95	26.95	26.95	26.95	26.95	26.95	53.05	53.04	53.04	53.04	62.77	60.15	62.77	65.19	65.19	75.11	62.77	65.19	62.77	65.19	62.77	61.6	27.67	26.95
SPP South - Energy Price - 1H2023	618	9/9/2024	9/9/2024	27.01	27.73	27.73	27.01	27.73	27.73	38.98	38.83	38.01	38.98	38.63	40.3	38.98	38.63	38.98	38.63	38.63	38.63	38.98	38.63	38.01	36.6	27.73	24.77
SPP South - Energy Price - 1H2023	619	9/10/2024	9/10/2024	27.76	25.44	27.76	27.76	25.44	27.76	38.01	38.01	36.6	38.01	36.6	38.01	39.89	39.89	39.51	39.52	41.25	38.01	39.52	38.01	36.92	36.6	25.77	25.44
SPP South - Energy Price - 1H2023	620	9/11/2024	9/11/2024	25.77	25.77	25.77	25.77	25.77	28.12	39.94	39.68	40.33	40.34	41.68	51.04	50.89	51.95	51.84	44.56	51.95	44.56	44.56	51.46	41.82	39.94	31.89	31.89
SPP South - Energy Price - 1H2023	621	9/12/2024	9/12/2024	29.09	28.37	28.36	27.62	28.37	29.09	39.73	39.73	39.73	39.35	40.16	40.28	39.35	39.73	39.19	38.01	38.01	39.35	37.51	36.6	38.01	36.6	27.62	27.62
SPP South - Energy Price - 1H2023	622	9/13/2024	9/13/2024	26.64	24.44	24.44	24.44	26.64	26.64	36.6	35.73	34.92	34.89	33.52	33.36	32.31	33.36	33.36	33.36	33.36	33.36	36.6	36.6	36.6	33.36	24.44	12.36
SPP South - Energy Price - 1H2023	623	9/14/2024	9/14/2024	2.74	20.6	6.27	24.44	24.44	24.44	52.29	49.37	48.11	48.11	52.45	48.11	52.45	52.45	52.45	52.45	53.85	53.85	59.45	53.85	53.85	53.85	24.44	22.77
SPP South - Energy Price - 1H2023	624	9/15/2024	9/15/2024	20.97	6.49	6.27	21.79	19.77	24.44	48.11	48.11	48.11	48.11	52.45	53.85	53.85	53.85	55.33	59.45	56.14	58.02	57.78	56.63	53.85	52.45	26.64	26.64
SPP South - Energy Price - 1H2023	625	9/16/2024	9/16/2024	26.19	26.19	26.19	26.19	26.19	26.89	37.67	37.67	37.67	37.67	37.67	38	38	39.6	41.72	41.72	41.72	41.72	41.72	41.72	38.01	38	26.89	26.19
SPP South - Energy Price - 1H2023	626	9/17/2024	9/17/2024	26.05	26.05	26.05	26.19	26.05	26.74	37.83	37.83	36.6	34.56	34.56	36.6	36.6	37.51	37.83	37.51	37.51	38.01	37.83	37.51	36.6	32.74	23.91	23.91
SPP South - Energy Price - 1H2023	627	9/18/2024	9/18/2024	24.02	24.02	24.02	22.46	24.02	24.02	33.82	33.7	32.87	32.87	32.87	32.87	32.87	32.87	36.6	36.6	36.6	37.66	37.98	37.66	36.6	33.62	24.35	24.02
SPP South - Energy Price - 1H2023	628	9/19/2024	9/19/2024	24.35	24.35	24.35	24.35	24.35	24.35	36.6	34.11	19.47	33.27	36.6	36.6	38.01	38.01	38.09	38.09	38.43	48.98	48.7	48.8	39.85	38.43	30.82	30.09
SPP South - Energy Price - 1H2023	629	9/20/2024	9/20/2024	26.82	26.82	26.84	26.82	27.01	29.1	37.91	37.91	37.91	37.91	37.91	37.59	37.91	38.78	37.74	37.91	37.91	38.01	37.91	37.59	37.59	37.59	26.12	23.97
SPP South - Energy Price - 1H2023	630	9/21/2024	9/21/2024	23.97	23.97	23.97	23.97	23.97	19.9	47.89	8.09	0	47.19	0	0	14.42	14.25	15.28	4.61	5.57	47.19	51.42	51.43	51.42	51.19	23.97	23.97
SPP South - Energy Price - 1H2023	631	9/22/2024	9/22/2024	1.88	1.88	1.91	1.81	1.77	1.79	0	0	0	0	0	0	4.02	3.33	3.3	47.19	47.19	47.19	51.43	47.19	47.19	47.19	0	0
SPP South - Energy Price - 1H2023	632	9/23/2024	9/23/2024	0	0	0	0	0	17.4	9.91	26.03	28.69	32.98	32.98	32.98	32.98	33.16	35.67	36.6	35.84	37.13	40.13	36.6	33.78	33.16	22.77	22.68
SPP South - Energy Price - 1H2023	633	9/24/2024	9/24/2024	24.52	24.52	24.52	24.52	25.16	26.76	35.97	35.97	36.29	35.97	36.6	36.93	38.01	44.07	45.79	45.89	45.89	45.63	45.2	39.26	38.01	36.6	25.16	24.52
SPP South - Energy Price - 1H2023	634	9/25/2024	9/25/2024	24.47	22.49	24.47	24.47	25.11	25.11	36.6	35.91	35.91	35.91	36.6	36.6	36.6	38.01	38.01	36.6	36.6	44.87	44.64	42.69	36.6	35.91	24.78	24.47
SPP South - Energy Price - 1H2023	635	9/26/2024	9/26/2024	26.01	26.01	26.01	26.02	26.02	26.7	37.46	36.6	37.46	37.37	37.78	37.46	37.78	37.78	37.78	37.78	37.46	41.46	41.46	39.83	37.78	37.46	26.71	26.62
SPP South - Energy Price - 1H2023	636	9/27/2024	9/27/2024	24.36	24.36	24.36	24.36	24.84	24.99	35.77	35.77	35.77	35.52	35.52	35.51	30.96	35.51	35.51	34.88	30.96	35.77	35.77	35.51	30.96	30.96	22.39	5.13
SPP South - Energy Price - 1H2023	637	9/28/2024	9/28/2024	4.91	3.87	1.91	1.81	1.77	1.79	3.78	3.73	3.78	3.04	3.63	0	0	3.33	3.3	4.61	5.57	44.07	44.07	44.07	3.99	4.77	2.38	0
SPP South - Energy Price - 1H2023	638	9/29/2024	9/29/2024	0	0	0	0	0	0	0	0	0	0	-27.74	-25.57	-22.06	0	-4.02	0	0	44.07	42.13	5.29	0	4.16	0	0
SPP South - Energy Price - 1H2023	639	9/30/2024	9/30/2024	0	-9.72	0	0	0	2.91	3.71	2.93	2.68	8.79	9.16	12.42	22.46	29.18	29.18	29.18	33.52	33.52	33.72	33.72	33.72	33.53	22.17	20.87
SPP South - Energy Price - 1H2023	640	10/1/2024	10/1/2024	17.76	14.96	14.94	17.76	17.76	17.76	30.35	30.35	9.01	11.81	30.35	30.35	30.35	30.35	30.35	30.35	30.35	35.67	35.67	34.6	34.6	33.31	19.68	19.68
SPP South - Energy Price - 1H2023	641	10/2/2024	10/2/2024	17.86	18.15	17.86	17.86	19.8	19.8	34.6	34.6	35.84	35.84	35.84	35.84	34.6	34.6	35.84	35.84	35.84	35.84	34.6	34.6	33.31	33.31	17.86	17.86
SPP South - Energy Price - 1H2023	642	10/3/2024	10/3/2024	18.12	18.12	18.12	20.09	20.09	20.64	34.6	34.6	30.89	30.88	30.88	30.89	30.88	30.89	30.89	30.89	30.89	32.89	33.31	30.89	30.89	30.88	18.12	18.12
SPP South - Energy Price - 1H2023	643	10/4/2024	10/4/2024	18.35	18.35	18.35	9.67	8.12	18.35	31.23	31.23	31.23	31.23	29.82	28.67	29.93	31.23	31.23	31.23	31.23	31.23	31.23	31.23	31.23	31.23	18.35	18.35
SPP South - Energy Price - 1H2023	644	10/5/2024	10/5/2024	18.35	18.35	18.35	18.35	18.35	18.35	36.62	27.09	29.45	25.23	0	1.28	2.66	2.33	2.47	0	5.61	6.69	17.09	3.84	0	0	0	0
SPP South - Energy Price - 1H2023	645	10/6/2024	10/6/2024	0	0	0	1.82	2	18.35	36.62	10	3.34	0	0	0	1	0	7.02	8.55	36.63	40.64	41.74	40.64	40.63	36.63	18.35	18.35
SPP South - Energy Price - 1H2023	646	10/7/2024	10/7/2024	19.64	10.44	17.27	17.27	17.27	19.64	34.6	33.31	31.71	31.71	31.71	33.31	33.31	35.15	35.15	34.6	35.15	37.68	39.47	36.31	35.15	34.6	21.05	19.64
SPP South - Energy Price - 1H2023	647	10/8/2024	10/8/2024	19.74	18.59	18.82	19.56	19.74	18.59	33.58	33.58	33.31	30.37	30.37	30.37	30.37	30.37	30.37	30.37	30.37	30.37	30.37	30.37	30.37	25.55	11.31	1.97
SPP South - Energy Price - 1H2023	648	10/9/2024	10/9/2024	2	1.95	1.93	10.53	15.6	15.6	29.22	29.22	23.3	2.22	23.01	10.24	26.44	7.83	21.43	23.47	29.22	29.22	29.22	29.22	29.22	32.77	15.6	15.48
SPP South - Energy Price - 1H2023	649	10/10/2024	10/10/2024	16.81	11.32	1.93	4.16	2	3.36	10.78	9.74	0	1	0	11.3	0	4.38	0	6.65	26.23	24.13	33.31	31.02	31.02	34.34	16.81	10.91
SPP South - Energy Price - 1H2023	650	10/11/2024	10/11/2024	10.7	12.6	16.86	16.86	16.86	20.16	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43	33.31	33.31	34.43	34.43	34.43	34.43	34.43	22.09	22.6
SPP South - Energy Price - 1H2023	651	10/12/2024	10/12/2024	22.15	21.97	21.14	19.86	21.92	23.61	47.35	47.35	47.35	45.59	46.39	45.59	46.96	45.46	41.52	38.24	45.12	47.35	47.35	45.59	38.24	33.65	16.86	16.86
SPP South - Energy Price - 1H2023	652	10/13/2024	10/13/2024	16.86	16.86	19.16	19.16	20.27	19.16	37.29	36.85	39.81	38.24	38.24	42.06	38.24	20.42	22.61	38.63	33.65	36.68	36.79	33.65	33.65	38.24	19.16	17.23
SPP South - Energy Price - 1H2023	653	10/14/2024	10/14/2024	18.64	18.64	18.64	18.64	18.64	18.64	33.66	33.66	33.66	34.6	33.66	33.31	33.65	33.31	33.57	34.23	38.53	38.53	39.47	34.6	33.66	32.01	20.59	21.2
SPP South - Energy Price - 1H2023	654	10/15/2024	10/15/2024	20.34	17.05	19.23	20.66	21.85	22.84	39.61	38.62	37.68	34.6	34.6	34.54	32.69	31.5	33.31	31.73	33.31	34.54	34.54	34.54	34.54	33.31	16.92	16.92
SPP South - Energy Price - 1H2023	655	10/16/2024	10/16/2024	12.29	16.46	16.46	16.46	16.46	18.69	32.32	33.74	33.49	34.6	33.74	34.6	33.74	33.74	33.74	33.74	33.74	33.74	34.6	34.6	34.6	34.6	22.35	22.03
SPP South - Energy Price - 1H2023	656	10/17/2024	10/17/2024	21.49	22.84	21.42	21.31	22.84	22.27	38.22	36.98	34.03	33.31	33.31	33.31	34.03	33.31	33.31	33.31	33.31	40.32	40.98	43.56	40.56	35.05	18.89	18.89
SPP South - Energy Price - 1H2023	657	10/18/2024	10/18/2024	17.59	20.11	19.37	17.59	19.37	20.69	36.08	34.28	33.31	33.31	33.31	33.31	32.1	32.1	33.31	32.89	34.6	37.77	37.73	36.62	34.89	32.1	19.37	15.53
SPP South - Energy Price - 1H2023	658	10/19/2024	10/19/2024	15.53	17.35	15.53	17.59	17.59	18.13	37.64	35.12	30.99	35.12	37.4	37.99	39.41	42.24	45.27	39.88	40.9	44.19	43.24	40.08	39.67	38.52	17.59	17.59
SPP South - Energy Price - 1H2023	659	10/20/2024	10/20/2024	18.81	17.59	18.74	17.59	17.59	18.89	40.32	39.89	30.99	35.12	30.99	35.12	30.99	30.99	30.99	35.12	30.99	35.12	38.67	38.29	35.12	35.12	17.59	17.59
SPP South - Energy Price - 1H2023	660	10/21/2024	10/21/2024	20.64	20	19.02	19.96	21.91	21.71	38.22	37.09	34.6	35.28	38.17	40.23	34.6	34.23	35.33	34.6	34.84	43.84	42.29	38.04	37.74	37.4	20.68	20.33
SPP South - Energy Price - 1H2023	661	10/22/2024	10/22/2024	20.36	20.31	20.29	20.17	20.36	21.95	34.57	34.57	34.57	34.57	34.57	34.57	33.31	33.31	33.31	33.57	34.57	34.6	34.6	34.57	34.57	32.63	19.25	18.88
SPP South - Energy Price - 1H2023	662	10/23/2024	10/23/2024	17.16	17.16	17.16	17.16	8.12	17.16	33.31	32.57	32.57	32.57	32.57	32.57	33.31	32.57	33.31	32.57	32.57	33.31	32.57	33.31	32.57	3.47	2.32	4.48
SPP South - Energy Price - 1H2023	663	10/24/2024	10/24/2024	0.58	1.95	10.13	17.49	17.49	19.34	34.6	34.6	30.98	30.98	30.98	30.98	33.31	30.98	33.31	33.31	34.6	34.6	33.31	30.98	30.98	30.98	17.49	9.51

SPP South - Energy Price - 1H2023	664	10/25/2024	10/25/2024	2	10.44	11.56	9.67	17.34	15.96	30.83	30.75	34	30.75	30.75	33.31	33.08	34.6	33.31	30.75	30.75	30.75	30.75	30.75	30.75	30.75	19.22	18.83
SPP South - Energy Price - 1H2023	665	10/26/2024	10/26/2024	19.22	19.22	18.59	19.22	17.34	19.22	34.62	39.38	34.62	12.79	34.62	34.62	34.62	29.72	22.61	23.45	39.38	44.11	41.02	39.38	39.38	39.38	19.22	18.28
SPP South - Energy Price - 1H2023	666	10/27/2024	10/27/2024	17.34	17.68	19.22	19.22	19.22	19.22	38.36	38.36	34.62	34.62	3.57	0	0	0	0	5.42	36.87	39.38	40.96	39.38	39.38	39.38	19.22	19.22
SPP South - Energy Price - 1H2023	667	10/28/2024	10/28/2024	19.27	19.27	19.27	17.4	19.27	19.27	33.31	34.6	31.88	33.31	33.62	34.6	33.48	35.06	35.06	35.38	35.38	37.66	37.96	35.38	35.06	35.06	19.37	17.82
SPP South - Energy Price - 1H2023	668	10/29/2024	10/29/2024	17.62	17.62	13.31	10.53	9.86	12.51	18.82	31.16	7.82	2.22	0	0	4.69	0	0	4.7	15.03	10.55	10.65	12.53	4.57	2.97	0	1.97
SPP South - Energy Price - 1H2023	669	10/30/2024	10/30/2024	1.45	0	0	1.42	2.01	7.76	31.05	31.05	31.05	31.05	33.31	35.31	35.31	34.6	35.31	34.49	33.31	34.6	33.62	33.36	33.31	31.05	18.58	17.54
SPP South - Energy Price - 1H2023	670	10/31/2024	10/31/2024	17.02	17.02	7.82	2.3	17.01	17.02	30.26	30.26	30.26	30.26	30.26	30.26	30.26	30.26	30.26	30.26	33.31	33.31	26.86	30.26	30.26	8.54	1.45	1.41
SPP South - Energy Price - 1H2023	671	11/1/2024	11/1/2024	1.79	0	0	0	2.48	2.5	29.12	29.12	33.11	33.36	33.36	33.36	33.36	33.36	33.94	33.94	33.94	33.94	33.94	33.94	33.35	33.11	22.15	22.15
SPP South - Energy Price - 1H2023	672	11/2/2024	11/2/2024	22.15	21.59	21.59	21.59	21.81	21.59	50.57	49.28	50.57	49.86	50.57	50.57	50.57	50.57	50.57	50.57	50.57	52.26	53.02	50.57	50.57	49.28	21.59	20.22
SPP South - Energy Price - 1H2023	673	11/3/2024	11/3/2024	19.53	19.53	19.53	10.71	11.44	11.57	34.27	34	0	0	-30.3	-32.14	-32.74	-31.6	-30.96	-19.78	0	9.22	9.22	9.22	14.77	16.38	3.71	8.83
SPP South - Energy Price - 1H2023	674	11/4/2024	11/4/2024	4.01	9.53	9.61	3.3	16.41	22.58	34.34	35.25	34.34	34.34	35.25	35.25	35.25	35.25	35.25	35.25	35.25	38.69	40.36	35.66	34.34	34.34	24.08	24.26
SPP South - Energy Price - 1H2023	675	11/5/2024	11/5/2024	24.32	24.3	23.69	25.7	25.22	27.27	34.6	34.61	34.61	35.25	35.25	35.25	35.25	37.89	35.25	34.61	39.7	39.26	42.65	35.25	37.99	39.09	28.51	28.69
SPP South - Energy Price - 1H2023	676	11/6/2024	11/6/2024	27.52	27.52	26.69	26.94	25.87	28.08	38.58	37.93	39.01	39.84	40.48	37.93	33.96	33.96	33.94	32.74	32.74	32.74	32.74	30.73	30.12	32.74	7.96	8.83
SPP South - Energy Price - 1H2023	677	11/7/2024	11/7/2024	1.79	2.04	0	0	2.48	2.5	32.92	32.92	32.92	33.94	32.92	32.92	33.94	33.94	33.94	33.94	34.16	35.25	35.25	40.88	35.45	38.52	28.08	28.08
SPP South - Energy Price - 1H2023	678	11/8/2024	11/8/2024	29.16	29.16	23.68	28.08	24.61	28.08	35.7	35.7	34.29	34.29	34.29	34.29	33.94	33.94	33.94	31.47	34.29	35.25	35.25	34.29	34.29	8.7	1.54	0
SPP South - Energy Price - 1H2023	679	11/9/2024	11/9/2024	0	0	0	0	0	2.14	5.05	24.67	4.88	0	4.49	3.83	4.16	3.7	5.73	16.12	54.06	57.76	54.06	64.1	48.79	48.79	9.93	1.73
SPP South - Energy Price - 1H2023	680	11/10/2024	11/10/2024	9.27	9.53	9.93	9.68	11.9	15.97	48.79	54.06	48.79	19.01	39.62	15.13	15.13	16.26	0	0	41.02	41.96	10.87	0	3.25	0	0	0
SPP South - Energy Price - 1H2023	681	11/11/2024	11/11/2024	0	0	0	0	0	0	2.67	2.53	0	0	0	0	0	0	0	0	3.76	26.65	4.55	4.88	1.72	2.61	0	0
SPP South - Energy Price - 1H2023	682	11/12/2024	11/12/2024	0	0	0	0	0	2.5	38.58	38.93	35.25	35.89	35.89	33.94	35.89	14.1	33.94	35.89	35.89	35.89	35.89	38.93	35.25	35.25	23.66	1.73
SPP South - Energy Price - 1H2023	683	11/13/2024	11/13/2024	24.42	27.14	27.14	27.14	27.14	27.15	40	42.19	42.19	40	43.89	40.58	40	40	40	40.48	42.47	43.19	44.57	44.71	40	41.33	27.89	28.08
SPP South - Energy Price - 1H2023	684	11/14/2024	11/14/2024	27.09	24.18	25.05	26.87	24.18	26.87	35.59	35.59	33.94	33.94	4.69	2.03	2.2	1.96	3.04	1.92	10.39	33.94	33.94	33.94	33.94	33.94	24.18	23.03
SPP South - Energy Price - 1H2023	685	11/15/2024	11/15/2024	20.86	21.13	20.97	20.86	21.13	22.27	33.23	33.23	33.23	18.25	11.31	14.14	31.57	25.91	33.23	33.94	36.97	36.97	36.97	33.94	35.25	33.94	24.7	24.7
SPP South - Energy Price - 1H2023	686	11/16/2024	11/16/2024	24.7	22.27	17.56	17.12	23.32	24.45	59.81	50.84	50.84	50.84	50.84	50.84	4.16	6.54	5.73	3.63	7.1	7.1	8.59	9.22	3.25	4.94	0	0
SPP South - Energy Price - 1H2023	687	11/17/2024	11/17/2024	0	0	0	0	0	0	5.05	4.78	5.82	50.84	23.12	15.13	4.16	16.26	5.73	28.36	53.23	50.84	50.84	22.42	50.84	50.84	21.51	22.27
SPP South - Energy Price - 1H2023	688	11/18/2024	11/18/2024	6.78	3.99	7.27	3.99	21.21	20.03	33.81	30.45	30.45	30.45	30.45	33.81	30.45	30.45	32	30.45	30.45	33.94	33.81	33.81	30.45	30.45	20.03	20.03
SPP South - Energy Price - 1H2023	689	11/19/2024	11/19/2024	22.3	24.74	24.74	24.74	26.5	28.08	37.01	37.01	37.01	35.25	37.01	38.75	37.01	37.01	37.01	38.75	38.75	40.01	37.01	37.01	37.01	35.25	24.74	28.08
SPP South - Energy Price - 1H2023	690	11/20/2024	11/20/2024	25.98	25.98	25.98	25.98	25.98	25.98	38.56	45.66	40.53	45.47	43.3	40.53	39.84	42.61	38.56	40.53	42.48	43.48	45.24	43.54	44	43.31	31.24	28.08
SPP South - Energy Price - 1H2023	691	11/21/2024	11/21/2024	25.55	25.41	23.02	23.02	23.02	23.02	32.93	32.93	32.93	32.93	4.69	2.03	0	-10.8	-7.7	-10.47	3.76	7.41	32.93	32.93	32.93	32.93	23.02	23.34
SPP South - Energy Price - 1H2023	692	11/22/2024	11/22/2024	23.34	22.37	22.37	24.6	24.81	24.81	35.25	37.1	35.25	33.94	33.94	33.94	33.94	33.94	32.12	32.12	32.12	35.25	33.94	32.12	32.12	32.12	22.37	22.37
SPP South - Energy Price - 1H2023	693	11/23/2024	11/23/2024	22.36	22.37	22.37	22.37	24.81	24.81	58.16	58.17	58.16	58.16	56.64	56.64	56.63	56.63	56.63	53.51	56.63	56.64	56.64	56.64	56.64	56.64	25.48	25.48
SPP South - Energy Price - 1H2023	694	11/24/2024	11/24/2024	24.81	24.81	24.81	24.81	22.37	22.37	51.06	56.63	56.63	56.63	56.63	51.05	16.44	0	0	3.63	50.18	56.63	51.06	15.92	16.11	15.92	7.58	8.83
SPP South - Energy Price - 1H2023	695	11/25/2024	11/25/2024	1.79	9.53	1.54	9.68	25.47	28.08	35.95	35.95	35.95	35.95	35.95	35.95	35.95	40.14	41.47	40.37	41.47	41.47	41.98	41.98	41.98	41.47	29.12	28.34
SPP South - Energy Price - 1H2023	696	11/26/2024	11/26/2024	28.08	27.77	27.77	27.77	27.77	28.08	40.77	40.77	40.77	40.77	40.77	40.77	40.77	40.77	40.77	40.77	37.5	40.77	37.5	40.77	40.77	35.33	27.77	24.97
SPP South - Energy Price - 1H2023	697	11/27/2024	11/27/2024	24.97	24.59	24.96	24.63	24.59	25.11	34.87	40.24	40.24	40.24	40.24	40.24	40.24	40.24	40.24	40.24	40.7	40.7	40.71	40.7	40.7	40.7	28.1	28.08
SPP South - Energy Price - 1H2023	698	11/28/2024	11/28/2024	28.08	27.43	27.34	27.34	28.08	27.43	37.02	40.24	36.45	34.87	35.25	34.87	34.87	35.55	34.87	37.02	40.24	40.24	36.56	40.24	34.87	34.87	27.34	28.08
SPP South - Energy Price - 1H2023	699	11/29/2024	11/29/2024	25.26	25.26	23.88	22.76	22.76	12.32	32.61	32.61	32.61	32.61	32.61	32.61	32.61	29.96	30.23	29.23	32.61	32.61	32.61	32.61	33.94	32.61	22.76	22.76
SPP South - Energy Price - 1H2023	700	11/30/2024	11/30/2024	20.26	22.76	22.76	22.76	22.76	22.76	51.96	57.66	51.96	51.96	57.66	57.66	57.66	61.6	64.1	59.23	57.66	57.66	64.1	57.66	57.66	57.66	25.26	25.26
SPP South - Energy Price - 1H2023	701	12/1/2024	12/1/2024	29.7	29.7	30.52	29.7	29.7	29.7	36.93	36.93	36.93	36.93	33.23	36.93	34.37	34.06	33.23	33.23	36.93	36.93	36.93	36.93	36.93	36.93	30.52	29.7
SPP South - Energy Price - 1H2023	702	12/2/2024	12/2/2024	25.31	25.3	24.66	25.3	25.31	27.91	31.9	34.41	33.09	34.42	34.42	34	35.05	34.39	35.05	34.2	34.22	35.05	33.53	32.8	32.98	31.9	28.3	29.83
SPP South - Energy Price - 1H2023	703	12/3/2024	12/3/2024	29.02	26.29	26.29	26.29	26.29	28.3	33.45	33.37	32.94	32.64	32.64	31.48	31.48	31.48	31.48	31.48	32.64	34.49	34.91	33.05	33.37	33.37	26.29	29.02
SPP South - Energy Price - 1H2023	704	12/4/2024	12/4/2024	26.62	27.56	29.39	30.9	29.39	26.62	33.26	34.16	33.26	32.97	31.87	32.7	32.97	32.97	32.97	32.97	32.97	34.19	34.13	33.26	34.05	34.05	30.37	30.9
SPP South - Energy Price - 1H2023	705	12/5/2024	12/5/2024	30.37	30.9	28.47	27.57	27.57	27.57	34.26	34.4	34.26	33.94	34.1	34.26	34.26	34.26	32.7	33.93	33.93	33.93	33.93	34.26	33.93	34.26	30.71	27.57
SPP South - Energy Price - 1H2023	706	12/6/2024	12/6/2024	30.71	30.71	30.71	30.71	26.89	26.89	32.15	32.15	32.7	32.15	32.15	33.14	34.95	33.35	32.15	32.75	37.11	37.11	37.53	37.53	37.11	37.11	30.9	30.9
SPP South - Energy Price - 1H2023	707	12/7/2024	12/7/2024	30.71	30.71	30.71	30.71	30.9	30.71	38.42	39.91	38.42	38.19	37.16	37.16	37.16	37.16	37.16	37.16	37.16	38.19	38.19	38.19	38.19	37.16	29.89	29.89
SPP South - Energy Price - 1H2023	708	12/8/2024	12/8/2024	29.89	26.89	26.89	26.89	26.89	26.89	37.16	37.16	33.43	33.43	12.99	1.75	29.67	27.75	33.43	37.16	37.16	38.19	38.19	37.16	37.16	37.16	26.89	26.89
SPP South - Energy Price - 1H2023	709	12/9/2024	12/9/2024	28.61	23.97	11.4	1.22	8.22	10.29	32.7	31.48	31.25	10.46	9.67	8.87	27.54	26.77	25.34	32.7	33.94	39.15	39.15	39.15	34.74	35.54	31.85	31.85
SPP South - Energy Price - 1H2023	710	12/10/2024	12/10/2024	32.1	30.9	32.1	32.1	32.1	32.3	39.63	40.13	40.13	39.63	39.63	35.24	34.05	34.05	34.05	34.05	39.62	39.51	37.01	34.55	37.01	34.05	32.1	32.1
SPP South - Energy Price - 1H2023	711	12/11/2024	12/11/2024	33.19	33.19	33.19	33.19	33.19	33.19	40.55	41.08	40.55	40.55	40.55	40.55	40.55	34.86	39.38	38.08	39.95	40.55	40.55	40.55	40.55	40.55	33.19	32.1
SPP South - Energy Price - 1H2023	712	12/12/2024	12/12/2024	32.1	32.1	34.67	34.67	31.1	31.1	36.21	36.21	42.1	41.11	36.21	36.21	36.21	36.21	36.21	36.21	36.47	37.15	38.49	36.37	36.21	36.21	32.1	31.97
SPP South - Energy Price - 1H2023	713	12/13/2024	12/13/2024	30.9	30.9	30.9	30.9	30.9	30.9	34.22	38.81	38.81	33.34	33.34	32.7	32.7	32.7	31.48	33.34	33.34	34.22	33.34	33.34	33.34	33.34	30.9	28.33
SPP South - Energy Price - 1H2023	714	12/14/2024	12/14/2024	28.33	19.53	19.59	16.98	17.04	16.98	20.53	35.22	35.22	35.22	29	25.12	35.22	35.22	35.22	39.2	39.19	39.2	39.19	39.91	39.91	38.42	28.33	28.33
SPP South - Energy Price - 1H2023	715	12/15/2024	12/15/2024	28.33	28.33	28.33	28.33	28.33	28.33	35.22	35.22	35.22	35.22	38.42	39.19	39.19	39.19	38.42	39.19	39.2	39.91	39.91	39.2	39.91	39.2	31.52	31.52
SPP South - Energy Price - 1H2023	716	12/16/2024	12/16/2024	28.12	30.9	30.9	30.9	30.9	31.28	34.48	34.73	35.96	36	33.6	33.29	33.13	34.51	33.12	33.12	34.48	34.92	33.81	33.12	32.7	32.7	28.12	28.12
SPP South - Energy Price - 1H2023	717	12/17/2024	12/17/2024	27.92	27.92	27.92	27.92	27.92	30.9	32.92	32.92	32.91	32.92	32.91	32.92	32.91	32.92	32.91	32.91	32.91	33.49	34.4	34.57	33.02	32.92	30.9	30.9
SPP South - Energy Price - 1H2023	718	12/18/2024	12/18/2024	30.59	30.59	30.59	30.59	30.59	30.59	32.49	32.49	32.49	32.49	32.49	32.49	32.49	32.49	32.49	32.49	32.49	37.84	37.85	37.85	37.85	37.85	31.44	30.59
SPP South - Energy Price - 1H2023	719	12/19/2024	12/19/2024	28.96	28.96	26.07	26.07	26.07	26.07	30.99	30.99	30.99	30.99	30.99	30.99	30.99	29.96	30.99	30.99	30.99	30.99	30.99	30.99	30.99	31.48	28.96	28.96
SPP South - Energy Price - 1H2023	720	12/20/2024	12/20/2024	27.47	27.47	27.47	27.47	27.47	27.47	32.7	33.83	33.83	33.83	33.83	33.83	32.7	31.48	28.97	32.7	31.48	32.7	33.83	33.83	33.83	33.83	28.66	29.32
SPP South - Energy Price - 1H2023	721	12/21/2024	12/21/2024	29	27.47	28.43	27.47	28.66	28.41	34.32	38.42	38.42	38.42	38.42	34.15	38.42	33.26	36.44	38.42	38.42	38.42	38.42	38.42	38.42	38.42	30.37	30.9
SPP South - Energy Price - 1H2023	722	12/22/2024	12/22/2024	28.66	27.47	27.47	26.75	27.47	27.47	34.15	34.15	38.42	38.42	38.42	39.91	39.91	38.42	38.42	38.42	38.42	39.91	39.91	39.91	39.91	39.91	30.46	32.1
SPP South - Energy Price - 1H2023	723	12/23/2024	12/23/2024	30.9	32.1	30.9	30.9	30.9	28.91	32.7	34.57	34.94	34.19	34.19	34.19	32.7	31.48	31.48	31.48	32.7	32.7	32.7	32.7	32.7	34.53	30.9	27.1
SPP South - Energy Price - 1H2023	724	12/24/2024	12/24/2024	27.61	27.61	27.61	27.61	24.88	24.88	29.76	31.48	29.76	29.76	29.76	24.49	9.09	6.85	6.56	27.65	29.76	29.76	32.7	32.7	32.7	32.7	28.36	28.36
SPP South - Energy Price - 1H2023	725	12/25/2024	12/25/2024	28.36	28.36	28.29	27.61	27.61	28.36	34.73	34.73	34.73	34.73	34.73	34.73	32.7	32.7	31.48	32.7	34.73	34.73	34.73	34.73	34.73	34.73	28.36	27.61
SPP South - Energy Price - 1H2023	726	12/26/2024	12/26/2024	28.05	28.05	28.05	28.05	28.05	28.05	34.42	34.75	34.75	32.7	32.7	32.7	31.48	31.48	31.48	29.49	31.48	34.75	32.7	31.48	32.7	31.48	27.39	24.62
SPP South - Energy Price - 1H2023	727	12/27/2024	12/27/2024	26.88	24.24	26.88	24.24	26.88	27.61	32.7	33.97	33.97	33.97	33.97	33.97	33.97	33.97	32.7	32.7	33.97	33.97	33.97	33.97	33.97	33.35	27.61	27.61
SPP South - Energy Price - 1H2023	728	12/28/2024	12/28/2024	27.38	26.88	26.88	26.88	27.61	27.71	38.42	36.27	36.33	34.33	33.74	34.33	34.32	33.42	32.94	33.42	33.42	35.05	35	34.33	34.1	33.42	26.88	26.88
SPP South - Energy Price - 1H2023	729	12/29/2024	12/29/2024	26.88	24.24	26.88	26.88	27.61	24.38	33.42	34.32	33.42	33.42	30.14	30.14	30.14	30.14	30.14	30.14	30.14	34.32	34.33	35.18	34.33	34.32	27.61	27.61
SPP South - Energy Price - 1H2023	730	12/30/2024	12/30/2024	18.37	26.43	26.43	26.43	26.43	26.43	31.48	32.7	32.7	31.48	31.18	31.18	31.48	31.18	31.48	31.48	32.7	32.92	36.57	33.05	36.57	31.48	29.37	29.37
SPP South - Energy Price - 1H2023	731	12/31/2024	12/31/2024	26.2	26.2	29.1	29.1	29.1	29.1	34.37	36.68	36.68	36.68	36.68	36.68	36.68	36.68	36.28	36.28	36.28	36.28	34.17	31.55	31.48	31.33	26.2	26.2
SPP South - Energy Price - 1H2023	732	1/1/2025	1/1/2025	21.94	21.94	21.94	21.94	21.94	21.94	33.21	35	32.62	31.42	31.37	31.42	31.42	31.42	31.42	31.42	34.09	36.44	34.59	34.15	32.62	31.42	24.83	24.09
SPP South - Energy Price - 1H2023	733	1/2/2025	1/2/2025	24.3	24.3	24.3	24.3	25.65	25.65	34.19	34.19	34.19	34.19	34.19	34.19	34.19	34.19	34.48	34.45	37.47	39.41	39.82	39.82	39.82	39.81	26.63	26.63
SPP South - Energy Price - 1H2023	734	1/3/2025	1/3/2025	26.05	25.65	26.05	26.05	25.65	25.65	38.54	38.54	34.17	33.08	33.08	33.08	33.08	33.08	33.08	33.8	34.69	35.4	34.69	33.08	33.08	32.62	23.41	23.41
SPP South - Energy Price - 1H2023	735	1/4/2025	1/4/2025	23.41	23.41	23.41	10.12	23.41	23.41	42.43	42.43	47.22	47.22	47.22	46.49	47.22	47.22	47.22	47.22	47.22	47.22	47.23	47.22	47.22	46.49	25.65	23.41
SPP South - Energy Price - 1H2023	736	1/5/2025	1/5/2025	23.41	23.41	23.41	23.41	23.41	23.41	42.43	42.43	42.43	42.43	39.22	22.4	38.66	10.21	10.87	42.43	42.43	46.49	46.49	42.43	42.43	42.43	23.41	23.41
SPP South - Energy Price - 1H2023	737	1/6/2025	1/6/2025	21.34	21.34	21.34	21.34	21.34	21.34	30.49	31.42	35.58	31.42	31.42	31.42	30.49	30.49	30.49	30.49	30.49	30.49	30.49	30.49	30.49	31.42	23.7	23.7
SPP South - Energy Price - 1H2023	738	1/7/2025	1/7/2025	23.52	21.18	21.18	23.52	23.52	23.52	35.37	35.42	35.36	32.62	30.3	33.8	33.17	35.36	35.36	33.44	35.37	35.74	37.29	35.74	35.74	35.74	25.65	25.65
SPP South - Energy Price - 1H2023	739	1/8/2025	1/8/2025	23.64	23.64	23.64	24.13	23.64	23.64	34.72	34.72	34.72	34.72	35.08	34.72	33.75	33.91	31.94	34.24	34.13	34.51	34.72	34.5	34.52	34	23.01	23.01
SPP South - Energy Price - 1H2023	740	1/9/2025	1/9/2025	22.82	22.82	22.82	22.82	22.82	22.82	34.47	34.48	33.31	33.03	31.55	34.23	31.42	31.42	31.42	31.42	31.42	34.47	34.51	34.5	34.47	34.48	23.43	23.44
SPP South - Energy Price - 1H2023	741	1/10/2025	1/10/2025	21.23	21.23	23.11	25.04	25.04	25.04	32.06	34.36	34.36	34.12	32.8	32.06	32.06	31.79	31.79	31.79	31.79	31.79	31.79	32.06	31.79	31.79	23.9	20.68
SPP South - Energy Price - 1H2023	742	1/11/2025	1/11/2025	20.68	20.68	20.68	21.22	20.68	21.23	38.47	40.37	38.47	38.47	38.47	38.47	38.47	38.47	38.47	38.47	38.47	38.47	45.39	45.39	38.47	38.47	21.22	21.23
SPP South - Energy Price - 1H2023	743	1/12/2025	1/12/2025	21.22	20.68	20.68	18.68	18.68	18.68	33.86	37.48	38.47	33.86	20.43	6.64	4.14	2.71	2.5	4.14	10.64	36.07	33.86	33.86	33.85	33.86	18.68	18.68
SPP South - Energy Price - 1H2023	744	1/13/2025	1/13/2025	21.28	22.02	21.28	24.16	22.41	25.65	32.12	41.32	42.62	35.89	35.89	35.89	35.89	35.89	32.93	33.01	33.07	35.89	41.32	46.22	41.32	41.32	28.79	31.22
SPP South - Energy Price - 1H2023	745	1/14/2025	1/14/2025	25.85	25.85	25.65	25.85	25.65	33.02	43.72	49.13	49.14	46.78	47.81	44.97	43.72	41.4	42.32	41.39	34.27	34.29	33.8	33.8	33.24	31.67	22.62	22.62
SPP South - Energy Price - 1H2023	746	1/15/2025	1/15/2025	22.51	24.39	22.51	24.16	25.65	25.65	37.69	37.69	37.69	33.66	34.65	33.66	33.66	33.66	33.66	33.66	34.57	37.69	37.69	37.69	36.59	34.59	25.72	25.65

SPP South - Energy Price - 1H2023	747	1/16/2025	1/16/2025	25.01	24.58	25.65	25.65	25.65	21.53	36.26	46.91	36.26	37.18	34.58	34.56	36.01	34.67	36.26	36.26	38.06	46.74	46.87	46.73	36.26	34.56	25.65	25.65
SPP South - Energy Price - 1H2023	748	1/17/2025	1/17/2025	24.77	24.77	24.77	24.77	24.77	24.77	36.5	36.5	36.5	36.5	42.07	42.07	39.74	36.5	36.5	36.5	33.58	36.5	36.21	33.28	32.65	32.65	24.77	24.77
SPP South - Energy Price - 1H2023	749	1/18/2025	1/18/2025	24.77	21.7	12.32	18	13.05	21.7	39.33	39.33	44.9	42.81	41.37	39.33	46.49	46.49	44.91	44.91	39.33	46.49	48.27	46.49	44.91	46.49	25.65	25.65
SPP South - Energy Price - 1H2023	750	1/19/2025	1/19/2025	25.65	25.43	24.77	25.65	24.77	24.77	44.91	46.49	44.91	44.91	44.91	44.91	44.91	45.29	46.49	46.49	48.27	49.71	53.27	55.08	48.27	46.49	25.23	24.77
SPP South - Energy Price - 1H2023	751	1/20/2025	1/20/2025	25.29	25.39	25.29	25.29	25.65	25.65	37.15	41.35	38.14	37.15	33.6	31.42	31.59	31.64	22.56	28.01	27.49	25.89	31.42	31.42	31.42	26.45	9.79	11.25
SPP South - Energy Price - 1H2023	752	1/21/2025	1/21/2025	9.75	1.99	3.25	9.02	2.01	13.69	31.42	37.21	33.61	33.33	26.51	30.5	25.98	31.42	32.2	31.42	35.25	40.14	40.14	40.14	42.45	43.77	29.27	27.34
SPP South - Energy Price - 1H2023	753	1/22/2025	1/22/2025	29.83	29.07	28.27	26.01	26.01	26.63	38.47	42.84	38.47	38.47	32.62	31.42	31.42	31.42	29.6	31.42	31.42	34.7	38.47	38.47	38.47	38.12	26.01	26.01
SPP South - Energy Price - 1H2023	754	1/23/2025	1/23/2025	24.48	24.48	16.48	14.68	24.48	24.48	32.25	36.54	36.54	36.54	36.54	36.54	36.51	36.1	36.54	31.34	32.62	32.87	36.54	36.54	36.54	36.54	25.65	24.48
SPP South - Energy Price - 1H2023	755	1/24/2025	1/24/2025	23.6	15.22	11.7	10.12	10.18	24.14	32.62	32.62	31.42	10.99	17.14	31.42	31.4	7.79	31.42	29.87	7.19	36.12	46.59	45.05	46.85	42.06	27.64	27.64
SPP South - Energy Price - 1H2023	756	1/25/2025	1/25/2025	25.65	25.65	26.63	26.63	26.63	27.64	50.11	50.11	48.27	48.27	43.76	43.76	43.76	13.19	9.59	3.25	44.01	43.76	50.11	48.27	48.27	48.27	27.64	25.65
SPP South - Energy Price - 1H2023	757	1/26/2025	1/26/2025	26.61	26.63	26.63	26.63	27.64	27.64	50.11	58.05	50.11	50.11	48.27	46.49	50.11	50.08	46.2	43.76	13.07	50.11	50.11	50.11	48.27	48.27	25.65	25.65
SPP South - Energy Price - 1H2023	758	1/27/2025	1/27/2025	23.88	23.88	23.88	23.88	23.71	21.73	35.38	35.38	32.97	35.38	32.97	32.97	32.62	32.62	35.38	35.38	33.39	35.38	35.38	35.38	32.97	32.97	23.1	23.71
SPP South - Energy Price - 1H2023	759	1/28/2025	1/28/2025	23.1	20.27	21.38	23.1	23.34	23.78	34.41	40.78	36.84	34.72	34.4	33.6	32.13	31.42	31.42	31.42	31.42	32.13	31.42	31.42	31.42	32.13	20.27	22.04
SPP South - Energy Price - 1H2023	760	1/29/2025	1/29/2025	19.02	21.38	21.49	21.59	22.21	23.78	32.56	32.56	32.56	31.42	30.54	32.56	31.42	31.42	31.42	32.56	32.56	32.56	33.73	32.62	32.56	33.61	25.83	25.65
SPP South - Energy Price - 1H2023	761	1/30/2025	1/30/2025	24.06	24.06	24.06	24.06	24.06	24.06	35.61	37.26	35.31	35.23	35.23	35.23	35.23	35.23	35.23	35.23	35.23	35.23	36.55	35.61	35.61	35.61	25.65	24.12
SPP South - Energy Price - 1H2023	762	1/31/2025	1/31/2025	25.65	25.65	25.34	25.34	25.34	25.34	34.01	37.93	34.73	34.27	33.4	32.92	32.92	32.92	32.92	31.42	24.75	32.92	32.92	32.92	32.05	32.92	25.34	22.78
SPP South - Energy Price - 1H2023	763	2/1/2025	2/1/2025	10.32	20.81	23.83	23.83	25.47	25.81	29.14	29.14	32.42	29.14	29.14	29.14	5.86	5.86	1.3	1.48	5.59	29.14	31.92	29.14	29.14	29.14	26.51	26.51
SPP South - Energy Price - 1H2023	764	2/2/2025	2/2/2025	26.51	26.51	26.51	26.65	26.65	26.51	32.58	33.32	33.32	33.32	33.32	33.32	32.42	32.42	32.42	32.42	32.42	32.42	32.42	30.17	29.14	29.47	23.83	23.83
SPP South - Energy Price - 1H2023	765	2/3/2025	2/3/2025	24.6	24.6	24.6	24.6	24.6	26.65	36.7	36.7	36.7	33.86	8.27	4.99	0.69	7.45	4.64	0	0.48	1.25	6.89	7.27	7.27	12.02	5.72	2.53
SPP South - Energy Price - 1H2023	766	2/4/2025	2/4/2025	0	5.62	3.4	10.82	11.98	22.63	34.77	34.77	34.77	34.77	34.77	34.77	34.77	33.86	33.86	33.86	33.86	34.78	34.77	39.77	35.32	34.78	23.12	23.12
SPP South - Energy Price - 1H2023	767	2/5/2025	2/5/2025	21.62	21.62	21.62	21.62	21.62	21.62	33.86	37.93	37.54	37.54	35.16	35.05	35.16	34.86	33.86	33.73	32.96	35.15	36.81	37.54	37.54	37.54	25.64	24.65
SPP South - Energy Price - 1H2023	768	2/6/2025	2/6/2025	25.87	25.64	25.87	25.64	25.17	25.17	36.32	36.73	35.72	36.91	36.84	36.91	34.17	34.17	34.17	34.17	34.17	35.6	35.16	35.16	35.16	39.07	26	25.87
SPP South - Energy Price - 1H2023	769	2/7/2025	2/7/2025	25.75	25.06	25.36	25.46	25.75	25.75	39.39	40.2	41.16	41.01	39.37	39.37	36.96	34.98	34.53	34.04	34.04	37.02	38.06	37.76	37.37	38.93	26.65	25.75
SPP South - Energy Price - 1H2023	770	2/8/2025	2/8/2025	26.65	25.75	25.06	25.06	22.56	23.18	31.49	32.11	32.58	29.27	30.64	28.18	28.13	27.58	27.58	27.58	26.06	6.31	30.64	30.65	27.58	11	6.23	6.46
SPP South - Energy Price - 1H2023	771	2/9/2025	2/9/2025	6.6	1.11	9	12.97	22.56	22.56	27.58	31.35	30.65	30.65	30.96	31.49	31.13	27.83	27.58	30.64	30.64	30.96	31.49	31.49	30.64	27.58	22.56	22.56
SPP South - Energy Price - 1H2023	772	2/10/2025	2/10/2025	21.03	22.56	22.46	23.33	23.33	23.33	35.16	36.67	35.16	35.16	33.86	32.98	32.07	31.6	31.6	31.6	31.6	35.16	36.67	36.08	35.35	35.16	23.33	23.33
SPP South - Energy Price - 1H2023	773	2/11/2025	2/11/2025	23.09	23.09	23.09	23.09	23.09	23.09	35.22	36.36	33.86	31.33	31.89	33.86	7.53	7.45	1.35	1.54	1.41	31.33	33.86	31.33	31.33	31.33	14.14	10.11
SPP South - Energy Price - 1H2023	774	2/12/2025	2/12/2025	1.98	1.11	1.02	1.13	3.18	6.87	32.24	32.24	32.24	26.52	1.61	9.48	1.71	2.78	1.24	1.39	8.72	32.24	35.49	36.12	37.07	37.39	24.53	24.48
SPP South - Energy Price - 1H2023	775	2/13/2025	2/13/2025	23.64	23.64	21.31	23.64	23.64	23.64	34.14	37.08	33.72	33.96	34.26	34.75	34.54	34.4	31.96	33.15	32.85	33.09	34.27	35.36	34.36	33.86	21.31	21.31
SPP South - Energy Price - 1H2023	776	2/14/2025	2/14/2025	20.61	20.6	20.61	20.61	20.61	23.46	33.86	33.86	32.84	32.46	31.57	31.05	32	30.39	31.05	29.89	27.5	31.05	31.53	31.21	31.05	31.05	20.6	20.6
SPP South - Energy Price - 1H2023	777	2/15/2025	2/15/2025	20.6	15.59	20.6	20.6	20.61	20.61	26.65	28.69	28.68	27.93	27.93	27.38	26.18	25.19	25.19	25.19	23.42	24.74	6.63	25.19	25.19	25.19	20.6	20.6
SPP South - Energy Price - 1H2023	778	2/16/2025	2/16/2025	16.67	17.27	9	14.73	20.6	20.61	25.19	27.93	27.93	27.93	26.5	26.28	25.42	25.28	25.19	25.19	25.19	25.19	27.93	27.93	28.88	28.69	23.46	23.46
SPP South - Energy Price - 1H2023	779	2/17/2025	2/17/2025	26.65	27.33	27.33	27.33	27.66	27.66	41.89	42.41	43.28	43.52	43.82	42.41	42.41	41.89	42.41	39.68	41.89	41.89	41.89	41.89	41.89	39.64	25.12	24.55
SPP South - Energy Price - 1H2023	780	2/18/2025	2/18/2025	23.93	24.76	23.93	23.93	24.79	25.85	35.42	37.35	35.79	35.16	35.41	32.71	27.48	33.86	20.17	27.13	29.96	31.88	35.41	35.98	32.76	32.73	23.93	23.93
SPP South - Energy Price - 1H2023	781	2/19/2025	2/19/2025	26.82	26.65	26.65	26.65	26.65	26.65	36.69	38.49	33.86	33.86	33.86	30.94	28.74	1.41	7.45	1.39	4.57	6.56	29.42	34.91	35.16	33.86	20.96	6.46
SPP South - Energy Price - 1H2023	782	2/20/2025	2/20/2025	5.51	5.41	11.7	12.26	12.32	25.86	37.91	37.91	33.86	35.16	33.86	4.99	30.32	4.79	32.81	33.86	31.59	35.16	37.49	37.91	37.92	37.92	27.66	25.86
SPP South - Energy Price - 1H2023	783	2/21/2025	2/21/2025	25.81	25.98	23.37	25.98	25.98	25.98	35.66	35.7	35.3	34.68	33.86	1.72	1.71	0.37	1.24	1.54	6.56	6.15	33.86	34.68	34.68	34.68	23.37	23.37
SPP South - Energy Price - 1H2023	784	2/22/2025	2/22/2025	23.37	23.37	23.37	23.37	23.37	23.37	28.57	31.77	28.57	28.57	28.57	28.57	10.18	4.6	4.74	28.57	7.43	28.57	29.05	28.57	29.88	29.05	23.37	23.37
SPP South - Energy Price - 1H2023	785	2/23/2025	2/23/2025	23.37	23.37	23.37	23.37	23.37	23.37	28.57	29.94	28.94	28.57	28.57	28.57	7.25	1.35	0	1.48	0	1.21	25.39	27.69	28.57	28.57	23.37	23.37
SPP South - Energy Price - 1H2023	786	2/24/2025	2/24/2025	21.7	22.61	21.7	21.7	22.1	24.09	35.16	37.67	36.23	35.89	36.55	36.68	35.69	35.64	35.58	35.64	37.67	37.67	37.67	37.67	37.67	34.19	24.09	24.09
SPP South - Energy Price - 1H2023	787	2/25/2025	2/25/2025	25.34	25.34	25.34	24.82	25.34	25.34	35.16	39.29	35.16	34	34	34	34	34	30.67	11.88	33.33	6.56	32.75	33.86	33.2	34	22.8	22.8
SPP South - Energy Price - 1H2023	788	2/26/2025	2/26/2025	8.48	7.98	21.24	21.24	21.24	23.56	34.08	36.88	33.86	31.98	31.97	31.97	27.51	27.24	24.68	14.14	9.09	24.44	26.83	31.51	29.3	28.2	1.4	1.52
SPP South - Energy Price - 1H2023	789	2/27/2025	2/27/2025	1.45	1.33	1.39	1.35	1.24	7.13	32.96	32.96	31.61	6.42	29.08	29.08	25.98	32.03	32.96	31.87	27.7	32.96	33.86	33.86	38.02	33.86	25.09	24.43
SPP South - Energy Price - 1H2023	790	2/28/2025	2/28/2025	24.23	24.23	24.23	24.23	24.23	24.23	35.16	37.85	36.48	36.8	36.66	36.78	34.95	36.25	36.25	32.77	32.74	33.86	35.58	34.06	32.74	32.73	21.82	21.82
SPP South - Energy Price - 1H2023	791	3/1/2025	3/1/2025	13.34	6.99	6.72	6.76	6.63	7.31	20.99	7.69	1.94	0	0	0	0	0	0	0	0	1.87	12.08	7.76	7	1.49	1.01	5.32
SPP South - Energy Price - 1H2023	792	3/2/2025	3/2/2025	6.93	17.1	7.61	6.51	6.37	6.25	40.05	40.05	14.75	5.04	5.59	1.77	2.02	1.84	4.65	2.04	1.98	1.12	3.87	5.82	2.22	1.49	1.01	0
SPP South - Energy Price - 1H2023	793	3/3/2025	3/3/2025	0.87	0.86	6.71	3.94	7.2	19.42	31.46	35.29	10.5	30.26	26.32	34.86	35.64	38.53	38.71	32.32	31.51	32.81	33.26	36.63	35.14	36.56	20.39	6.19
SPP South - Energy Price - 1H2023	794	3/4/2025	3/4/2025	3.22	0	0	3.5	3.42	3.5	8.73	8.57	4.61	1.61	0.07	0	0	1.27	1.45	1.41	0	1.29	5.86	35.29	35.29	35.29	20.75	18.67
SPP South - Energy Price - 1H2023	795	3/5/2025	3/5/2025	22.09	12.69	21.78	22.09	22.09	22.09	43.03	43.03	40.07	38.52	39.58	43.03	43.03	43.03	39.69	43.03	43.03	43.03	47.45	47.45	43.03	43.03	22.61	22.09
SPP South - Energy Price - 1H2023	796	3/6/2025	3/6/2025	22.12	22.12	21.78	21.78	21.78	22.12	43.27	43.27	43.27	42.81	39.36	38.48	36.36	35.29	36.63	9.23	9.04	35.29	39.33	43.27	43.27	42.92	22.12	22.12
SPP South - Energy Price - 1H2023	797	3/7/2025	3/7/2025	20.37	20.27	20.32	20.29	21.81	22.61	41.53	42.26	39.33	36.63	39.24	35.86	35.86	35.29	35.29	35.29	35.86	35.86	36.63	35.86	35.86	35.86	15.56	6.57
SPP South - Energy Price - 1H2023	798	3/8/2025	3/8/2025	1.19	8.12	6.72	15.66	17.79	17.79	45.37	41.66	41.2	41.66	41.66	11.32	41.66	46.25	46.25	46.97	46.91	46.8	51.02	50.65	47.91	46.42	19.75	19.75
SPP South - Energy Price - 1H2023	799	3/9/2025	3/9/2025	19.75	18.43	19.75	17.79	19.75	19.75	47.24	47.16	46.25	41.66	41.66	46.25	46.25	35.93	8.56	13.34	41.66	46.8	50.13	46.25	41.66	46.25	6.25	6.25
SPP South - Energy Price - 1H2023	800	3/10/2025	3/10/2025	2	6.25	1.14	1.11	1.01	6.25	35.29	33	33	33	33	33	33	33	33	33	33	11.27	5.86	2.86	5.13	4.97	1.01	0.83
SPP South - Energy Price - 1H2023	801	3/11/2025	3/11/2025	3.2	3.07	3.09	3.07	8.54	18.68	37.56	35.29	35.29	35.29	35.29	36.63	37.56	36.63	36.63	36.63	36.63	36.63	36.63	37.56	35.29	35.29	18.68	18.68
SPP South - Energy Price - 1H2023	802	3/12/2025	3/12/2025	19.21	19.21	17.31	17.31	17.31	17.31	35.29	34.25	34.25	20.47	35.29	36.63	35.29	34.25	35.29	36.63	35.29	38.17	38.75	40.08	38.44	38.17	20.19	19.49
SPP South - Energy Price - 1H2023	803	3/13/2025	3/13/2025	20.09	18.09	19.97	20.09	21.78	21.78	39.9	39.9	38.63	39.9	35.54	35.54	39.9	38.63	37.24	35.54	35.54	35.54	35.54	35.54	35.54	35.54	20.09	18.74
SPP South - Energy Price - 1H2023	804	3/14/2025	3/14/2025	18.74	16.9	16.9	18.74	16.9	16.9	33.56	33.56	36.63	35.29	35.29	37.66	37.65	37.65	37.65	37.65	37.65	37.65	36.76	35.29	35.29	33.56	16.9	10.17
SPP South - Energy Price - 1H2023	805	3/15/2025	3/15/2025	6.87	6.99	9	9.43	4.83	4.89	16.14	12.44	10.38	9.67	0	1.27	0	1.54	2.1	2.04	13.08	12.6	17.98	39.35	38.54	38.31	16.9	16.61
SPP South - Energy Price - 1H2023	806	3/16/2025	3/16/2025	16.8	10.13	7.73	7.26	17.72	16.9	44.96	46.06	52.13	49.25	46.85	45.59	43.89	43.89	43.89	39.58	39.95	41.51	39.58	41.35	39.58	39.58	16.9	16.9
SPP South - Energy Price - 1H2023	807	3/17/2025	3/17/2025	18.21	18.21	18.21	18.21	20.15	18.91	35.67	35.67	38.2	38.55	36.32	35.67	35.29	36.03	36.6	35.67	35.29	35.29	35.29	35.29	16.5	9.29	3.04	0
SPP South - Energy Price - 1H2023	808	3/18/2025	3/18/2025	0	0	0	2.46	2.66	5.92	35.04	9.68	6.16	4.19	2.06	1.22	1.4	0	1.45	0	0	0	2.73	10.52	35.04	35.04	17.83	17.83
SPP South - Energy Price - 1H2023	809	3/19/2025	3/19/2025	17.96	6.91	6.71	7.73	6.63	17.96	35.25	35.25	13.61	3.46	1.32	0.98	1.21	6.05	1.45	1.41	9.04	5.12	12.44	35.29	35.64	36.63	19.94	18.96
SPP South - Energy Price - 1H2023	810	3/20/2025	3/20/2025	19.72	21.24	20.04	21.24	21.24	21.78	41.81	41.81	41.81	42.3	41.81	41.81	41.81	41.81	41.81	40.35	39.59	36.63	39.35	36.29	36.29	36.29	7.35	2.84
SPP South - Energy Price - 1H2023	811	3/21/2025	3/21/2025	3.08	1.09	1.14	1.11	2.66	0.9	7.05	6.5	1.34	1.26	0	0.98	1.27	1.27	4.6	12.39	35.29	35.29	35.39	35.39	35.39	35.39	18.56	18.56
SPP South - Energy Price - 1H2023	812	3/22/2025	3/22/2025	7.92	11.61	18.56	19.27	19.65	20.62	48.3	48.77	44.49	48.74	48.3	48.3	12.54	43.47	43.47	13.34	8.22	16.03	43.47	46.88	43.47	43.47	18.56	18.55
SPP South - Energy Price - 1H2023	813	3/23/2025	3/23/2025	12.56	18.55	18.55	19.27	19.23	20.08	48.3	48.3	48.3	48.3	48.29	44.32	47.12	34.41	43.46	12.64	16.96	43.47	30.99	30.99	30.43	17.16	12.99	0.83
SPP South - Energy Price - 1H2023	814	3/24/2025	3/24/2025	6.93	18.96	13.69	8.63	18.96	21.66	41.54	36.06	36.06	37.21	36.06	41.48	41.54	38.38	38.22	41.54	40.71	41.54	41.54	41.54	41.54	36.79	21.08	20.42
SPP South - Energy Price - 1H2023	815	3/25/2025	3/25/2025	18.29	18.29	6.71	12.65	18.29	20.32	35.29	34.95	34.95	36.63	36.55	38.03	36.63	37.03	40.28	40.28	40.28	39.11	40.28	40.28	40.28	40.28	20.88	20.88
SPP South - Energy Price - 1H2023	816	3/26/2025	3/26/2025	20.09	20.09	19.56	19.56	19.56	19.56	36.63	36.63	36.63	37.15	37.24	39.02	35.63	35.29	35.29	35.29	35.29	35.29	36.63	35.29	35.29	33.85	17.62	19.56
SPP South - Energy Price - 1H2023	817	3/27/2025	3/27/2025	16.63	18.44	18.44	18.44	18.93	18.82	35.29	35.29	35.29	36.63	36.63	35.29	35.29	36.25	35.29	33.35	35.29	32.22	33.35	37.16	36.63	37.16	18.44	16.63
SPP South - Energy Price - 1H2023	818	3/28/2025	3/28/2025	7.92	7.68	15.55	15.55	15.55	17.21	30.43	35.12	30.97	35.12	35.12	30.43	30.89	35.12	33.84	35.12	33.76	35.12	34.74	35.29	35.29	35.4	17.66	17.21
SPP South - Energy Price - 1H2023	819	3/29/2025	3/29/2025	15.55	15.55	16.68	17.66	17.66	17.21	41.37	41.37	41.37	41.37	41.37	41.37	40.31	41.37	41.37	41.37	42.36	42.46	42.6	42.46	40.31	40.31	17.21	17.21
SPP South - Energy Price - 1H2023	820	3/30/2025	3/30/2025	17.21	15.83	15.55	15.55	17.21	17.21	40.31	40.31	36.43	9.65	2.71	0	0	0	0	0	0	2.21	10.8	2.78	3.2	2.85	0	0
SPP South - Energy Price - 1H2023	821	3/31/2025	3/31/2025	0	0	0	0	0	0.66	1.97	0	0	0	6.83	31.21	31.21	34.38	31.21	31.21	35.29	35.29	36.01	36.01	36.01	36.01	17.75	17.75
SPP South - Energy Price - 1H2023	822	4/1/2025	4/1/2025	22.18	22.18	22.18	22.18	22.18	22.18	40.18	37.93	40.18	40.18	37.93	2.09	1.7	13.87	13.85	1.62	37.93	37.93	37.93	37.93	37.93	37.93	20.33	4.14
SPP South - Energy Price - 1H2023	823	4/2/2025	4/2/2025	10	10.36	9.43	1.46	15.54	17.3	38.17	38.17	13.61	13.1	22.67	6.34	6.89	4.68	11.29	4.45	3.52	4.45	5.17	5.5	4.84	1.08	0.22	0
SPP South - Energy Price - 1H2023	824	4/3/2025	4/3/2025	0	0	0	0.09	1.41	3.83	8.79	14.14	38.95	8.17	8.17	3.89	11.85	38.95	8.88	1.62	8.88	38.95	1.85	2.19	2.52	2.73	1.16	0.02
SPP South - Energy Price - 1H2023	825	4/4/2025	4/4/2025	1.66	1.59	1.37	1.46	1.41	3.6	5.37	8.47	13.61	36.75	36.75	13.14	10.66	7.08	11.59	8.06	3.52	2.39	10.66	36.75	40.18	36.75	19.58	12.04
SPP South - Energy Price - 1H2023	826	4/5/2025	4/5/2025	12.38	12.28	20.16	19.58	21.34	21.34	40.17	38.01	36.85	36.85	41.24	38.01	36.85	34.87	18.96	11.32	29.22	39.85	36.85	36.85	36.85	36.85	19.58	19.58
SPP South - Energy Price - 1H2023	827	4/6/2025	4/6/2025	19.58	19.58	19.58	19.58	5.54	9.5	36.49	17.82	36.85	36.85	37.96	36.85	37.43	40.17	36.85	40.17	40.17	40.17	41.1	41.24	41.24	40.17	21.35	20.07
SPP South - Energy Price - 1H2023	828	4/7/2025	4/7/2025	19.04	10.36	19.65	19.04	19.04	20.74	40.29	35.9	35.9	35.9	18.07	4.37	14.08	7.93	2.59	8.06	1.66	1.74	35.9	35.9	16.92	7.39	1.48	1.28
SPP South - Energy Price - 1H2023	829	4/8/2025	4/8/2025	1.66	0.95	0	1.46	1.41	4.35	37.02	3.93	2.09	1.9	2.13	2.09	13.65	18.47	16.63	37.02	37.02	37.02	41.54	41.54	41.54	38.11	19.75	19.75

SPP South - Energy Price - 1H2023	830	4/9/2025	4/9/2025	1.66	1.59	3.35	3.43	9.8	9.5	37.7	40.18	37.7	37.7	37.71	37.7	37.7	37.7	37.7	37.71	37.7	37.71	37.71	37.18	37.7	10.82	1.48	1.28
SPP South - Energy Price - 1H2023	831	4/10/2025	4/10/2025	1.36	1.59	6.79	1.46	6.45	19.98	36.63	36.63	36.63	36.63	36.63	36.63	38.22	36.63	36.63	36.63	36.63	36.63	36.63	37.01	36.63	36.63	19.98	19.98
SPP South - Energy Price - 1H2023	832	4/11/2025	4/11/2025	19.84	19.84	19.84	21.63	21.63	21.63	41.69	40.18	13.61	14.8	2.13	2.09	1.7	1.63	1.76	1.62	0.8	1.74	0	8.95	7.71	36.41	19.84	4.99
SPP South - Energy Price - 1H2023	833	4/12/2025	4/12/2025	0	0	0	0	0	0.99	2.29	2.01	0	0	0	0	0	0	0	0	0	0	0	16.34	37.34	37.34	19.84	19.84
SPP South - Energy Price - 1H2023	834	4/13/2025	4/13/2025	19.84	19.84	18.25	18.25	19.84	19.84	37.34	37.34	30.95	15.97	37.34	37.34	16.63	12.95	27.5	36.41	37.34	40.71	41.62	41.8	41.8	40.71	21.63	19.84
SPP South - Energy Price - 1H2023	835	4/14/2025	4/14/2025	19.66	19.66	19.66	19.66	19.66	19.66	36.41	36.13	36.13	36.13	36.13	36.13	4.57	13.87	13.85	14.82	14.82	9.62	34.29	14.82	16.92	16.77	10.57	9.42
SPP South - Energy Price - 1H2023	836	4/15/2025	4/15/2025	5.09	5.16	1.37	1.46	9.42	19.93	40.58	36.79	36.54	36.54	34.47	9.91	1.7	1.63	9.91	9.77	8.8	14.83	36.54	40.18	36.54	36.54	10.57	9.42
SPP South - Energy Price - 1H2023	837	4/16/2025	4/16/2025	20.07	20.07	20.07	20.07	20.07	21.88	36.76	14.14	7.73	1.9	0	2.09	1.7	0	0	8.06	9.85	10.1	9.4	2.19	2.52	2.73	1.48	1.28
SPP South - Energy Price - 1H2023	838	4/17/2025	4/17/2025	7.14	1.59	1.37	1.46	1.41	1.46	9.02	3.27	11.55	1.9	0	5.41	6.35	1.63	1.76	1.62	1.66	1.74	1.85	13.04	2.52	16.77	10.76	9.42
SPP South - Energy Price - 1H2023	839	4/18/2025	4/18/2025	10.76	6.55	10.76	9.49	21.67	21.67	41.21	40.86	40.86	40.86	40.86	41.21	40.86	40.86	40.86	40.86	41.21	40.86	40.86	40.86	40.86	40.18	21.11	21.11
SPP South - Energy Price - 1H2023	840	4/19/2025	4/19/2025	21.11	21.11	19.37	19.37	21.11	21.11	40.78	39.72	39.72	39.73	39.73	36.45	36.45	16.9	2.15	16.51	18.67	17.95	7.25	7.02	3.07	3.33	1.48	6.28
SPP South - Energy Price - 1H2023	841	4/20/2025	4/20/2025	5.78	17.15	18.85	19.22	18.85	19.37	2.74	36.45	14.08	2.31	6.36	37.52	36.45	36.45	39.73	40.39	40.05	40.78	40.67	36.45	38.05	36.45	19.37	19.37
SPP South - Energy Price - 1H2023	842	4/21/2025	4/21/2025	10.76	10.36	9.43	9.49	18.84	18.84	39.93	40.18	40.18	40.01	40.25	40.18	40.25	40.25	40.25	40.25	40.25	41.43	41.43	40.25	40.25	40.18	22.04	20.94
SPP South - Energy Price - 1H2023	843	4/22/2025	4/22/2025	20.94	20.94	20.94	21.49	20.94	20.94	40.59	35.42	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.93	40.59	40.59	40.59	40.59	20.94	20.94
SPP South - Energy Price - 1H2023	844	4/23/2025	4/23/2025	18.79	20.46	18.79	20.46	21	21	39.83	40.15	40.11	40.15	40.15	39.83	35.55	34.75	34.75	34.75	34.74	34.75	34.75	34.75	34.74	34.74	1.48	1.28
SPP South - Energy Price - 1H2023	845	4/24/2025	4/24/2025	13.71	6.26	13.71	3.43	18.7	18.7	34.61	34.61	34.61	34.61	29.13	2.09	1.7	1.63	1.76	1.62	1.66	5.4	13.95	14.47	34.61	34.61	10.57	4.31
SPP South - Energy Price - 1H2023	846	4/25/2025	4/25/2025	5.09	5.09	3.96	3.43	9.8	18.53	39.37	39.38	37.33	39.38	34.34	37.47	34.34	34.34	10.89	34.34	34.34	1.74	1.85	2.19	2.52	0	0	0
SPP South - Energy Price - 1H2023	847	4/26/2025	4/26/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17.63	19.41	34.86	18.53	18.53
SPP South - Energy Price - 1H2023	848	4/27/2025	4/27/2025	8.83	10.36	9.43	9.49	9.8	18.53	19.41	19.41	9.02	0	0	0	0	0	0	0	25.52	28.62	34.86	37.95	37.96	34.86	18.53	18.53
SPP South - Energy Price - 1H2023	849	4/28/2025	4/28/2025	19.17	18.19	1.65	5.63	5.28	5.37	5.13	1.87	1.81	0	2.14	2.47	10.38	7.57	35.35	9.43	17.16	3.46	13.16	35.35	19.17	14.12	8.86	7.3
SPP South - Energy Price - 1H2023	850	4/29/2025	4/29/2025	5.59	4.97	4.36	4.02	5.59	6.9	36.09	33.65	36.09	36.09	36.58	41.7	41.33	41.7	41.7	41.7	41.71	41.7	41.7	41.7	41.33	41.7	21.98	21.41
SPP South - Energy Price - 1H2023	851	4/30/2025	4/30/2025	21.25	20.79	21.25	20.53	19.5	20.79	37.93	40.18	40.18	41.09	40.18	40.18	41.44	41.44	41.44	41.73	41.44	41.44	41.71	41.44	41.09	41.09	21.25	21.25
SPP South - Energy Price - 1H2023	852	5/1/2025	5/1/2025	24.49	24.93	24.64	24.92	24.93	24.93	30.75	30.75	30.66	29.58	27.21	27.21	29.58	30.75	26.81	26.81	26.81	30.75	28.65	26.81	26.81	19.33	5.81	10.87
SPP South - Energy Price - 1H2023	853	5/2/2025	5/2/2025	5.73	5.74	2.05	2.01	21.62	21.62	25.54	3.68	1.42	23.58	19.42	24.46	8.17	9.83	17.86	25.54	29.32	29.32	8.91	12	29.51	25.54	8.91	11.05
SPP South - Energy Price - 1H2023	854	5/3/2025	5/3/2025	11.3	0	2.05	2.01	8.83	21.62	25.52	12.55	25.52	25.52	23.48	16.28	23.09	25.52	25.52	25.52	25.52	25.52	25.52	27.75	25.52	25.52	21.62	11.59
SPP South - Energy Price - 1H2023	855	5/4/2025	5/4/2025	11.06	12.16	2.05	0	8.07	6.66	9.23	7.53	0	6.61	25.52	8.71	22.88	13.57	22.15	25.52	25.52	25.52	27.75	28.46	28.46	28.46	23.5	23.5
SPP South - Energy Price - 1H2023	856	5/5/2025	5/5/2025	22.88	22.88	21.06	22.88	22.88	22.88	28.87	26.09	24.98	25.82	24.98	24.98	24.98	24.98	24.98	16.91	24.98	24.98	25.82	28.87	30.98	28.87	23.46	23.46
SPP South - Energy Price - 1H2023	857	5/6/2025	5/6/2025	23.62	23.62	23.6	23.62	23.62	23.62	29.44	29.44	29.44	29.44	29.44	28.86	29.44	29.44	27.71	25.65	29.44	25.65	29.64	28.97	29.44	26.59	21.73	21.73
SPP South - Energy Price - 1H2023	858	5/7/2025	5/7/2025	23.01	23.01	23.01	23.01	24.38	25.71	30.94	30.63	28.53	30.91	31.11	31.11	31.11	31.11	31.11	30.87	30.87	31.11	31.11	31.11	31.11	30.87	23.86	23.01
SPP South - Energy Price - 1H2023	859	5/8/2025	5/8/2025	23.31	10.37	8.67	9.15	23.31	25.39	30.09	27.22	27.22	27.23	27.22	10.94	27.09	27.22	27.23	25.05	27.23	27.23	31.21	31.21	31.21	30.8	25.39	23.25
SPP South - Energy Price - 1H2023	860	5/9/2025	5/9/2025	11.3	13.1	23.25	23.25	23.25	25.32	30.57	27.17	30.45	30.91	31.39	31.39	34.02	31.39	31.39	31.39	31.39	31.39	34.59	32.68	32.68	31.39	28.68	25.99
SPP South - Energy Price - 1H2023	861	5/10/2025	5/10/2025	25.99	25.99	25.99	25.32	24.64	25.99	30.68	31.64	32.98	35.67	35.6	33.75	36.16	36.16	38.12	38.12	32.68	33.39	36.6	38.12	39.58	37.01	28.69	27.41
SPP South - Energy Price - 1H2023	862	5/11/2025	5/11/2025	25.99	25.32	25.32	25.32	25.99	25.99	30.68	30.85	30.68	31.93	33.46	36.6	37.82	37.87	38.12	36.16	36.16	38.12	33	30.68	29.9	28.09	23.45	23.45
SPP South - Energy Price - 1H2023	863	5/12/2025	5/12/2025	13.29	23.45	9.66	23.45	24.85	23.45	27.52	31.36	28.85	31.36	31.48	31.48	31.61	31.61	31.48	31.48	28.85	31.36	31.36	27.36	27.36	31.36	10.95	11.07
SPP South - Energy Price - 1H2023	864	5/13/2025	5/13/2025	17.06	23.84	16.81	23.84	21.93	23.84	27.43	23.24	27.68	21.63	6.18	7.19	8.17	27.75	27.75	31.8	31.8	27.75	28.1	31.35	31.48	27.75	15.05	16.36
SPP South - Energy Price - 1H2023	865	5/14/2025	5/14/2025	10.87	8.17	5.56	9.15	22.01	23.92	14.51	27.83	29.37	31.89	31.89	31.89	31.89	32.16	31.89	32.16	31.89	31.89	32.16	32.16	32.16	32.16	23.92	23.92
SPP South - Energy Price - 1H2023	866	5/15/2025	5/15/2025	26.39	26.39	25.41	24.21	24.22	26.39	29.78	31.13	32.21	32.49	32.49	32.68	32.68	32.49	32.49	32.68	32.49	32.49	32.49	32.49	32.49	32.21	26.39	24.22
SPP South - Energy Price - 1H2023	867	5/16/2025	5/16/2025	24.11	24.11	24.11	24.11	24.11	24.33	31.48	28.96	30.09	32.1	32.1	32.1	31.48	32.1	32.1	32.1	32.38	32.1	32.1	32.38	32.38	31.48	26.98	26.98
SPP South - Energy Price - 1H2023	868	5/17/2025	5/17/2025	26.28	24.11	21.17	24.11	24.11	24.11	28.47	31.03	31.85	32.79	31.85	31.85	31.85	31.03	31.85	31.85	28.47	31.03	31.03	31.54	31.03	28.47	5.71	20.56
SPP South - Energy Price - 1H2023	869	5/18/2025	5/18/2025	24.11	24.11	5.75	7.38	24.11	4.59	2.09	26.19	26.19	28.47	28.47	31.03	31.03	28.47	28.47	31.03	31.03	28.47	28.47	28.47	28.47	17.93	24.11	24.11
SPP South - Energy Price - 1H2023	870	5/19/2025	5/19/2025	7.91	5.74	20.48	24.85	24.85	25.66	28.75	28.75	28.75	28.75	31.26	32.68	32.68	31.48	31.48	31.48	31.48	31.48	31.48	32.68	32.68	31.48	24.85	24.85
SPP South - Energy Price - 1H2023	871	5/20/2025	5/20/2025	5.97	24.99	9.66	13.63	24.99	24.99	28.89	28.89	30.33	31.48	31.48	32.68	31.48	32.68	31.48	31.48	31.48	31.48	28.89	31.48	31.48	29.51	24.98	24.98
SPP South - Energy Price - 1H2023	872	5/21/2025	5/21/2025	2.04	1.98	2.05	2.01	6.74	4.59	17.42	4.48	3.5	3.69	7.12	24.35	28.69	28.69	28.69	26.68	21.75	21.01	23.11	28.69	28.69	20.48	2.06	2.12
SPP South - Energy Price - 1H2023	873	5/22/2025	5/22/2025	2.04	1.98	2.05	2.01	1.98	1.69	7.62	6.62	5.7	5.46	6.18	17.94	17.72	28.42	28.42	28.42	31.48	28.42	28.47	28.47	32.55	31.48	25.43	24.51
SPP South - Energy Price - 1H2023	874	5/23/2025	5/23/2025	18.22	18.39	18.51	18.64	18.85	23.66	27.57	27.57	27.98	27.57	27.57	27.98	31.48	27.57	27.57	27.57	27.57	31.48	31.48	27.57	27.57	5.53	3.38	23.66
SPP South - Energy Price - 1H2023	875	5/24/2025	5/24/2025	2.04	1.68	0	6.36	0	3.67	6.9	5.43	6.9	1.8	23.11	27.94	27.94	27.94	31.24	30.5	32.68	31.24	31.24	31.24	27.94	27.94	12.49	9.05
SPP South - Energy Price - 1H2023	876	5/25/2025	5/25/2025	6.94	8.17	5.42	6.36	6.26	17.52	9.23	8.01	6.9	27.94	30.43	27.94	30.43	27.94	27.94	19.14	15.16	13.99	21.91	30.43	27.94	30.43	23.66	11.59
SPP South - Energy Price - 1H2023	877	5/26/2025	5/26/2025	23.66	1.98	2.05	5.52	9.44	23.66	5.58	6.22	4.24	27.57	27.57	31.48	31.48	31.48	31.86	31.48	31.86	31.6	31.6	31.6	31.6	31.48	24.41	23.66
SPP South - Energy Price - 1H2023	878	5/27/2025	5/27/2025	24.41	5.74	11.62	24.41	24.41	24.41	24	28.74	30.42	29.32	32.68	32.72	33.66	33.3	32.72	34.46	34.2	34.42	34.45	34.2	33.66	32.72	27.32	25.33
SPP South - Energy Price - 1H2023	879	5/28/2025	5/28/2025	27.27	27.27	27.54	27.27	27.27	27.54	31.48	30.01	30.74	31.48	33.09	32.68	32.68	33.09	33.09	33.09	33.09	32.68	31.48	31.48	29.07	11.06	2.06	1.13
SPP South - Energy Price - 1H2023	880	5/29/2025	5/29/2025	25.17	6.98	0	0	4.6	25.17	5.79	29.07	31.48	29.07	31.48	29.07	29.07	31.48	31.48	31.48	32.68	31.48	29.07	29.07	29.07	29.07	8.87	25.17
SPP South - Energy Price - 1H2023	881	5/30/2025	5/30/2025	25.63	4.7	6.38	0	1.05	25.63	24.08	29.52	29.52	2.82	29.52	29.52	29.52	29.52	29.52	29.52	29.52	29.52	29.52	29.52	29.52	29.52	25.63	7.27
SPP South - Energy Price - 1H2023	882	5/31/2025	5/31/2025	25.63	1.76	1.48	1.48	25.52	5.03	4.75	3.56	30.26	30.26	33.01	32.89	30.26	30.26	33.01	33.02	30.26	33.01	33.02	33.02	33.02	33.02	27.97	27.96
SPP South - Energy Price - 1H2023	883	6/1/2025	6/1/2025	23.36	25.1	23.1	25.09	25.21	25.21	29.57	29.57	30.37	30.37	30.37	30.37	33.35	33.35	33.35	33.35	33.35	33.35	33.35	30.37	30.37	29.57	25.21	23.1
SPP South - Energy Price - 1H2023	884	6/2/2025	6/2/2025	19.9	19.9	19.89	19.9	19.9	19.9	28.64	28.64	28.64	28.64	32.85	32.85	32.85	32.85	33.1	32.85	32.85	34.01	32.85	33.1	33.1	32.85	21.65	21.65
SPP South - Energy Price - 1H2023	885	6/3/2025	6/3/2025	20.57	19.54	21.26	19.54	20.35	19.77	29.28	32.37	32.37	32.6	34.01	34.62	34.83	35.2	34.01	35.31	34.01	34.01	36.51	35.55	35.76	35.2	25.65	25.05
SPP South - Energy Price - 1H2023	886	6/4/2025	6/4/2025	22.79	22.16	22.16	22.16	22.16	22.16	33.03	32.79	32.79	33.03	32.79	33.9	36.04	33.03	36.04	37.12	35.25	36.04	35.46	33.03	33.03	32.79	22.16	19.85
SPP South - Energy Price - 1H2023	887	6/5/2025	6/5/2025	19.73	19.62	19.3	19.3	19.3	19.73	32.04	32.04	32.04	32.25	32.26	33.04	34.01	33.04	34.01	33.04	32.26	32.26	32.25	32.26	32.26	32.25	19.3	19.3
SPP South - Energy Price - 1H2023	888	6/6/2025	6/6/2025	18.31	18.31	18.31	7.16	18.31	18.31	26.7	27.66	30.68	30.68	30.86	34.01	34.01	34.01	34.01	33.4	33.4	33.4	33.4	34.01	34.01	34.01	22.47	19.88
SPP South - Energy Price - 1H2023	889	6/7/2025	6/7/2025	18.31	18.31	18.31	19.88	19.88	19.88	23.32	23.32	25.27	28.04	33.35	33.35	33.35	33.35	34.62	34.62	33.35	28.04	25.31	23.91	24.38	23.91	19.88	19.88
SPP South - Energy Price - 1H2023	890	6/8/2025	6/8/2025	19.88	19.88	20.39	20.39	20.39	20.39	23.32	23.32	23.32	23.32	23.32	23.32	23.91	23.32	23.32	23.32	23.91	23.91	23.91	25.15	23.91	23.91	19.88	20.39
SPP South - Energy Price - 1H2023	891	6/9/2025	6/9/2025	23.24	22.94	22.94	22.94	22.94	22.94	34.44	34.44	34.73	35.31	35.31	35.31	35.31	34.73	34.73	34.73	34.73	34.44	34.44	34.01	30.06	30.34	21.06	22.94
SPP South - Energy Price - 1H2023	892	6/10/2025	6/10/2025	21.81	21.91	23.78	21.81	23.78	23.78	35.31	35.46	35.47	35.47	35.47	35.79	35.47	36.08	36.99	37.56	35.79	35.46	35.46	36.99	35.79	35.47	24.42	21.81
SPP South - Energy Price - 1H2023	893	6/11/2025	6/11/2025	4.32	1.51	22.36	24.39	24.39	25.05	34.01	35.31	36.21	36.56	36.56	37	36.92	37	40.33	46.89	37.86	36.56	36.21	36.56	36.56	36.21	24.46	24.39
SPP South - Energy Price - 1H2023	894	6/12/2025	6/12/2025	23.85	23.85	23.85	23.85	23.85	24.38	35.31	35.55	35.56	37.09	38.36	39.67	39.51	46.1	46.1	46.53	46.1	37.32	37.1	37.44	36.49	35.68	22.7	21.87
SPP South - Energy Price - 1H2023	895	6/13/2025	6/13/2025	20.87	21.88	21.88	21.88	21.88	22.45	33.13	33.13	31.54	30.48	33.13	33.13	33.13	33.38	31.89	33.13	33.13	33.13	33.13	33.13	33.13	33.13	22.45	21.88
SPP South - Energy Price - 1H2023	896	6/14/2025	6/14/2025	20.1	20.1	20.1	20.1	20.1	18.7	23.57	23.57	23.57	25.66	23.61	25.66	26.33	26.33	26.33	26.33	26.33	25.66	26.33	26.33	26.33	25.66	21.88	20.1
SPP South - Energy Price - 1H2023	897	6/15/2025	6/15/2025	20.1	20.1	20.1	20.1	20.1	20.1	23.57	23.57	25.66	25.66	25.66	25.66	26.33	26.33	26.33	25.66	25.66	25.66	25.66	25.66	26.33	26.33	21.88	21.88
SPP South - Energy Price - 1H2023	898	6/16/2025	6/16/2025	21.96	21.96	21.96	21.96	21.96	21.96	31.32	31.15	31.54	31.15	34.01	31.15	31.15	31.15	34.01	31.15	34.01	34.01	34.01	35.31	35.31	34.01	23.95	21.96
SPP South - Energy Price - 1H2023	899	6/17/2025	6/17/2025	21.24	7.2	7.99	3.52	6.63	21.24	30.28	30.28	30.28	30.28	34.01	34.99	34.01	34.01	34.69	34.69	34.99	34.99	34.69	34.69	34.69	34.69	23.77	23.77
SPP South - Energy Price - 1H2023	900	6/18/2025	6/18/2025	23.72	23.72	23.72	23.72	23.72	23.72	33.36	33.28	34.64	34.94	34.64	34.64	34.94	40.43	35.87	35.7	34.94	35.53	38.36	42.28	40.69	37.28	29.52	23.73
SPP South - Energy Price - 1H2023	901	6/19/2025	6/19/2025	24.31	24.31	22.21	21.72	23.68	23.68	31.44	32.39	34.09	35.34	35.34	35.34	35.34	35.66	35.66	36.08	36.85	36.63	39.24	36.85	41.04	39.05	28.43	24.31
SPP South - Energy Price - 1H2023	902	6/20/2025	6/20/2025	24.4	24.4	23.76	24.76	24.4	24.4	34.01	35.44	35.76	37.18	37.85	38.07	39.37	39.45	45.93	46.01	45.93	36.01	39.37	39.45	40.43	39.05	28.82	25.53
SPP South - Energy Price - 1H2023	903	6/21/2025	6/21/2025	26.7	24.4	24.41	24.4	24.4	24.98	28.61	28.62	30.96	33.35	34.62	36.96	39.5	40.49	34.62	33.81	33.35	33.35	33.81	33.81	28.62	28.49	24.4	23.76
SPP South - Energy Price - 1H2023	904	6/22/2025	6/22/2025	23.76	21.89	23.76	22.28	21.79	23.76	27.87	27.87	29.38	33.35	33.35	33.35	35.09	34.63	34.62	33.35	32.43	33.24	28.62	33.35	33.35	33.35	26.57	24.44
SPP South - Energy Price - 1H2023	905	6/23/2025	6/23/2025	25.14	24.48	24.48	24.48	24.48	25.04	34.58	35.31	36.32	34.58	35.31	36.32	36.32	36.32	36.32	35.31	33.41	34.01	34.58	34.45	36.66	36.32	25.14	24.48
SPP South - Energy Price - 1H2023	906	6/24/2025	6/24/2025	24.76	24.76	23.47	23.3	24.76	24.76	35.11	36.32	37.03	37.03	35.31	36.67	38.39	38.8	40.8	37.03	36.67	36.67	36.06	36.06	36.67	36.67	24.76	24.76
SPP South - Energy Price - 1H2023	907	6/25/2025	6/25/2025	25.24	26	25.79	25.79	25.93	25.78	35.31	36.63	37.26	35.67	37.63	35.43	37.26	37.26	37.63	36.64	37.26	36.64	34.12	35.48	37.25	37.25	25.93	25.41
SPP South - Energy Price - 1H2023	908	6/26/2025	6/26/2025	25.51	24.83	25.51	25.51	25.51	25.51	34.01	36.16	36.33	37.59	37.59	37.59	37.59	37.59	37.98	37.59	37.98	37.98	37.98	37.59	37.98	37.59	27.05	26.21
SPP South - Energy Price - 1H2023	909	6/27/2025	6/27/2025	25.21	25.21	25.21	24.55	25.21	25.21	36.39	36.4	36.41	36.76	37.29	38.08	38.28	40.57	43.34	47.31	36.76	37.29	36.41	36.76	36.89	36.76	27.41	25.53
SPP South - Energy Price - 1H2023	910	6/28/2025	6/28/2025	25.53	25.21	25.21	25.21	25.21	25.21	29.57	29.83	31.6	32.75	33.35	33.35	34.62	34.97	42.29	36.09	33.35	33.35	33.35	31.75	34.51	29.57	24.55	24.55
SPP South - Energy Price - 1H2023	911	6/29/2025	6/29/2025	24.55	24.55	24.55	24.55	24.55	24.55	29.57	29.57	30.08	29.37	29.57	32.25	33.35	33.35	33.35	34.62	33.35	34.62	33.35	30.68	33.35	29.57	25.21	24.55
SPP South - Energy Price - 1H2023	912	6/30/2025	6/30/2025	23.3	23.3	23.3	23.3	23.3	24.62	34.88	35.59	36.23	37.67	39.4	43.78	40.53	45.12	40.75	37.22	37.18	35.18	35.18	35.18	34.88	34.87	23.3	23.3

SPP South - Energy Price - 1H2023	913	7/1/2025	7/1/2025	23.87	23.87	24.5	23.87	23.87	24.5	37.39	37.72	39.66	42.29	42.69	48.39	48.4	48.4	49.08	48.64	48.97	41.54	41.77	48.4	48.4	48.4	28.99	28.99
SPP South - Energy Price - 1H2023	914	7/2/2025	7/2/2025	29.17	28.99	27.27	28.46	29.17	29.17	40.26	37.97	39.58	41.97	42.94	50.02	51.04	50.98	48.74	41.77	46.63	41.79	42.09	42.57	42.66	39.79	28.99	24.7
SPP South - Energy Price - 1H2023	915	7/3/2025	7/3/2025	22.46	19.22	19.22	19.22	22.46	20.83	30.95	30.95	34.15	34.29	36.32	37.71	38.97	39.48	41.88	42.25	37.63	38.66	38.97	36.91	36.32	37.71	23.43	20.64
SPP South - Energy Price - 1H2023	916	7/4/2025	7/4/2025	22.46	23.86	23.77	23.5	23.83	24.92	36.32	36.86	38.18	38.97	38.97	38.98	45.23	45.94	46.85	46.85	44.12	46.3	45.28	40.97	39.42	37.64	28.99	28.99
SPP South - Energy Price - 1H2023	917	7/5/2025	7/5/2025	27.44	22.46	21.08	20.04	23.95	23.25	36.87	43.71	49.58	46.79	48.82	49.39	51.76	51.76	52.2	52.4	50.3	52.74	49.58	41.75	40.93	41.04	25.23	24.56
SPP South - Energy Price - 1H2023	918	7/6/2025	7/6/2025	23.23	23.47	21.46	21.21	20.92	21.38	31.35	33.94	35.25	39.41	37.54	44.3	41.47	48.45	47.75	45.01	41.47	32.13	32.13	36.82	36.82	37.08	21.8	18.75
SPP South - Energy Price - 1H2023	919	7/7/2025	7/7/2025	25.27	25.27	25.95	25.95	25.95	25.95	39.19	38	37.71	39.19	39.19	42.58	43.72	43.72	41.03	39.91	39.19	39.14	39.19	36.32	38.96	38.96	25.27	25.27
SPP South - Energy Price - 1H2023	920	7/8/2025	7/8/2025	25.63	25.63	23.48	23.48	25.64	25.64	39.16	39.66	39.66	42.94	44.31	48.43	45.47	46	46.23	46.79	46.6	44.56	44.37	40.06	44.31	41.57	28.99	28.99
SPP South - Energy Price - 1H2023	921	7/9/2025	7/9/2025	28.99	26.19	26.19	26.19	26.19	27.61	39.51	39.49	41.64	39.89	45.64	44.45	45.33	44.83	39.95	39.89	39.49	43.36	41.38	44.1	39.89	41.38	28.18	26.19
SPP South - Energy Price - 1H2023	922	7/10/2025	7/10/2025	25.34	24.78	24.78	24.78	25.44	25.44	38.56	38.94	39.78	40.7	42.05	40.84	43.87	42.93	44.62	43.73	47.89	44.56	44.8	44.03	38.93	44.73	30.09	28.54
SPP South - Energy Price - 1H2023	923	7/11/2025	7/11/2025	27.8	25.62	25.16	24.9	24.99	25.6	38.21	38.56	38.56	42.83	44.45	42.68	44.34	48.15	47.91	48.91	49.57	47.91	43.07	43.39	43.52	42.49	29.81	29.38
SPP South - Energy Price - 1H2023	924	7/12/2025	7/12/2025	28.35	27.96	26.09	26.09	26.58	26.09	43	43.49	43.51	45.75	46.03	48.45	46.46	45.34	52.45	53.02	50.09	51.43	50.3	51.29	48.95	48.45	27.79	26.2
SPP South - Energy Price - 1H2023	925	7/13/2025	7/13/2025	26.14	25.16	24.71	25.16	25.16	25.16	42.06	42.07	46.35	42.64	48.45	48.45	48.45	52.59	63.23	53.02	63.23	55.29	54.33	63.23	55.11	50.3	28.99	28.06
SPP South - Energy Price - 1H2023	926	7/14/2025	7/14/2025	27.08	26.06	26.06	25.67	26.06	27.27	39.71	39.71	44.49	47.54	50.77	51.17	51.18	44.69	45.19	44.91	43.42	44.45	44.67	45	45.08	43.49	28.81	26.06
SPP South - Energy Price - 1H2023	927	7/15/2025	7/15/2025	26.48	26.47	26.48	26.26	26.35	28.99	41	44.53	45.15	48.1	51.78	52.41	54.31	54.7	55.53	58.6	55.45	55.17	51.91	51.91	51.92	44.66	28.99	28.99
SPP South - Energy Price - 1H2023	928	7/16/2025	7/16/2025	28.99	28.4	27.61	28.04	28.96	28.96	40.36	41.98	40.36	41.92	40.36	47.04	52.07	52.07	51.23	54.22	52.08	52.07	52.08	52.07	40.88	39.95	26.56	28.46
SPP South - Energy Price - 1H2023	929	7/17/2025	7/17/2025	27.48	27.48	27.58	28.46	27.48	27.48	37.32	41.09	39.66	40.15	44.07	45.32	46.1	46.3	43.84	43.65	41.09	40.33	41.95	51.07	41.09	42.58	28.99	28.99
SPP South - Energy Price - 1H2023	930	7/18/2025	7/18/2025	28.1	26.63	26.23	25.93	26.63	26.63	39.43	40.45	40.45	42	44.78	44.78	41.68	44.78	44.78	44.78	42	44.78	43.17	44.84	44.78	45.02	29.45	29.34
SPP South - Energy Price - 1H2023	931	7/19/2025	7/19/2025	28.23	28.99	28.99	27.64	26.63	26.63	46.13	47.18	48.45	48.45	48.45	48.45	48.45	52.73	52.73	52.73	57.24	48.45	53.12	48.45	44.52	44.58	28.02	26.63
SPP South - Energy Price - 1H2023	932	7/20/2025	7/20/2025	26.63	23.74	23.75	23.74	26.96	26.63	41.01	44.52	44.61	44.52	44.52	47.21	47.34	46.83	44.52	48.45	48.39	44.52	44.52	47.23	50.96	50.3	28.99	26.63
SPP South - Energy Price - 1H2023	933	7/21/2025	7/21/2025	28.23	25.56	25.56	26.98	27.01	27.68	38.7	38.7	39.08	40.47	47.2	48.45	50.28	50.28	51.92	52.41	52.49	51.7	49.49	48.81	48.83	46.05	31.06	30.78
SPP South - Energy Price - 1H2023	934	7/22/2025	7/22/2025	28.64	28.99	27.05	27.12	28.64	28.14	39.35	41.73	43.25	44.49	39.8	50.65	50.66	50.67	50.66	50.66	52.35	43.44	50.66	43.44	43.44	45.41	30.49	27.26
SPP South - Energy Price - 1H2023	935	7/23/2025	7/23/2025	26.9	25.39	25.39	25.39	26.47	25.39	37.71	37.02	38.85	38.49	38.86	47.41	46.31	38.86	42.84	42.84	49.98	39.82	47.05	47.25	38.86	39.38	26.82	26.04
SPP South - Energy Price - 1H2023	936	7/24/2025	7/24/2025	25.04	25.51	26.06	26.01	26.04	27.3	38.3	38.3	41.9	45.31	48.55	49.22	49.21	51.42	52.61	51.86	49.37	49.2	49.2	49.2	49.2	49.2	30.09	28.99
SPP South - Energy Price - 1H2023	937	7/25/2025	7/25/2025	27.02	27.12	27.01	26.96	27.86	27.84	37.84	41.17	41.74	48.55	48.56	48.59	50.84	49.66	52.14	52.66	51.94	51.83	50.8	49.28	49.02	48.56	30.09	30.09
SPP South - Energy Price - 1H2023	938	7/26/2025	7/26/2025	29.99	29.71	28.99	28.99	29.05	28.99	48.45	48.55	48.92	50.3	51.44	61.93	61.93	60.5	64.04	61.93	61.93	56.09	56.39	56.48	54.61	50.3	28.99	27.71
SPP South - Energy Price - 1H2023	939	7/27/2025	7/27/2025	27.43	24.6	24.6	24.6	26.86	24.6	41.12	43.35	41.12	44.72	44.94	50.13	50.3	53.4	61.3	61.93	61.39	57.44	55.06	50.3	48.55	50.69	29.05	27.24
SPP South - Energy Price - 1H2023	940	7/28/2025	7/28/2025	26.89	24.36	24.36	26.72	26.89	27.39	38.74	37.35	37.49	38.74	39.75	48.01	49.92	48.14	48.14	48.14	50.57	49.71	48.85	48.57	46.34	41.24	30.09	28.35
SPP South - Energy Price - 1H2023	941	7/29/2025	7/29/2025	24.97	27.43	25.03	27.27	25.01	24.86	37.83	38.26	38.17	48.72	48.4	46.28	49.13	50.05	50.31	50.74	49.32	49.19	49.6	48.86	47.8	46.19	28.99	29.36
SPP South - Energy Price - 1H2023	942	7/30/2025	7/30/2025	28.99	25.43	25	24.34	25	27.93	38.24	38.35	40.05	45.24	46.4	49.27	49.27	49.28	49.32	50.07	49.33	49.26	48.86	43.48	42.75	38.35	28.99	29.54
SPP South - Energy Price - 1H2023	943	7/31/2025	7/31/2025	25.22	25.22	28.12	27.65	28.12	28.99	41.84	40.4	38.92	42.59	44.43	49.67	49.68	49.68	49.5	49.68	49.68	49.52	49.68	49.67	47.61	42.95	29.57	28.99
SPP South - Energy Price - 1H2023	944	8/1/2025	8/1/2025	26.13	29.97	28.74	29.95	29.97	30.89	39.56	38.94	41.34	43.02	41.05	40.47	42.92	49.71	50.01	50.07	49	42.92	42.92	41.8	39.79	38.94	27.68	25.61
SPP South - Energy Price - 1H2023	945	8/2/2025	8/2/2025	25.61	25.45	25.45	25.45	26.13	25.45	31.99	33.88	35.16	37.42	38.09	40.95	44.24	46.89	46.94	48.07	47.77	38.6	41.96	36.69	35.15	35.34	26.13	26.13
SPP South - Energy Price - 1H2023	946	8/3/2025	8/3/2025	25.45	26.13	25.47	25.45	26.13	26.13	31.15	31.15	31.15	31.15	33.52	38.09	38.09	41.41	47.95	42.21	44.85	39.88	38.09	42.68	38.09	37.82	29.97	28.87
SPP South - Energy Price - 1H2023	947	8/4/2025	8/4/2025	25.07	22.77	25.03	22.77	22.77	26.77	36.54	36.54	36.54	37.82	39.87	43.8	43.65	44.23	44.23	44.23	46.21	44.23	43.81	44.23	44.02	43.91	29.97	29.97
SPP South - Energy Price - 1H2023	948	8/5/2025	8/5/2025	29.97	29.97	29.28	28.69	29.59	30.16	39.76	39.79	39.76	42.98	47.14	49.21	50.13	50.14	50.14	50.69	50.63	50.14	50.14	49.67	48.62	42.82	29.97	30.77
SPP South - Energy Price - 1H2023	949	8/6/2025	8/6/2025	29.43	25.96	25.96	26.66	28.12	29.43	39.59	39.59	39.21	41.03	43.72	43.72	48.25	49.73	44.61	43.72	44.61	48.58	41.03	43.72	40.05	39.6	29.46	29.66
SPP South - Energy Price - 1H2023	950	8/7/2025	8/7/2025	26.98	26.98	26.27	26.27	26.98	26.98	39.61	39.61	40	40	41.48	44.21	48.39	50.38	40.04	51.55	51.55	49.11	48.4	43.67	40	40	27.38	26.98
SPP South - Energy Price - 1H2023	951	8/8/2025	8/8/2025	26.82	27.38	27.31	27.21	27.84	29.64	39.8	39.71	39.47	39.8	40.39	43.34	45.67	48.82	48.72	50.85	45.97	47.84	45.97	45.64	41.22	40.53	29.78	28.4
SPP South - Energy Price - 1H2023	952	8/9/2025	8/9/2025	27.44	28.09	28.02	27.44	27.44	26.82	33.2	32.83	33.79	33.73	35.73	36.69	39.12	39.57	39.9	38.85	38.85	39.53	36.69	38	38.85	37.58	29.97	27.68
SPP South - Energy Price - 1H2023	953	8/10/2025	8/10/2025	28.17	28.09	28.02	27.93	27.84	27.76	34.07	33.87	33.79	35.48	37.16	38.85	38.85	41.66	42.36	44.76	44.83	42.63	39.31	38.85	38.85	38.09	29.65	29.65
SPP South - Energy Price - 1H2023	954	8/11/2025	8/11/2025	27.08	27.08	26.37	28.24	29.27	29.97	40.12	40.13	40.47	44.89	48.2	51.25	51.72	51.72	51.83	53.13	52.31	51.66	49.97	49.9	47.82	40.13	29.97	27.94
SPP South - Energy Price - 1H2023	955	8/12/2025	8/12/2025	29.21	29.13	28.03	28.63	29.86	29.47	39.7	39.8	40.73	43.39	49.99	50.27	50.61	50.93	52.4	53.08	50.61	48.75	48.92	49.17	49.44	43.39	29.97	29.97
SPP South - Energy Price - 1H2023	956	8/13/2025	8/13/2025	25.85	25.77	26.23	25.35	24.63	25.85	34.2	36.54	34.99	34.99	38.17	39.83	42.03	39.84	46.61	43.47	44.01	43.46	43.47	43.47	39.96	37.16	25.93	24.58
SPP South - Energy Price - 1H2023	957	8/14/2025	8/14/2025	23.59	22.5	21.52	21.4	23.59	25.09	33.78	33.78	33.78	37.27	36.54	37.94	39.59	39.6	42.2	42.32	39.6	40.18	39.6	39.6	39.41	36.54	29.17	28.74
SPP South - Energy Price - 1H2023	958	8/15/2025	8/15/2025	24.25	21.06	21.68	22.08	21.24	24.25	33.47	37.3	36.54	38.2	37.94	38.27	39.33	39.8	39.18	41.61	39.84	40.9	39.8	39.03	36.54	34.99	25.41	26.07
SPP South - Energy Price - 1H2023	959	8/16/2025	8/16/2025	24.71	24.22	23.03	24.28	24.82	24.82	31.09	33.34	36.55	36.49	36.74	38.09	38.09	39.75	39.75	39.75	38.09	38.09	37.37	37.07	36.69	36.69	26.9	26.03
SPP South - Energy Price - 1H2023	960	8/17/2025	8/17/2025	25.25	24.96	23.09	23.09	23.09	23.09	30.61	32.28	33.2	36.49	36.69	37.37	36.69	38.09	37.37	37.37	36.69	36.69	37.37	38	37.03	36.69	29.36	28.33
SPP South - Energy Price - 1H2023	961	8/18/2025	8/18/2025	29.97	29.94	28.7	28.22	27.81	29.87	38.23	38.63	37.8	40.3	41.59	47.01	47.07	43.72	46.75	47.06	42.25	39.96	46.61	45.92	45.92	40.3	28.77	26.91
SPP South - Energy Price - 1H2023	962	8/19/2025	8/19/2025	29.97	28.1	29.37	29.27	26.74	29.97	39.7	39.35	39.82	43.84	44.37	44.1	47.65	49.54	50.84	51.63	43.84	43.92	49.67	47.65	43.84	42.88	29.5	28.12
SPP South - Energy Price - 1H2023	963	8/20/2025	8/20/2025	29.97	29.97	29.97	27.48	28.07	29.97	40.63	40.62	40.21	43.52	46.26	45.4	45.35	47.11	52.41	52.83	46.41	46.36	52.67	52.42	46.02	43.24	30.31	29.56
SPP South - Energy Price - 1H2023	964	8/21/2025	8/21/2025	29.97	29.97	29.97	29.97	30.11	31.04	41.28	41.01	40.76	51.13	51.53	51.99	51.99	52.56	52.46	52.57	55.55	52.56	55.74	55.43	52.17	51.99	37.69	34.4
SPP South - Energy Price - 1H2023	965	8/22/2025	8/22/2025	31.12	31.1	32.11	31.12	31.12	31.47	45.19	43.18	43.18	44.47	50.37	50.38	53.19	53.82	58.22	58.22	54.74	53.92	53.83	52.72	50.37	46.21	34.19	31.1
SPP South - Energy Price - 1H2023	966	8/23/2025	8/23/2025	29.97	29.97	29.97	29.97	29.97	29.97	37.94	36.69	36.69	38.09	47.73	47.89	48.36	51.18	51.18	51.18	55.31	55.48	53.39	48.36	48.02	48.23	31.49	31.12
SPP South - Energy Price - 1H2023	967	8/24/2025	8/24/2025	31.12	31.1	29.97	29.97	29.73	29.33	36.69	36.66	38.07	40.18	46.55	47.89	47.36	47.97	48.24	48.36	48.36	48.18	47.77	45.36	43.14	38.09	31.1	31.12
SPP South - Energy Price - 1H2023	968	8/25/2025	8/25/2025	30.29	29.97	29.31	29.97	28.96	29.23	39.43	40.72	40.99	42.82	46.77	48.42	50.45	50.43	50.76	51.41	51.4	50.75	50.21	50.45	46.98	43.51	31.37	29.97
SPP South - Energy Price - 1H2023	969	8/26/2025	8/26/2025	29.97	27.61	27.61	26.88	26.88	29.04	40.79	40.79	40.37	44.03	48.26	46.32	49.83	52.29	53.83	52.64	45.16	45.4	52.23	52.48	43.54	41.43	29.19	29.23
SPP South - Energy Price - 1H2023	970	8/27/2025	8/27/2025	29.97	27.71	27.71	27.71	26.99	28.61	40.48	40.48	40.9	45.31	52.17	52.51	53.46	55.65	58.98	59.65	60.59	55.13	53.6	53.83	52.8	52.66	35.15	32.99
SPP South - Energy Price - 1H2023	971	8/28/2025	8/28/2025	31.12	29.97	29.97	29.97	29.97	29.97	41.85	41.96	45.31	48.42	49.05	53.42	53.43	53.83	55.75	55.88	53.95	53.84	53.43	53.43	48.46	44.69	31.12	31.05
SPP South - Energy Price - 1H2023	972	8/29/2025	8/29/2025	29.97	29.97	29.97	30.78	31.12	31.12	41.91	45.54	47.13	52.56	53.08	53.33	53.57	53.57	55.45	56.59	56.29	54.34	53.08	45.54	45.51	42.34	29.97	29.97
SPP South - Energy Price - 1H2023	973	8/30/2025	8/30/2025	29.97	29.97	29.97	29.97	29.97	29.97	36.69	36.69	37.73	40.41	44.34	50.5	50.98	50.98	50.98	53.9	53.9	50.41	50.98	50.2	43.44	36.69	27.94	28.41
SPP South - Energy Price - 1H2023	974	8/31/2025	8/31/2025	29.97	28.95	27.86	27.86	27.86	29.97	36.69	36.69	36.69	38.09	37.69	50.5	50.98	50.98	50.98	50.98	41.22	40.8	42.06	42.69	43.44	40.29	29.97	28.41
SPP South - Energy Price - 1H2023	975	9/1/2025	9/1/2025	30.37	30.69	29.97	29.9	32.01	32.01	39.38	39.1	39.34	43.18	46.02	43.87	43.3	50.47	50.47	50.47	50.48	50.48	50.46	50.47	50.46	50.46	33.24	33.24
SPP South - Energy Price - 1H2023	976	9/2/2025	9/2/2025	32.01	32.01	32.01	32.01	32.79	34.52	43.14	42.09	41.73	46.19	48.66	48.6	48.66	48.66	48.67	48.67	48.66	48.51	45.42	41.03	41.7	38.4	32.01	32.01
SPP South - Energy Price - 1H2023	977	9/3/2025	9/3/2025	32.01	31.64	28.62	28.47	31.14	28.62	37.37	37.24	37.24	37.24	35.29	36.34	37.24	35.65	37.24	36.34	37.24	39.11	37.6	38.41	38.39	36.68	28.76	28.18
SPP South - Energy Price - 1H2023	978	9/4/2025	9/4/2025	27.32	27.36	28.06	27.32	28.06	29.88	37.46	36.31	37.05	37.11	37.02	35	35	37.11	37.11	37.11	38.77	38.86	41.31	38.38	37.46	37.46	32.18	32.01
SPP South - Energy Price - 1H2023	979	9/5/2025	9/5/2025	32.01	32.9	27.84	30.79	32.01	33.24	41.01	38.5	38.17	41.01	41.01	44.62	41.01	47.68	47.72	47.84	47.84	47.53	41.01	38.11	37.21	37.21	27.11	27.84
SPP South - Energy Price - 1H2023	980	9/6/2025	9/6/2025	27.84	30.26	27.84	27.84	27.11	27.84	52.68	52.68	52.68	57.78	62.18	62.9	62.9	67.89	70.76	62.9	71.02	62.27	62.9	67.86	62.9	62.9	27.84	27.11
SPP South - Energy Price - 1H2023	981	9/7/2025	9/7/2025	27.11	27.11	27.11	27.11	27.11	27.11	51.31	51.31	51.31	51.31	60.59	60.59	60.59	62.9	62.9	74.7	60.59	62.9	60.59	68.62	62.27	60.59	27.84	27.11
SPP South - Energy Price - 1H2023	982	9/8/2025	9/8/2025	27.17	27.9	27.9	27.17	27.9	30.82	37.28	37.28	36.93	37.28	36.94	38.58	37.28	36.94	37.28	36.94	36.94	36.94	37.28	36.94	36.34	35	27.9	27.17
SPP South - Energy Price - 1H2023	983	9/9/2025	9/9/2025	27.92	25.58	27.92	27.92	25.58	27.92	36.34	36.34	35	36.34	36.34	36.34	38.15	38.15	37.77	37.77	39.73	36.34	38.15	37.77	37.77	35	27.92	25.58
SPP South - Energy Price - 1H2023	984	9/10/2025	9/10/2025	25.91	25.91	26.26	25.91	26.09	28.28	38.18	38.18	38.56	38.56	41.37	48.98	48.98	49.72	49.6	45.06	49.72	45.06	45.06	49.27	42.65	38.56	32.01	32.01
SPP South - Energy Price - 1H2023	985	9/11/2025	9/11/2025	30.37	28.53	28.53	28.53	29.24	31.53	37.99	38.11	37.99	37.62	39.29	38.79	37.62	37.99	37.62	37.02	36.34	37.97	37.62	37.46	36.62	35	27.78	27.78
SPP South - Energy Price - 1H2023	986	9/12/2025	9/12/2025	26.92	24.69	24.69	26.92	26.92	26.93	35	34.65	33.36	33.87	32.28	32.02	28.93	31.16	32.02	32.02	32.02	32.02	35	36.34	35	32.02	24.69	21.44
SPP South - Energy Price - 1H2023	987	9/13/2025	9/13/2025	17.49	24.69	24.69	24.69	24.69	24.69	50.79	48.02	46.73	50.96	50.96	46.88	50.96	50.96	50.96	50.96	52.32	52.32	60.59	52.33	52.33	52.32	24.69	24.69
SPP South - Energy Price - 1H2023	988	9/14/2025	9/14/2025	24.69	13.84	10.92	24.69	24.69	24.69	46.72	46.73	46.73	46.73	50.96	52.33	52.33	52.33	54.87	60.59	55.1	55.99	56.09	56.4	52.33	50.96	27.65	26.93
SPP South - Energy Price - 1H2023	989	9/15/2025	9/15/2025	26.4	26.4	26.4	26.4	26.4	27.1	36.34	36.34	36.34	36.07	36.07	36.34	36.39	38.27	40.01	46.08	40.01	43	43.44	40.01	36.39	36.39	27.1	26.4
SPP South - Energy Price - 1H2023	990	9/16/2025	9/16/2025	26.29	26.29	26.29	26.99	26.29	26.99	36.27	36.26	35.95	34.1	35	35	35	35.95	36.34	35.95	36.26	36.34	36.27	35.95	35	31.39	24.12	24.12
SPP South - Energy Price - 1H2023	991	9/17/2025	9/17/2025	24.18	24.18	24.18	24.18	24.18	24.18	33.44	33.62	31.46	31.46	31.46	31.46	31.46	35	35	35	35	36.03	36.34	36.03	35	35	26.36	24.18
SPP South - Energy Price - 1H2023	992	9/18/2025	9/18/2025	24.7	24.58	24.7	24.58	24.84	24.7	35	32.89	31.9	35	35	35	36.34	36.53	36.53	36.53	36.86	47.07	46.82	46.87	39.54	37.8	32.01	30.54
SPP South - Energy Price - 1H2023	993	9/19/2025	9/19/2025	28.57	28.57	27.05	27.05	27.59	29.95	36.33	36.33	36.33	36.4	36.4	36.33	36.4	37.49	36.4	36.33	36.33	37.51	36.33	36.01	36.01	36.01	26.35	26.34
SPP South - Energy Price - 1H2023	994	9/20/2025	9/20/2025	24.17	24.17	24.17	24.17	24.17	24.17	46.49	16.05	3.53	45.74	9.13	0	13.48	13.32	14.28	4.31	8.01	45.74	49.86	49.86	49.86	49.86	24.17	24.17
SPP South - Energy Price - 1H2023	995	9/21/2025	9/21/2025	6.4	6.3	6.19	1.76	1.72	1.74	7.78	0	0	0	3.39	3.01	3.75	3.11	3.09	35.92	45.74	45.74	49.86	45.74	45.74	45.74	4.64	3.62

SPP South - Energy Price - 1H2023	996	9/22/2025	9/22/2025	1.82	1.82	1.86	1.76	1.72	20.61	9.55	29.34	29.35	31.57	31.57	31.57	31.57	31.75	34.27	35	35	36.34	39.59	35.57	32.39	31.75	25.24	22.95
SPP South - Energy Price - 1H2023	997	9/23/2025	9/23/2025	24.7	24.7	24.7	25.34	25.34	28.59	35	35	35.28	35	35	37.62	37.62	43.8	43.93	43.96	43.96	43.8	43.42	43.48	37.62	35	26.78	25.34
SPP South - Energy Price - 1H2023	998	9/24/2025	9/24/2025	24.64	24.64	24.64	24.64	25.29	25.29	35	35	34.36	34.37	35	35	35.22	36.34	36.34	35.31	35	43.62	43.25	43.39	35	34.36	25.29	25.11
SPP South - Energy Price - 1H2023	999	9/25/2025	9/25/2025	26.18	26.18	26.18	26.18	26.18	26.88	36.14	35.03	35.83	35.83	36.14	36.14	36.14	36.7	36.14	36.48	36.14	46.07	45.75	38.68	36.7	35.83	26.88	26.88
SPP South - Energy Price - 1H2023	1000	9/26/2025	9/26/2025	24.53	24.53	24.53	24.67	25.17	25.17	34.23	34.23	34.23	33.98	33.98	33.98	33.98	33.98	33.98	33.98	33.98	34.23	34.23	33.98	30.99	30.48	22.54	22.54
SPP South - Energy Price - 1H2023	1001	9/27/2025	9/27/2025	22.54	22.54	10.72	5.54	5.01	4.55	8.59	7.56	14.03	2.84	3.39	3.01	0	9.33	3.09	15.32	8.01	42.66	42.66	42.66	39.56	26.64	2.31	1.83
SPP South - Energy Price - 1H2023	1002	9/28/2025	9/28/2025	2.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.98	0	42.66	42.66	22.06	4.17	33.81	0	0
SPP South - Energy Price - 1H2023	1003	9/29/2025	9/29/2025	0	0	0	1.55	1.43	5.09	7.56	6.96	9.35	9.5	10.33	11.5	27.94	27.94	27.94	27.94	32.09	32.09	32.98	32.29	32.29	32.09	22.85	21.03
SPP South - Energy Price - 1H2023	1004	9/30/2025	9/30/2025	24.06	24.05	24.05	24.05	24.05	24.06	31.32	31.32	29.66	30.42	31.32	34.04	31.32	31.32	33.45	31.32	35	35.87	36.18	36.04	35.87	35.87	26.22	26.22
SPP South - Energy Price - 1H2023	1005	10/1/2025	10/1/2025	24.83	25.02	22.56	25.02	25.02	25.02	33.1	33.1	34.22	34.22	34.22	34.22	33.1	34.22	34.22	34.25	34.55	34.22	34.22	34.22	31.88	31.88	22.56	22.56
SPP South - Energy Price - 1H2023	1006	10/2/2025	10/2/2025	22.89	22.89	22.89	25.39	25.39	26.08	33.1	33.1	29.49	29.49	29.49	29.49	29.49	29.49	29.49	30.6	31.19	31.88	31.88	29.49	29.49	29.49	22.88	22.88
SPP South - Energy Price - 1H2023	1007	10/3/2025	10/3/2025	23.18	23.18	23.18	23.18	18.35	23.18	29.82	29.82	29.82	29.82	28.76	27.87	28.46	29.82	29.82	29.82	29.82	29.82	29.82	29.82	29.82	29.82	23.18	23.18
SPP South - Energy Price - 1H2023	1008	10/4/2025	10/4/2025	23.18	23.18	23.18	23.18	23.18	23.18	29.73	29.73	27.02	24.15	0.83	5.35	5.82	2.68	3.48	2.12	14.98	15.68	23.24	13.49	1.99	3.2	0	0
SPP South - Energy Price - 1H2023	1009	10/5/2025	10/5/2025	2.45	2.39	1.96	10.27	9.94	23.18	29.73	9.41	2.63	0	2.32	2.79	3.55	0	14.52	15.72	29.73	33	33	33	33	29.73	23.18	23.66
SPP South - Energy Price - 1H2023	1010	10/6/2025	10/6/2025	24.94	21.92	23.98	24.58	21.92	24.94	33.1	31.88	30.38	30.38	30.38	31.88	31.88	33.7	33.7	33.1	33.7	36.01	39.85	34.85	33.7	33.27	26.61	24.94
SPP South - Energy Price - 1H2023	1011	10/7/2025	10/7/2025	24.93	23.83	24.85	25.32	25.55	23.57	32.16	32.16	31.88	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	25.7	16.33	13.36
SPP South - Energy Price - 1H2023	1012	10/8/2025	10/8/2025	13.09	13.86	12.4	20.7	20.7	20.7	29	29	29	7.42	29	13.78	29	13.83	26.68	29	29	29	29	29	29	32.09	25.27	20.7
SPP South - Energy Price - 1H2023	1013	10/9/2025	10/9/2025	21.31	21.31	5.63	11.84	2.45	7.52	9.99	9.02	0	3.36	0	12.32	6.9	4.06	3.19	15.88	29.55	29.69	31.88	29.69	29.69	32.89	23.86	21.31
SPP South - Energy Price - 1H2023	1014	10/10/2025	10/10/2025	15.09	23.02	24.32	23.91	24.32	25.73	33	33	33	33	33	33	33	33	33	31.88	33	33	33	33	33	33	28.71	28.71
SPP South - Energy Price - 1H2023	1015	10/11/2025	10/11/2025	28.71	28.71	27.45	26.84	28.2	29.98	38.47	38.47	38.47	38.47	38.47	38.23	38.47	37.05	35.39	31.2	37.05	38.47	38.47	37.05	31.2	27.44	21.39	21.39
SPP South - Energy Price - 1H2023	1016	10/12/2025	10/12/2025	21.39	21.39	24.32	25.7	26.27	24.32	31.2	31.2	33.18	31.2	31.2	34.97	31.2	23.38	17.79	34.01	27.44	32.47	31.2	30.96	29.53	31.2	24.32	24.32
SPP South - Energy Price - 1H2023	1017	10/13/2025	10/13/2025	23.64	23.64	23.64	23.64	23.64	23.64	32.24	32.24	32.24	33.1	32.24	31.88	32.24	31.88	31.88	32.24	36.93	36.93	38.44	32.24	32.24	31.88	26.08	26.8
SPP South - Energy Price - 1H2023	1018	10/14/2025	10/14/2025	26.28	24.34	26.2	26.86	27.89	28.88	39.09	37.2	36.62	33.1	33.1	33.02	31.88	29.8	31.88	29.8	31.88	33.02	33.02	33.02	33.02	33.02	21.41	21.4
SPP South - Energy Price - 1H2023	1019	10/15/2025	10/15/2025	15.99	21.02	21.02	21.02	21.02	23.89	30.86	31.88	31.88	33.46	32.51	33.1	32.51	32.51	32.51	32.51	32.51	32.69	33.54	33.52	33.52	33.1	28.18	27.97
SPP South - Energy Price - 1H2023	1020	10/16/2025	10/16/2025	27.88	28.88	27.94	27.94	28.88	28.88	36.43	36.13	32.71	31.88	31.88	31.88	32.71	31.88	31.88	31.88	31.88	40.28	41.91	41.92	41.91	33.1	24.34	24.06
SPP South - Energy Price - 1H2023	1021	10/17/2025	10/17/2025	22.27	26.07	24.53	22.27	24.53	26.55	34.49	33.22	31.88	31.88	31.88	31.88	30.69	30.69	31.88	31.47	33.1	36.01	38.01	36.23	33.28	30.69	25.82	22.27
SPP South - Energy Price - 1H2023	1022	10/18/2025	10/18/2025	19.64	22.27	19.64	22.27	22.27	23.82	31.22	28.57	25.2	28.57	30.33	30.8	31.56	32.73	33.61	32.28	31.87	38.47	36.54	34.06	32.17	32.67	22.27	22.88
SPP South - Energy Price - 1H2023	1023	10/19/2025	10/19/2025	24.28	22.27	24.19	22.43	22.27	24.39	34.87	32.34	25.2	28.57	25.2	28.57	25.2	25.2	25.2	28.57	25.2	30.54	31.99	31.47	28.57	28.57	22.27	24.25
SPP South - Energy Price - 1H2023	1024	10/20/2025	10/20/2025	26.24	26.05	24.75	25.88	28.01	27.47	37.27	35.43	33.1	33.85	36.5	38.49	33.1	32.81	33.86	32.81	33.1	42.07	42.07	36.3	35.98	35.8	26.66	26.37
SPP South - Energy Price - 1H2023	1025	10/21/2025	10/21/2025	26.4	26.34	26.31	26.18	26.41	27.78	33.16	33.16	33.16	33.16	33.16	33.1	31.88	31.88	31.39	31.88	33.1	33.16	34.38	33.16	33.1	31.88	24.46	24.46
SPP South - Energy Price - 1H2023	1026	10/22/2025	10/22/2025	21.82	21.82	21.82	21.82	18.35	21.82	31.88	31.25	31.25	31.25	31.25	31.25	31.88	31.25	31.88	31.88	31.25	31.88	31.25	31.88	31.25	19.34	4.81	6.75
SPP South - Energy Price - 1H2023	1027	10/23/2025	10/23/2025	2.45	2.39	12.4	22.17	22.17	24.58	31.88	33.1	29.65	29.65	29.65	29.65	31.29	29.65	31.88	31.88	33.1	33.1	31.88	31.88	29.65	29.65	22.17	13.75
SPP South - Energy Price - 1H2023	1028	10/24/2025	10/24/2025	6.42	12.79	14.15	11.84	21.98	19.06	29.44	29.44	31.88	29.44	29.44	31.88	29.74	33.1	31.88	29.44	29.44	29.44	29.44	29.44	29.44	29.44	24.36	22.32
SPP South - Energy Price - 1H2023	1029	10/25/2025	10/25/2025	24.36	24.36	22.79	24.36	21.98	24.36	28.2	32.09	28.2	10.06	28.2	28.2	19.65	16.07	17.79	18.45	31.26	37.05	32.1	32.1	32.09	32.09	24.36	21.98
SPP South - Energy Price - 1H2023	1030	10/26/2025	10/26/2025	21.98	24.36	24.36	24.36	24.36	24.36	31.26	31.26	28.2	28.2	2.14	0	0.78	0	0	4.27	28.2	32.1	34.11	32.1	32.09	32.1	24.36	24.36
SPP South - Energy Price - 1H2023	1031	10/27/2025	10/27/2025	24.48	24.19	24.16	22.11	24.48	24.51	31.88	33.1	29.58	29.58	31.88	33.1	31.88	33.64	33.64	33.64	33.95	33.95	34.87	33.95	33.64	33.64	24.51	22.11
SPP South - Energy Price - 1H2023	1032	10/28/2025	10/28/2025	22.44	22.44	20.95	22.44	19.97	22.44	23.68	29.95	7.24	2.06	1.99	2.4	3.06	0	3.41	6.15	21.92	10.56	10.53	11.61	10.53	3.21	2.84	2.41
SPP South - Energy Price - 1H2023	1033	10/29/2025	10/29/2025	1.78	0	0	1.74	2.46	11.1	29.75	29.75	29.75	29.75	31.88	33.83	33.83	33.1	33.83	31.88	31.88	33.1	32.06	31.88	31.88	29.75	22.26	22.26
SPP South - Energy Price - 1H2023	1034	10/30/2025	10/30/2025	21.64	21.64	9.57	6.27	21.64	21.64	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	31.88	31.88	25.9	29.06	29.06	15.88	8.25	1.93
SPP South - Energy Price - 1H2023	1035	10/31/2025	10/31/2025	1.78	2.03	2.32	1.74	2.46	3.14	26.91	30.6	30.6	31.62	30.82	31.88	31.62	31.88	31.88	31.88	31.88	31.88	31.88	31.88	30.82	30.6	22.39	22.39
SPP South - Energy Price - 1H2023	1036	11/1/2025	11/1/2025	23.49	23.24	22.57	23.24	23.24	23.24	42.91	42.91	44.05	42.91	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	43.75	42.91	23.24	20.99
SPP South - Energy Price - 1H2023	1037	11/2/2025	11/2/2025	20.99	20.99	20.99	13.65	14.49	15.04	27.28	27.43	0	0	0	0	0	0	0	0	0	11.13	14.12	7.34	12.82	6.53	3.2	8.69
SPP South - Energy Price - 1H2023	1038	11/3/2025	11/3/2025	8.5	9.37	9.37	1.72	11.03	22.66	31.91	31.91	31.89	31.91	33.11	33.13	33.11	33.13	33.13	33.13	33.13	36.4	37.75	33.13	31.91	31.91	25.32	25.26
SPP South - Energy Price - 1H2023	1039	11/4/2025	11/4/2025	24.58	24.83	24.34	25.76	25.26	28.54	32.13	32.13	32.13	33.13	33.13	33.13	33.13	35.48	33.13	32.13	36.01	37.4	40.47	33.13	38.1	38.91	31.65	29.63
SPP South - Energy Price - 1H2023	1040	11/5/2025	11/5/2025	28.54	28.54	26.88	28.54	26.88	28.54	37.87	35.36	38.29	38.92	37.36	35.36	31.91	31.91	31.4	30.29	30.29	30.29	30.29	28.88	27.86	30.29	9.29	9.9
SPP South - Energy Price - 1H2023	1041	11/6/2025	11/6/2025	1.76	0.42	0	0	2.44	2.46	30.57	30.57	30.57	31.71	30.57	30.57	31.24	31.72	31.71	31.72	31.91	32.91	33.13	40.47	33.13	36.07	28.72	29.39
SPP South - Energy Price - 1H2023	1042	11/7/2025	11/7/2025	29.63	29.63	23.75	28.54	23.75	28.54	33.14	33.14	31.91	31.84	31.84	31.84	31.84	31.84	28.56	15.89	31.91	33.13	33.13	31.91	31.91	10.97	9.29	0
SPP South - Energy Price - 1H2023	1043	11/8/2025	11/8/2025	0.99	2.46	2.67	0	0	6.29	19.3	28.44	16.31	0	7.06	3.04	11.61	2.95	4.56	12.36	44.42	46.79	45.6	52.69	39.59	39.59	19.72	8.69
SPP South - Energy Price - 1H2023	1044	11/9/2025	11/9/2025	21.07	21.41	21.25	12.45	21.44	21.44	39.59	43.86	39.59	15.13	24.55	12.76	12.76	12.76	0	0	29.62	34.46	14.12	12.67	3.61	3.93	1.52	0
SPP South - Energy Price - 1H2023	1045	11/10/2025	11/10/2025	0	0	0	0	0	0	2.43	2.3	0	0	0	0	0	0	0	0.47	3.42	25.07	8.55	4.44	1.57	2.38	1.52	0.64
SPP South - Energy Price - 1H2023	1046	11/11/2025	11/11/2025	0	0	0	1.72	2.44	2.46	35.46	36.11	33.13	33.29	33.29	31.91	33.29	14.76	31.91	33.29	33.29	33.29	33.29	36.11	33.13	33.13	23.72	1.7
SPP South - Energy Price - 1H2023	1047	11/12/2025	11/12/2025	25.71	27.2	27.2	27.2	27.2	27.2	37.09	39.12	39.12	37.09	41.42	38.59	37.09	37.09	37.09	37.68	40.18	40.93	41.94	41.64	37.09	39.12	27.93	28.11
SPP South - Energy Price - 1H2023	1048	11/13/2025	11/13/2025	27.14	26.25	25.18	26.93	24.23	26.93	33.01	33.01	31.91	31.91	4.27	7.29	2	1.78	2.76	1.75	9.79	31.91	31.91	31.91	31.91	31.91	24.23	21.24
SPP South - Energy Price - 1H2023	1049	11/14/2025	11/14/2025	21.24	22.33	19.09	19.08	22.33	22.33	30.83	30.83	30.83	13.54	8.09	7.86	13.24	12.12	30.83	31.91	34.3	34.3	34.3	31.91	33.13	31.91	24.77	24.77
SPP South - Energy Price - 1H2023	1050	11/15/2025	11/15/2025	24.77	23.28	22.33	22.33	23.45	24.77	48.44	41.24	41.24	41.24	41.24	41.24	11.08	12.04	4.56	9.12	9.12	11.13	9.42	9.92	5.17	3.93	0.18	0
SPP South - Energy Price - 1H2023	1051	11/16/2025	11/16/2025	0	0	0	0	0	2.1	4.02	3.8	16.31	41.24	21.08	12.98	12.04	12.94	4.56	35.87	43.3	43.83	41.24	41.24	41.24	41.24	22.33	23.45
SPP South - Energy Price - 1H2023	1052	11/17/2025	11/17/2025	8.5	9.37	9.45	9.52	20.3	20.2	31.53	28.39	28.39	28.39	28.39	31.53	28.39	28.39	29.61	28.39	28.39	31.91	31.53	31.53	28.39	28.39	20.2	20.2
SPP South - Energy Price - 1H2023	1053	11/18/2025	11/18/2025	22.37	24.81	24.81	24.81	27.57	28.54	34.35	34.35	34.35	33.13	34.35	34.35	34.35	34.35	34.35	34.35	34.35	35.95	34.35	34.35	34.35	33.13	24.81	24.81
SPP South - Energy Price - 1H2023	1054	11/19/2025	11/19/2025	26.05	26.05	26.05	26.05	26.05	26.05	35.77	42.35	40.86	42.2	40.37	37.59	37.59	39.53	35.77	37.59	40.8	42.84	43.85	42.01	41.99	42.18	32.49	28.54
SPP South - Energy Price - 1H2023	1055	11/20/2025	11/20/2025	25.62	25.62	23.08	23.08	23.08	23.08	30.55	30.55	30.55	30.55	4.27	1.84	0	-1.28	0	0	6.06	6.74	30.55	30.55	30.55	30.55	23.08	23.72
SPP South - Energy Price - 1H2023	1056	11/21/2025	11/21/2025	23.72	22.43	22.43	24.53	24.88	24.88	33.13	34.43	33.13	31.91	31.91	31.91	31.91	31.91	29.8	29.8	29.8	33.13	31.91	29.8	29.8	29.8	22.43	22.43
SPP South - Energy Price - 1H2023	1057	11/22/2025	11/22/2025	22.43	22.43	22.43	22.43	24.88	24.88	47.18	47.18	47.18	47.18	45.94	45.93	45.93	45.93	45.93	43.4	45.93	46.37	45.94	45.94	45.94	45.94	25.55	25.55
SPP South - Energy Price - 1H2023	1058	11/23/2025	11/23/2025	24.88	24.88	24.88	24.88	22.43	22.43	41.41	45.93	45.93	45.93	45.93	41.41	12.04	2.95	0	2.89	41.41	45.93	41.41	31.71	12.82	14.86	9.29	9.9
SPP South - Energy Price - 1H2023	1059	11/24/2025	11/24/2025	8.5	10.17	9.45	9.52	25.66	28.39	33.33	33.8	33.33	33.33	33.33	33.33	33.33	37.47	38.45	37.68	38.45	38.45	38.92	38.92	38.92	38.45	29.18	28.54
SPP South - Energy Price - 1H2023	1060	11/25/2025	11/25/2025	28.54	27.82	27.82	27.47	27.82	28.54	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	34.9	37.8	37.8	34.75	27.82	25.02
SPP South - Energy Price - 1H2023	1061	11/26/2025	11/26/2025	26.52	24.65	25.3	24.97	25.96	26.52	32.33	37.32	37.32	37.32	37.32	37.32	37.32	37.32	37.32	37.32	37.75	37.75	37.75	37.75	37.75	37.75	28.54	28.15
SPP South - Energy Price - 1H2023	1062	11/27/2025	11/27/2025	28.15	27.62	27.4	27.4	28.15	28.15	34.75	37.32	34.02	32.33	33.42	32.33	32.33	33.85	32.33	35.15	37.32	37.32	34.88	37.32	32.33	32.33	27.4	28.15
SPP South - Energy Price - 1H2023	1063	11/28/2025	11/28/2025	25.33	25.33	25.33	22.82	22.82	22.82	30.25	30.25	30.25	30.25	30.25	30.25	30.25	28.11	28.32	27.62	30.25	30.25	30.25	30.25	31.91	30.25	22.82	22.82
SPP South - Energy Price - 1H2023	1064	11/29/2025	11/29/2025	17.43	22.82	22.82	22.82	22.82	22.82	46.76	46.76	43.02	42.14	46.76	46.76	46.76	48.03	52.69	48.03	46.76	46.76	52.69	46.76	46.76	46.76	25.33	25.33
SPP South - Energy Price - 1H2023	1065	11/30/2025	11/30/2025	25.33	25.33	25.33	22.82	22.82	25.33	46.76	46.76	46.76	46.76	42.14	46.76	42.14	42.14	42.14	42.14	45.87	45.87	42.14	46.76	42.14	42.14	25.62	25.33
SPP South - Energy Price - 1H2023	1066	12/1/2025	12/1/2025	23.13	23.13	23.13	23.13	23.13	26.63	30.7	33.52	32.42	33.49	33.47	33.26	33.52	33.49	33.47	33.34	33.34	33.52	33.47	31.74	33.46	30.56	27.26	28.89
SPP South - Energy Price - 1H2023	1067	12/2/2025	12/2/2025	26.78	24.73	23.67	24.22	23.93	26.11	32.19	32.19	31.16	31.07	30.82	30.7	30.7	30.7	30.7	30.7	30.82	32.9	32.88	32.52	32.11	31.37	24.67	26.11
SPP South - Energy Price - 1H2023	1068	12/3/2025	12/3/2025	24.59	26.76	28.67	28.89	28.19	24.59	32.07	33.13	32.07	31.79	30.7	31.79	31.79	31.79	31.79	31.79	31.88	33.59	33.13	32.07	33.32	33.19	28.59	28.89
SPP South - Energy Price - 1H2023	1069	12/4/2025	12/4/2025	28.49	28.89	28.49	25.78	26.61	25.78	33.64	33.79	33.68	33.31	33.36	33.36	33.36	33.36	31.88	33.04	33.04	33.04	33.04	33.36	33.04	33.31	28.89	25.78
SPP South - Energy Price - 1H2023	1070	12/5/2025	12/5/2025	28.69	28.69	28.69	28.69	25.11	25.11	31.29	32.73	32.54	31.29	31.29	32.53	34.35	32.69	31.6	32.1	36.11	36.12	36.53	36.53	36.12	36.12	28.89	28.89
SPP South - Energy Price - 1H2023	1071	12/6/2025	12/6/2025	28.69	28.69	28.69	28.69	28.89	28.69	36.22	37.6	36.22	35.97	35	35.01	35.01	35	35	35	35.01	35.97	35.97	35.97	35.97	35.01	27.92	27.92
SPP South - Energy Price - 1H2023	1072	12/7/2025	12/7/2025	27.92	27.92	25.11	25.11	25.11	25.11	35	35	31.49	31.49	11.85	9.88	27.89	30.75	31.48	35	35.01	35.97	35.97	35.01	35.01	35	25.11	25.11
SPP South - Energy Price - 1H2023	1073	12/8/2025	12/8/2025	26.71	26.71	21.43	8.04	10.2	12.27	31.88	30.7	30.3	9.88	9.13	8.38	26.98	20.49	21.2	31.88	33.03	38.1	38.1	38.1	34.65	37.7	29.74	29.74
SPP South - Energy Price - 1H2023	1074	12/9/2025	12/9/2025	29.99	29.99	29.99	29.99	30.16	30.16	38.56	39.05	39.05	38.56	38.56	36.8	34.92	33.43	33.43	33.43	38.55	38.27	36.06	36.29	38.55	33.63	29.99	30.16
SPP South - Energy Price - 1H2023	1075	12/10/2025	12/10/2025	30.98	30.99	30.99	30.99	30.98	30.99	39.45	39.97	41.48	39.45	39.45	39.45	39.45	33.92	38.68	37.79	39.31	39.45	39.45	39.45	39.45	39.45	30.99	29.99
SPP South - Energy Price - 1H2023	1076	12/11/2025	12/11/2025	29.99	29.99	32.36	32.36	29.02	29.02	35.23	36.1	40.95	40	35.25	35.23	35.23	35.23	35.23	35.23	36.1	36.39	40.95	35.97	35.23	35.23	29.99	29.78
SPP South - Energy Price - 1H2023	1077	12/12/2025	12/12/2025	28.89	28.89	28.89	28.89	28.89	28.89	37.77	37.77	37.77	32.45	32.44	31.88	31.88	31.86	30.7	32.44	32.45	33.65	32.45	32.45	32.45	32.45	28.89	26.45
SPP South - Energy Price - 1H2023	1078	12/13/2025	12/13/2025	26.45	26.45	26.45	19.8	21.22	24.63	30.88	33.16	33.16	33.16	27.24	22.8	33.16	33.16	33.16	36.91	36.91	36.91	36.91	37.6	37.6	36.22	28.87	26.45

SPP South - Energy Price - 1H2023	1079	12/14/2025	12/14/2025	26.45	28.89	26.45	26.45	26.45	26.45	33.16	33.16	33.16	33.16	36.22	36.91	36.91	36.91	36.91	36.91	36.91	37.6	37.94	36.91	37.6	36.91	29.48	29.44
SPP South - Energy Price - 1H2023	1080	12/15/2025	12/15/2025	26.25	28.89	28.89	28.89	28.89	29.22	34.59	34.59	36.58	34.95	33.34	32.59	32.37	33.77	32.23	32.31	33.77	34.74	34.13	32.23	32.02	31.93	26.25	26.25
SPP South - Energy Price - 1H2023	1081	12/16/2025	12/16/2025	26.07	26.07	26.07	26.07	26.07	28.89	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.79	34.44	34.12	33.3	33.6	29.23	28.89
SPP South - Energy Price - 1H2023	1082	12/17/2025	12/17/2025	28.58	28.58	28.58	28.58	28.58	28.58	31.64	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	36.83	36.83	36.83	37.27	36.83	29.37	28.58
SPP South - Energy Price - 1H2023	1083	12/18/2025	12/18/2025	27.06	27.06	26.11	24.35	24.35	24.35	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.57	30.22	30.17	30.7	27.06	27.06
SPP South - Energy Price - 1H2023	1084	12/19/2025	12/19/2025	25.68	25.68	25.68	25.68	25.68	25.68	31.88	32.93	32.93	32.93	32.93	32.93	32.93	30.7	28.21	31.88	30.7	31.88	32.93	33.25	32.93	33.11	28.89	27.58
SPP South - Energy Price - 1H2023	1085	12/20/2025	12/20/2025	26.99	25.68	26.57	26.57	26.78	26.57	33.19	36.22	36.22	36.22	36.22	32.19	36.22	31.35	35.96	36.22	36.22	36.22	36.22	36.22	36.22	36.22	28.89	28.89
SPP South - Energy Price - 1H2023	1086	12/21/2025	12/21/2025	26.88	25.68	25.68	25	25.68	25.68	32.19	32.19	36.22	37.18	36.6	37.6	37.6	37.6	37.6	36.22	36.22	37.6	37.6	37.6	37.6	37.6	28.16	29.99
SPP South - Energy Price - 1H2023	1087	12/22/2025	12/22/2025	28.89	29.99	28.89	28.89	28.89	27.7	31.94	34.12	34.3	33.62	33.29	33.29	31.88	30.7	30.7	30.7	31.88	32.77	31.88	31.88	31.88	33.62	28.89	25.33
SPP South - Energy Price - 1H2023	1088	12/23/2025	12/23/2025	25.8	25.8	25.8	25.8	23.25	25.08	28.98	30.7	28.98	28.98	28.98	9.58	7.73	7.7	8.09	26.91	28.98	28.98	31.77	32.05	31.88	32.05	26.51	26.51
SPP South - Energy Price - 1H2023	1089	12/24/2025	12/24/2025	25.54	25.54	25.54	24.87	25.54	25.54	32.79	32.79	32.79	32.79	32.79	32.79	32.79	31.88	30.7	31.88	32.79	32.79	32.79	32.79	32.79	32.79	26.27	25.54
SPP South - Energy Price - 1H2023	1090	12/25/2025	12/25/2025	25.93	25.54	25.54	25.54	25.54	25.54	32.79	33.35	33.51	32.56	31.88	31.88	30.7	30.7	30.7	30.03	30.7	33.1	31.88	30.7	31.88	30.7	25.54	22.43
SPP South - Energy Price - 1H2023	1091	12/26/2025	12/26/2025	25.13	22.66	25.13	22.66	25.13	25.81	33.07	33.07	33.4	33.4	33.07	33.07	33.07	33.07	33.07	31.88	33.07	33.07	33.07	33.24	33.07	31.88	25.81	25.81
SPP South - Energy Price - 1H2023	1092	12/27/2025	12/27/2025	25.53	25.13	25.13	25.13	25.81	26.45	36.22	34.04	34.25	32.36	32.06	32.36	32.36	31.5	31.38	31.5	31.5	33.04	34.11	32.36	32.18	31.5	25.13	25.13
SPP South - Energy Price - 1H2023	1093	12/28/2025	12/28/2025	25.13	22.66	25.13	25.13	25.81	24.27	31.5	32.35	31.5	31.5	28.4	28.4	28.4	28.4	28.4	28.4	31.2	32.35	33	33.16	32.38	32.35	25.81	25.81
SPP South - Energy Price - 1H2023	1094	12/29/2025	12/29/2025	24.69	24.69	24.69	24.69	24.69	24.69	30.7	32.07	32.71	30.7	30.36	30.36	30.7	30.36	30.7	30.7	32.07	32.71	35.59	32.94	35.59	30.88	27.44	27.44
SPP South - Energy Price - 1H2023	1095	12/30/2025	12/30/2025	24.47	26.99	27.19	27.19	27.29	27.21	35.32	35.71	35.71	35.71	35.71	35.71	35.71	35.71	35.32	35.71	35.32	35.32	33.4	30.89	30.7	30.7	24.47	24.47
SPP South - Energy Price - 1H2023	1096	12/31/2025	12/31/2025	21.87	21.87	21.87	21.87	21.87	21.87	31.88	31.88	30.7	29.33	29.33	30.7	30.7	30.7	30.7	30.7	31.88	31.88	31.88	31.88	31.88	30.7	24.89	21.87
SPP South - Energy Price - 1H2023	1097	1/1/2026	1/1/2026	25.4	25.4	25.4	25.4	28.92	28.17	38.05	38.05	37.24	34.26	34.26	34.26	34.26	38.05	39.49	38.05	39.99	40.37	40.37	40.37	40.37	39.99	28.92	28.92
SPP South - Energy Price - 1H2023	1098	1/2/2026	1/2/2026	33.69	33.28	33.69	33.69	32.77	33.28	46.47	46.47	41.93	39.93	39.93	39.93	39.93	39.93	39.93	41.48	41.93	44.96	41.93	39.93	39.93	39.93	30.27	30.27
SPP South - Energy Price - 1H2023	1099	1/3/2026	1/3/2026	30.27	30.27	30.27	18.63	30.27	30.27	39.04	39.04	43.46	43.46	43.46	42.92	43.42	43.46	43.46	43.46	43.46	43.46	43.46	43.46	43.46	43.42	33.11	30.27
SPP South - Energy Price - 1H2023	1100	1/4/2026	1/4/2026	30.27	30.27	30.27	27.85	30.27	30.27	39.04	39.04	39.04	26.03	13.47	6.49	4.06	2.43	6.99	9.89	17.7	39.04	39.04	39.04	39.04	39.04	30.27	30.27
SPP South - Energy Price - 1H2023	1101	1/5/2026	1/5/2026	27.6	27.6	27.6	27.6	27.6	27.6	36.83	36.83	39.24	36.83	37.23	36.83	9.77	9.13	3.27	8.77	2.42	36.82	36.83	36.83	36.83	36.83	27.6	27.6
SPP South - Energy Price - 1H2023	1102	1/6/2026	1/6/2026	27.41	27.41	18.18	27.41	27.41	27.41	40.82	42.66	39.49	38.05	36.6	39.49	38.05	39.49	39.49	38.05	42.66	42.66	43.12	43.12	43.12	42.66	31.28	31.27
SPP South - Energy Price - 1H2023	1103	1/7/2026	1/7/2026	29.53	30.33	30.33	30.33	30.33	29.53	41.59	41.59	39.38	40.48	41.59	39.49	39.49	39.56	39.49	41.59	41.59	41.59	41.75	41.59	41.59	40.48	29.53	29.53
SPP South - Energy Price - 1H2023	1104	1/8/2026	1/8/2026	29.24	29.24	29.23	29.24	29.23	29.24	39.49	41.24	38.05	35.36	38.05	39.49	38.05	38.05	38.05	38.05	39.49	41.66	41.66	41.66	41.24	41.24	30.03	30.03
SPP South - Energy Price - 1H2023	1105	1/9/2026	1/9/2026	27.49	27.49	27.49	27.49	27.49	27.68	38.69	38.7	40.35	38.82	38.7	38.7	38.69	38.37	38.36	38.36	38.37	38.37	38.69	38.37	38.37	38.36	28.82	26.78
SPP South - Energy Price - 1H2023	1106	1/10/2026	1/10/2026	26.78	26.78	26.78	27.49	26.78	27.49	35.46	36.98	35.46	35.46	35.46	35.46	35.46	35.46	35.46	35.46	35.46	42.92	42.92	42.92	42.41	42.92	31.12	32.44
SPP South - Energy Price - 1H2023	1107	1/11/2026	1/11/2026	28.67	27.49	27.49	26.78	26.78	26.78	34.54	35.46	39.47	34.54	31.19	31.19	31.19	10.3	9.72	31.19	31.19	34.54	34.54	34.54	31.19	31.19	24.19	24.19
SPP South - Energy Price - 1H2023	1108	1/12/2026	1/12/2026	29.81	30.17	27.53	30.58	29.02	31.42	40.12	43.29	43.29	42.82	42.82	42.82	42.82	42.82	40.77	40.15	42.82	43.29	45.49	45.44	43.29	43.29	33.28	33.28
SPP South - Energy Price - 1H2023	1109	1/13/2026	1/13/2026	33.28	33.44	32.9	32.54	32.54	34.54	47.9	50.73	50.73	50.3	50.73	47.46	46.93	46.93	46.83	45.96	45.11	43.8	44.98	40.48	40.3	38.75	29.25	29.25
SPP South - Energy Price - 1H2023	1110	1/14/2026	1/14/2026	29.11	31.51	31.45	31.22	32.38	32.38	44.93	44.93	44.93	40.46	44.23	40.1	41.03	41.49	41.02	41.01	41.07	44.93	44.93	45.21	44.58	41.99	32.38	32.29
SPP South - Energy Price - 1H2023	1111	1/15/2026	1/15/2026	32.87	31.81	33.27	33.28	33.28	31.81	47.79	51.44	48.26	43.74	41.82	41.34	41.53	41.35	43.74	43.74	45.14	52.34	55.38	47.91	43.74	43.74	33.28	33.28
SPP South - Energy Price - 1H2023	1112	1/16/2026	1/16/2026	33.28	33.28	33.04	33.28	33.28	33.28	50.86	44.03	50.86	44.03	50.86	50.24	46.21	44.03	44.03	39.49	39.49	44.03	42.82	40.2	39.49	39.46	33.28	32.06
SPP South - Energy Price - 1H2023	1113	1/17/2026	1/17/2026	32.06	28.07	19.65	28.07	28.07	28.07	36.21	36.21	39.47	39.38	38.26	36.21	42.92	42.92	41.34	41.34	36.21	42.92	44.55	42.92	42.92	42.92	33.28	33.28
SPP South - Energy Price - 1H2023	1114	1/18/2026	1/18/2026	33.28	32.83	32.95	33.28	33.28	32.7	42.92	44.55	42.92	42.92	42.92	41.34	41.34	41.55	41.36	42.92	42.92	45.78	49.79	50.49	46.66	44.55	33.28	33.28
SPP South - Energy Price - 1H2023	1115	1/19/2026	1/19/2026	33.28	33.28	33.28	33.28	34.54	34.54	50.75	58.12	51.54	44.81	44.81	41.08	40.86	39.74	32.38	35.2	36.16	35.38	40.89	39.49	39.49	39.49	28.64	28.64
SPP South - Energy Price - 1H2023	1116	1/20/2026	1/20/2026	34.54	32.83	35.33	34.54	35.33	35.33	48.95	48.95	48.95	48.95	39.49	38.05	38.05	38.05	38.05	13.89	42.86	48.95	48.95	48.95	53.99	52.55	40.57	39.88
SPP South - Energy Price - 1H2023	1117	1/21/2026	1/21/2026	37.59	37.23	38.56	34.54	33.61	34.54	46.93	51.64	46.94	46.72	38.05	29.37	13.97	9.13	1.98	8.77	8.43	38.05	46.3	39.49	42.8	39.49	12.3	12.13
SPP South - Energy Price - 1H2023	1118	1/22/2026	1/22/2026	12.25	11.71	9.73	2.55	3.18	30.63	38.05	44.5	43.19	44.5	44.5	44.5	42.01	41.99	44.5	36.53	40.94	41.99	44.5	44.5	44.5	39.49	31.65	31.65
SPP South - Energy Price - 1H2023	1119	1/23/2026	1/23/2026	12.25	12.78	5.5	11.91	5.53	11.99	38.05	38.05	14.81	3.5	3.6	10.68	8.77	8.09	8.62	8.77	8.43	43.99	49.5	49.54	50.7	48.35	35.46	34.54
SPP South - Energy Price - 1H2023	1120	1/24/2026	1/24/2026	33.28	33.28	34.54	34.54	34.54	35.75	46.1	46.1	42.92	42.92	40.26	40.26	40.26	11.79	9.72	2.91	42.92	42.92	46.1	46.1	46.1	44.55	34.54	33.28
SPP South - Energy Price - 1H2023	1121	1/25/2026	1/25/2026	33.28	33.28	34.54	34.54	34.54	35.75	46.1	46.1	44.55	44.55	42.92	40.26	44.55	44.55	40.26	15.67	9.51	46.1	46.1	44.55	42.92	42.92	31.87	31.22
SPP South - Energy Price - 1H2023	1122	1/26/2026	1/26/2026	30.74	30.74	30.74	30.74	26.95	26.95	40.49	42.49	38.97	39.49	38.97	38.97	38.97	38.05	39.49	39.49	38.97	40.83	42.49	39.69	38.97	38.97	26.95	26.95
SPP South - Energy Price - 1H2023	1123	1/27/2026	1/27/2026	26.24	26.24	26.24	26.24	26.24	29.81	39.49	41.51	41.51	41.51	40.15	40.15	38.13	38.05	38.05	38.05	38.13	38.68	38.13	38.13	38.13	38.13	29.37	29.26
SPP South - Energy Price - 1H2023	1124	1/28/2026	1/28/2026	24.62	27.89	27.78	27.91	28	28.77	39.29	39.29	39.29	38.05	38.05	39.29	38.05	39.11	38.05	39.03	38.72	39.29	41.38	41.02	41.35	44.08	34.66	34.54
SPP South - Energy Price - 1H2023	1125	1/29/2026	1/29/2026	36.75	36.7	36.91	36.33	34.54	35.89	50.37	54.67	50.37	44.25	43.1	42.96	42.3	42.22	42.3	42.96	44.12	45.05	51.15	50.97	45.84	47.18	37.19	36.17
SPP South - Energy Price - 1H2023	1126	1/30/2026	1/30/2026	34.97	34.54	33.69	34.54	34.54	34.54	48.51	52.46	45.94	42.95	42.1	41.93	41.93	40.04	41.85	38.05	34.07	41.93	44.13	41.93	39.49	41.93	32.91	29.46
SPP South - Energy Price - 1H2023	1127	1/31/2026	1/31/2026	29.46	29.46	30.51	33.23	33.3	33.28	42.25	39.35	42.92	38	38	38.01	7.98	9.15	1.65	7.28	7.13	33.83	42.92	40.17	39.49	42.92	33.69	32.8
SPP South - Energy Price - 1H2023	1128	2/1/2026	2/1/2026	28.85	28.85	28.85	29.37	29.37	28.85	37.96	38.32	38.32	38.33	38.32	38.32	37.29	37.29	37.29	37.29	37.29	37.29	37.29	33.52	33.52	33.52	25.93	25.93
SPP South - Energy Price - 1H2023	1129	2/2/2026	2/2/2026	26.76	26.76	26.76	26.76	13.96	26.76	40.01	40.01	35.59	9.88	8.76	1.54	1.28	6.25	5.22	0.92	1.01	1.33	5.22	6.28	6.66	8.23	5.27	2.7
SPP South - Energy Price - 1H2023	1130	2/3/2026	2/3/2026	2.41	5.27	3.63	9.98	9.74	13.28	38.29	38.29	38.29	35.61	36.39	28.9	35.61	8.27	7.31	7.39	6.95	37.09	36.11	38.49	38.29	37.09	25.43	25.43
SPP South - Energy Price - 1H2023	1131	2/4/2026	2/4/2026	23.63	23.63	23.63	13.84	9.74	23.63	37.09	40.76	38.49	40.76	37.25	37.77	37.72	37.57	37.09	37.09	36.07	38.73	39.87	40.76	40.76	40.76	26.95	26.95
SPP South - Energy Price - 1H2023	1132	2/5/2026	2/5/2026	28.34	28.34	28.34	28.34	27.58	27.58	38.49	37.5	38.38	39.02	39.77	40.22	37.5	37.5	37.5	37.5	37.5	39.25	39.25	39.25	38.49	42.5	28.63	28.34
SPP South - Energy Price - 1H2023	1133	2/6/2026	2/6/2026	28.15	27.4	27.75	28.15	28.15	28.15	42.74	43.83	43.61	42.74	42.31	42.08	40.31	37.29	37.29	37.29	37.29	40.54	40.71	40.44	40.19	42.27	28.15	28.15
SPP South - Energy Price - 1H2023	1134	2/7/2026	2/7/2026	29.37	28.15	27.4	25.8	24.66	24.66	35.42	36.39	36.39	32.97	35.42	32.19	32.58	31.87	31.87	31.87	31.87	31.87	35.84	36.39	35.42	13.05	10.47	8.02
SPP South - Energy Price - 1H2023	1135	2/8/2026	2/8/2026	9.95	3.24	9.6	9.59	17.33	24.66	31.87	35.42	35.42	36.32	35.86	36.39	36.39	33.37	32.42	35.42	35.42	36.28	37.18	37.96	35.42	35.42	25.49	24.66
SPP South - Energy Price - 1H2023	1136	2/9/2026	2/9/2026	25.49	25.49	25.49	25.49	25.49	26.18	39.8	41.95	40.2	39.8	37.09	35.87	34.36	34.36	34.36	34.36	34.36	37.81	39.03	39.8	39.8	38.49	25.49	25.49
SPP South - Energy Price - 1H2023	1137	2/10/2026	2/10/2026	25.4	25.4	25.4	25.4	25.4	25.4	37.09	40.08	37.09	34.26	35.92	37.09	34.12	7.9	7.82	5.35	5.16	34.26	37.09	34.26	35.23	34.26	22.9	12.93
SPP South - Energy Price - 1H2023	1138	2/11/2026	2/11/2026	7.04	7.21	7.11	5.4	7.6	7.83	35.08	35.64	35.08	3.09	0	0.19	0	0	0	0	0	4.29	36.09	37.04	37.09	38.53	26.48	26.13
SPP South - Energy Price - 1H2023	1139	2/12/2026	2/12/2026	24.45	23.89	23.43	26.01	26.01	26.01	37.09	40.88	34.94	36.65	36.05	36.14	35.65	35.29	34.94	34.94	34.94	34.94	37.14	38.06	36.19	35.61	23.43	23.43
SPP South - Energy Price - 1H2023	1140	2/13/2026	2/13/2026	22.68	22.68	22.68	22.68	22.68	25.15	33.97	37.09	35.34	33.97	33.97	33.97	33.97	30	33.97	30	26.02	33.97	34.74	34.19	33.97	33.97	22.68	22.68
SPP South - Energy Price - 1H2023	1141	2/14/2026	2/14/2026	22.68	16.94	22.68	22.68	22.68	22.68	31.07	33.75	33.39	32.51	30.83	30.43	29.67	29.31	29.31	29.31	28.46	28.88	25.63	29.31	29.31	25.85	20.57	20.26
SPP South - Energy Price - 1H2023	1142	2/15/2026	2/15/2026	20.26	20.26	9.6	15.72	22.68	22.68	29.31	32.34	29.31	32.51	30.12	30.43	29.67	29.31	29.31	29.31	29.31	29.75	31.13	32.51	33.65	33.39	25.83	25.15
SPP South - Energy Price - 1H2023	1143	2/16/2026	2/16/2026	29.37	29.73	29.73	29.73	29.73	29.73	45.29	45.29	45.29	45.29	45.29	45.29	45.29	42.78	44.35	42.06	44.05	43.48	43.83	45.29	45.29	40.84	27.59	26.71
SPP South - Energy Price - 1H2023	1144	2/17/2026	2/17/2026	26.04	27.88	26.04	26.04	27.49	28.97	39.12	44.3	40.11	38.3	38.3	29.7	26.87	31.61	1.43	23.55	31.62	33.86	38.3	39.39	37.43	37.09	27.76	26.04
SPP South - Energy Price - 1H2023	1145	2/18/2026	2/18/2026	30.48	29.37	29.37	29.37	29.37	29.37	40.11	47.02	37.09	37.09	44.63	37.09	37.09	31.07	35.38	34.11	37.09	37.09	44.4	46.06	43.12	41.04	30.48	29.27
SPP South - Energy Price - 1H2023	1146	2/19/2026	2/19/2026	9.95	9.91	10.59	17.96	28.12	28.12	40.98	40.98	37.09	39.88	38.49	29.94	35.65	31.07	38.48	39.7	36.78	40.98	40.98	41.13	41.76	40.98	30.48	28.12
SPP South - Energy Price - 1H2023	1147	2/20/2026	2/20/2026	28.5	28.5	25.63	28.5	28.5	28.5	43.69	39.83	39.8	39.15	37.77	30.23	7.99	1.46	6.14	5.35	7.53	6.95	37.09	37.77	37.77	37.77	25.63	25.63
SPP South - Energy Price - 1H2023	1148	2/21/2026	2/21/2026	25.63	25.63	25.63	25.63	25.63	25.63	33.13	36.84	33.51	33.13	33.13	33.13	33.13	7.41	8.01	33.13	33.13	33.13	34.92	33.77	34.92	34.24	25.9	25.63
SPP South - Energy Price - 1H2023	1149	2/22/2026	2/22/2026	25.63	25.63	25.63	25.63	25.63	25.63	33.13	34.92	34.92	33.13	33.13	33.13	33.13	5.2	1.46	5.48	0.52	7.12	33.13	33.13	34.72	36.84	27.15	26.29
SPP South - Energy Price - 1H2023	1150	2/23/2026	2/23/2026	25.81	26.38	26.38	26.38	26.38	27.1	40.95	41.38	40.95	40.95	40.95	40.95	40.95	40.95	40.56	40.56	40.26	40.95	40.95	41.38	40.95	38.81	26.38	26.38
SPP South - Energy Price - 1H2023	1151	2/24/2026	2/24/2026	28.75	27.97	27.97	27.97	27.97	28.75	39.96	43.01	39.29	37.11	37.11	37.11	37.09	37.11	37.09	29.23	37.09	33.59	37.09	37.11	34.18	37.09	25.16	25.16
SPP South - Energy Price - 1H2023	1152	2/25/2026	2/25/2026	23.2	9.02	23.2	23.2	23.2	25.74	37.09	40.12	37.09	34.73	34.59	34.59	32.51	32.59	31.6	26.68	28.48	34.59	34.59	34.59	34.59	34.59	17.68	8.08
SPP South - Energy Price - 1H2023	1153	2/26/2026	2/26/2026	8.97	9.13	8.77	8.83	8.65	24.55	37.09	37.09	36.33	36.33	36.33	36.33	19.61	36.33	36.33	36.33	36.33	36.33	37.09	38.82	42.11	38.49	28.03	27.42
SPP South - Energy Price - 1H2023	1154	2/27/2026	2/27/2026	27.32	27.32	27.32	27.22	26.74	27.32	41.22	44.41	41.66	41.22	40.71	40.66	39.29	38.74	37.56	36.93	36.75	37.09	40.14	39.26	36.43	35.55	23.95	23.95
SPP South - Energy Price - 1H2023	1155	2/28/2026	2/28/2026	23.95	23.95	23.95	23.95	23.95	23.95	30.95	30.95	30.95	6.96	2.57	1.27	1.46	1.32	1.42	1.47	1.43	2.67	30.95	30.95	27.34	12.36	22.99	23.95
SPP South - Energy Price - 1H2023	1156	3/1/2026	3/1/2026	20.46	20.46	20.46	20.46	20.46	20.46	36.32	36.32	36.32	8.51	8.05	1.24	0	1.35	1.85	1.35	1.35	0	1.51	1.71	1.49	1.31	0.76	0
SPP South - Energy Price - 1H2023	1157	3/2/2026	3/2/2026	0.67	0	1.32	1.29	1.17	2.4	5.67	8.31	1.3	6.49	1.28	5.23	5.04	36.44	36.71	30.7	30.18	32.57	33.62	35.37	34.76	35.88	24.18	7.19
SPP South - Energy Price - 1H2023	1158	3/3/2026	3/3/2026	3.23	1.27	1.32	1.29	2.7	1.04	8.47	9.4	8.91	6.39	1.87	1.18	1.36	1.23	1.41	1.37	1.33	2.48	13.24	36.71	36.71	36.71	24.61	24.61
SPP South - Energy Price - 1H2023	1159	3/4/2026	3/4/2026	26.18	26.18	26.18	26.18	26.18	26.18	42.43	42.43	42.43	38.51	42.4	42.43	42.43	42.43	39.57	42.43	42.43	42.43	45.63	47.01	42.43	42.43	27.12	26.18
SPP South - Energy Price - 1H2023	1160	3/5/2026	3/5/2026	26.23	26.23	26.13	26.13	26.13	26.23	42.88	42.88	42.83	42.57	41.69	38.79	36.71	35.37	35.37	7.24	8.78	35.29	38.79	42.88	42.88	42.88	26.23	26.23
SPP South - Energy Price - 1H2023	1161	3/6/2026	3/6/2026	26.13	26.13	26.13	26.13	26.13	26.41	39.01	39.93	39	36.71	36.71	35.37	35.38	35.37	32.54	32.54	35.37	35.38	35.38	35.38	35.37	35.37	21.11	18.81

SPP South - Energy Price - 1H2023	1162	3/7/2026	3/7/2026	8.05	21.11	19.42	21.11	21.11	21.11	37.47	37.47	11.69	33.35	10.23	3.79	37.47	37.47	41.6	41.6	41.6	42.06	45.33	46.84	46.44	45.12	23.44	23.44
SPP South - Energy Price - 1H2023	1163	3/8/2026	3/8/2026	23.43	21.38	23.43	21.11	23.44	23.87	42.82	42.38	41.6	37.47	37.47	41.6	41.6	34.27	11.3	11.74	38.44	42.06	44.63	42.1	41.6	41.6	21.11	21.41
SPP South - Energy Price - 1H2023	1164	3/9/2026	3/9/2026	9.73	19.66	7.81	7.86	19.66	21.79	36.71	35.37	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	10.94	12.53	14.58	15.43	15.43	7.64	7.19
SPP South - Energy Price - 1H2023	1165	3/10/2026	3/10/2026	12.8	8.12	7.81	7.86	20.06	22.25	37.36	35.37	35.37	35.37	35.37	36.71	37.35	36.71	36.71	36.71	36.71	36.71	36.71	37.35	35.37	35.37	23.22	25.24
SPP South - Energy Price - 1H2023	1166	3/11/2026	3/11/2026	22.96	22.96	20.69	22.96	20.69	20.69	35.37	34.8	34.8	24.13	35.37	36.71	35.37	34.82	35.37	36.71	35.61	37.65	38.59	40.21	38.34	37.65	23.91	23.27
SPP South - Energy Price - 1H2023	1167	3/12/2026	3/12/2026	24	21.61	24	24.3	26.13	26.13	39.79	39.79	38.94	39.79	36.07	36.07	38.94	38.94	36.71	36.71	36.07	36.07	36.07	36.07	36.07	36.07	21.61	9.04
SPP South - Energy Price - 1H2023	1168	3/13/2026	3/13/2026	20.55	20.55	20.55	21.48	20.55	20.55	34.6	34.6	35.37	35.37	34.6	38.13	38.12	38.12	38.12	38.13	38.13	38.13	38.12	36.71	36.71	34.6	8.54	7.63
SPP South - Energy Price - 1H2023	1169	3/14/2026	3/14/2026	2.42	1.27	2.81	5.45	1.46	2.11	11.75	4.99	1.71	1.61	1.51	1.55	0	1.35	1.85	1.8	1.74	4.63	10.64	15.1	14.91	15.1	8.54	7.63
SPP South - Energy Price - 1H2023	1170	3/15/2026	3/15/2026	8.05	8.03	7.83	9.27	20.55	7.26	40.47	41.29	45.61	44.22	41.01	40.88	40.48	40.22	40.88	38.13	40.47	40.47	36.67	38.59	36.48	36.48	20.55	20.55
SPP South - Energy Price - 1H2023	1171	3/16/2026	3/16/2026	21.47	20.55	13.9	21.47	21.47	21.47	35.37	35.17	37.46	37.04	35.37	35.37	35.17	35.37	36.71	35.37	35.17	32.35	34.63	35.17	6.81	4.5	1.17	0.96
SPP South - Energy Price - 1H2023	1172	3/17/2026	3/17/2026	1.38	1.27	1.32	1.29	1.17	5.49	9.97	8.31	6.96	4.78	4.31	1.49	1.36	1.03	1.41	1.37	1.33	2.48	5.68	11.96	34.75	34.75	21.16	11.81
SPP South - Energy Price - 1H2023	1173	3/18/2026	3/18/2026	9.25	8.92	3.17	8.64	7.4	21.32	35.37	34.96	33.16	3.38	1.87	1.18	1.36	5.87	1.41	7.24	8.78	6.02	32.25	35.37	36.71	36.71	23.67	23.67
SPP South - Energy Price - 1H2023	1174	3/19/2026	3/19/2026	25.2	25.2	25.2	25.2	25.2	25.9	41.45	41.45	43.46	43.39	41.45	41.45	39.04	41.45	41.45	41.45	37.85	37.13	38.34	37.2	35.77	35.77	22.66	21.09
SPP South - Energy Price - 1H2023	1175	3/20/2026	3/20/2026	22.02	18.55	7.8	17.9	22.02	21.17	34.73	28.74	1.3	1.22	1.28	1.18	1.28	1.23	11.74	10.8	34.88	34.88	35.37	35.37	35.37	35.37	24.47	24.47
SPP South - Energy Price - 1H2023	1176	3/21/2026	3/21/2026	23.91	24.47	24.47	24.47	24.47	25.14	44.63	44.15	43.43	43.79	43.43	43.43	39.08	39.08	39.08	6.59	37.47	35.02	39.08	39.08	39.08	39.08	24.47	23.67
SPP South - Energy Price - 1H2023	1177	3/22/2026	3/22/2026	23.91	24.47	24.47	24.47	24.47	24.47	44.63	43.43	43.43	43.43	43.43	43.43	43.43	39.08	39.08	39.08	39.08	42.48	39.08	39.08	39.08	39.08	22.02	22.02
SPP South - Energy Price - 1H2023	1178	3/23/2026	3/23/2026	22.49	23.62	22.49	22.49	25	26.13	41.66	41.18	37.17	38.61	36.14	41.18	38.61	36.35	36.85	36.89	37.64	38.61	38.64	38.92	38.77	38.81	25.01	24.4
SPP South - Energy Price - 1H2023	1179	3/24/2026	3/24/2026	21.7	22.87	23.75	24.11	24.11	24.11	36.8	34.45	34.45	36.71	36.71	36.71	35.43	35.8	38.58	39.94	36.8	36.71	36.71	39.94	39.94	36.71	24.43	24.77
SPP South - Energy Price - 1H2023	1180	3/25/2026	3/25/2026	23.85	23.85	23.22	23.22	23.22	23.22	36.71	35.37	35.37	35.45	35.37	36.71	34.23	33.37	35.37	33.37	33.37	33.37	33.37	35.37	33.37	33.37	20.92	20.92
SPP South - Energy Price - 1H2023	1181	3/26/2026	3/26/2026	9.51	21.89	20.67	20.63	21.89	21.89	31.76	34.8	32.4	32.32	35.37	35.37	35.25	34.43	32.02	31.76	31.76	31.76	34.8	36.86	36.53	36.71	21.89	19.75
SPP South - Energy Price - 1H2023	1182	3/27/2026	3/27/2026	8.05	8.03	18.48	8.98	9.18	18.48	30	30	30	30	33.32	30	30	33.38	30.93	33.52	32.89	34.85	34.57	35.14	35.14	35.14	20.98	20.44
SPP South - Energy Price - 1H2023	1183	3/28/2026	3/28/2026	18.48	18.48	19.44	20.98	20.98	20.44	37.25	37.25	36.29	37.25	37.25	37.25	36.29	37.1	37.25	37.25	38.1	38.19	38.31	38.68	37.25	36.57	20.44	20.44
SPP South - Energy Price - 1H2023	1184	3/29/2026	3/29/2026	20.44	18.48	18.48	18.48	20.44	20.44	36.29	36.29	32.8	14.42	2.39	0	0	0	0	0	0	0.23	9.51	2.44	2.82	2.51	1.27	0
SPP South - Energy Price - 1H2023	1185	3/30/2026	3/30/2026	1.32	0	0	0.08	1.37	1.43	2.6	1.85	1.78	1.62	1.82	30.77	30.77	30.77	30.77	30.77	30.77	35.37	35.73	35.73	35.73	35.37	21.08	21.08
SPP South - Energy Price - 1H2023	1186	3/31/2026	3/31/2026	22.18	22.18	22.18	22.18	22.18	22.18	36.71	36.71	35.37	36.71	32.11	11.18	1.45	12.48	11.81	1.81	32.11	32.11	32.11	35.37	34.16	32.11	20	12.92
SPP South - Energy Price - 1H2023	1187	4/1/2026	4/1/2026	9.03	8.68	7.91	3.88	17.64	19.24	36.45	34.17	33.88	33.16	33.92	8.88	11.99	4.84	12.17	13.01	13.46	12.94	12.51	12.71	11.17	9.5	1.24	1.07
SPP South - Energy Price - 1H2023	1188	4/2/2026	4/2/2026	1.39	1.34	1.15	1.22	5.41	7.09	14.14	34.86	34.86	11.62	14.89	11.55	15.03	34.86	30.02	8.04	28.24	34.86	12.25	12.71	8.83	9.01	1.24	1.07
SPP South - Energy Price - 1H2023	1189	4/3/2026	4/3/2026	1.39	1.34	1.15	1.22	8.08	7.97	13.07	12.42	28.38	32.97	32.97	11.55	11.99	9.33	12.17	13.01	4.78	7.82	12.51	32.97	36.45	32.97	16.91	11.71
SPP South - Energy Price - 1H2023	1190	4/4/2026	4/4/2026	12.16	11.93	16.91	16.91	16.91	17.54	39.29	36.04	36.04	36.04	39.65	36.04	36.04	19.98	16.03	10.75	17.73	36.04	36.04	36.04	36.04	36.04	16.91	16.91
SPP South - Energy Price - 1H2023	1191	4/5/2026	4/5/2026	16.91	16.91	16.91	16.91	8.22	13.59	36.04	16.36	29.01	34.49	36.45	33.82	36.04	38.9	36.04	37.38	39.29	39.29	40.13	40.34	40.34	39.29	18.44	18.44
SPP South - Energy Price - 1H2023	1192	4/6/2026	4/6/2026	16.51	8.68	17.19	17.14	16.51	17.19	36.45	32.33	32.32	32.31	28.01	11.55	29.72	6.97	12.17	13.01	7.73	12.94	19.77	32.32	32.31	9.5	5.73	4.97
SPP South - Energy Price - 1H2023	1193	4/7/2026	4/7/2026	1.39	1.34	1.15	1.22	1.18	7.97	13.07	3.49	1.84	1.66	1.88	3.93	11.99	16.63	12.31	33.26	33.26	33.26	36.45	36.45	37.57	33.26	17.09	7.9
SPP South - Energy Price - 1H2023	1194	4/8/2026	4/8/2026	1.39	3.79	7.29	7.96	8.22	17.5	34.02	36.45	33.95	33.95	33.95	32.93	33.41	31.74	32.84	33.95	32.2	31.47	32.43	33.95	33.95	20.14	5.73	1.07
SPP South - Energy Price - 1H2023	1195	4/9/2026	4/9/2026	4.3	5.44	17.28	7.11	17.28	17.28	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.96	33.13	33.13	17.28	17.28
SPP South - Energy Price - 1H2023	1196	4/10/2026	4/10/2026	17.12	17.12	17.12	18.67	18.67	18.67	36.45	33.96	11.96	1.66	1.88	1.83	1.49	1.43	1.55	1.43	1.46	4.55	1.63	12.56	14.86	32.88	17.12	3.61
SPP South - Energy Price - 1H2023	1197	4/11/2026	4/11/2026	1.39	1.34	0.02	1.21	1.18	1.12	2.6	2.52	0	0	0	0	0	0	0	0	0.92	2.02	2.14	16.74	36.49	36.49	17.12	17.12
SPP South - Energy Price - 1H2023	1198	4/12/2026	4/12/2026	17.12	17.12	17.12	13.63	17.12	17.12	36.49	36.49	15.75	15.17	26.93	36.49	15.79	16.05	12.61	32.51	36.49	39.79	40.86	40.86	40.86	39.79	18.67	17.12
SPP South - Energy Price - 1H2023	1199	4/13/2026	4/13/2026	17.01	17.01	17.01	17.01	17.01	17.01	33.14	32.69	32.69	32.69	24.5	26.64	4.96	12.18	12.17	13.01	13.46	12.94	31.69	18.9	31.24	20.14	8.86	7.9
SPP South - Energy Price - 1H2023	1200	4/14/2026	4/14/2026	8.86	8.68	4.87	7.96	8.22	17.2	37.79	33.01	33.01	33.01	28.8	10.99	6.74	6.22	13.32	13.41	13.46	18.51	36.45	36.45	34.47	33.01	8.86	7.9
SPP South - Energy Price - 1H2023	1201	4/15/2026	4/15/2026	9.03	8.68	9.32	9.32	17.38	18.96	33.31	12.42	6.47	11.51	1.88	11.55	1.49	4.84	12.17	16.08	16.16	33.31	33.31	33.31	14.86	14.73	3.66	5.39
SPP South - Energy Price - 1H2023	1202	4/16/2026	4/16/2026	17.16	5.25	4.42	4.29	5.81	6.88	32.94	10.04	11.96	2.42	3.24	11.55	8.99	4.11	3.61	5.12	3.93	5.12	4.71	12.71	14.86	22.54	13.94	7.9
SPP South - Energy Price - 1H2023	1203	4/17/2026	4/17/2026	9.03	16.79	18.03	18.3	18.79	22.18	37.36	37.03	37.03	37.03	37.03	37.03	37.03	37.03	37.03	37.03	37.03	37.03	37.03	36.45	36.45	36.45	18.79	18.3
SPP South - Energy Price - 1H2023	1204	4/18/2026	4/18/2026	18.3	18.3	18.03	17.75	18.3	18.3	40.04	39	39	39	39	35.78	35.78	15.49	12.61	13.81	17.73	20.1	12.68	11.04	11.64	12.52	1.24	8.48
SPP South - Energy Price - 1H2023	1205	4/19/2026	4/19/2026	9.03	16.79	16.79	16.79	16.79	16.79	10.15	35.78	26.09	15.17	15.05	35.78	35.78	16.05	38.46	39	38.42	38.42	39.85	35.78	35.78	35.78	16.79	16.79
SPP South - Energy Price - 1H2023	1206	4/20/2026	4/20/2026	9.09	8.68	8.97	7.96	16.59	17.87	36.32	36.45	36.45	36.45	36.45	36.45	36.45	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.45	18.35	17.87
SPP South - Energy Price - 1H2023	1207	4/21/2026	4/21/2026	18.18	18.18	18.18	18.67	18.18	18.67	36.83	32.15	36.45	36.45	32.15	32.15	32.15	32.15	32.15	32.15	32.15	36.45	36.45	36.45	36.45	36.45	18.18	18.18
SPP South - Energy Price - 1H2023	1208	4/22/2026	4/22/2026	17.53	17.68	17.68	17.79	18.78	20.15	36.29	36.29	36.29	36.29	36.29	36	11.99	12.18	12.17	13.01	12.83	13.32	12.25	31.41	14.86	31.4	1.24	1.35
SPP South - Energy Price - 1H2023	1209	4/23/2026	4/23/2026	16.11	8.68	16.11	7.96	16.11	16.11	31.21	31.21	30.84	30.92	8.25	8.4	4.01	1.43	1.55	1.43	8.33	10.76	26.06	31.21	31.21	31.21	16.11	7.9
SPP South - Energy Price - 1H2023	1210	4/24/2026	4/24/2026	4.27	4.32	3.32	2.88	8.22	15.81	30.97	33.96	30.97	35.5	30.97	30.97	30.97	30.97	27.01	30.97	30.97	27.01	30.97	11.81	3.2	2.4	0.97	0
SPP South - Energy Price - 1H2023	1211	4/25/2026	4/25/2026	0	0	0	0	0	0	0	0	0	0	0	1.98	0	0	0	0	1.93	2.02	2.14	16.74	19.58	34.02	15.96	15.96
SPP South - Energy Price - 1H2023	1212	4/26/2026	4/26/2026	9.03	8.68	7.91	7.96	13.64	15.96	34.02	26.73	13.37	15.17	0	29.9	30.12	29.75	34.02	28.18	34.02	34.02	37.04	38.01	38.01	37.04	15.96	15.96
SPP South - Energy Price - 1H2023	1213	4/27/2026	4/27/2026	16.55	16.55	6.16	7.56	6.4	6.96	8.55	1.65	1.59	1.67	1.88	8.07	30.36	31.93	36.45	36.45	36.45	31.93	31.93	36.45	31.93	31.93	16.55	15.96
SPP South - Energy Price - 1H2023	1214	4/28/2026	4/28/2026	16.09	15.96	14.88	14.88	15.66	8.03	32.56	32.56	32.56	36.45	36.45	37.63	37.63	39.97	41.5	41.38	42.99	41.38	40.51	38.57	37.63	37.63	21.21	18.95
SPP South - Energy Price - 1H2023	1215	4/29/2026	4/29/2026	18.88	18.38	18.87	18.38	16.89	18.38	35.76	36.26	35.23	36.45	36.45	36.45	37.5	37.5	37.5	38.08	37.85	37.5	37.5	37.84	37.17	37.17	18.38	18.38
SPP South - Energy Price - 1H2023	1216	4/30/2026	4/30/2026	17.63	17.63	17.63	17.63	17.63	18.09	36.2	35.91	34.1	33.83	31.33	31.49	31.33	31.33	31.33	28.13	28.19	31.33	31.33	31.33	31.33	31.33	15.03	16.18
SPP South - Energy Price - 1H2023	1217	5/1/2026	5/1/2026	18.83	18.83	18.83	18.83	20.47	18.88	29.69	27.96	3.73	27.96	25.98	26.59	8.7	10.47	11.93	27.96	32.09	32.31	15.31	23.9	32.31	29.17	18.83	18.83
SPP South - Energy Price - 1H2023	1218	5/2/2026	5/2/2026	18.95	18.83	18.36	7.75	19.92	20.47	33.03	33.03	33.03	33.03	30.38	30.38	30.38	33.03	30.38	33.03	30.38	30.38	33.03	33.03	30.38	33.02	18.83	18.83
SPP South - Energy Price - 1H2023	1219	5/3/2026	5/3/2026	18.83	18.83	18.83	7.75	18.83	18.06	30.38	28.88	5.94	7.64	30.38	10.08	20.08	26.77	26.77	30.38	30.38	30.38	33.03	33.88	33.88	33.88	21	20.47
SPP South - Energy Price - 1H2023	1220	5/4/2026	5/4/2026	19.93	19.93	18.34	19.93	20.44	20.44	31.61	28.94	27.48	27.35	27.35	22.45	11.48	11.4	18.74	3.11	13.33	18.65	27.35	31.61	31.61	31.61	20.44	20.44
SPP South - Energy Price - 1H2023	1221	5/5/2026	5/5/2026	20.58	20.57	20.57	20.58	20.58	20.58	32.44	32.12	32.22	30.88	28.81	28.5	32.22	28.72	28.07	28.07	28.07	28.07	32.22	28.87	30.52	28.14	18.92	18.92
SPP South - Energy Price - 1H2023	1222	5/6/2026	5/6/2026	19.96	19.96	19.96	19.96	21.15	22.31	33.68	33.3	29.38	32.28	33.68	33.95	33.95	33.68	33.68	33.68	29.38	33.68	33.68	33.95	33.95	33.68	20.33	19.96
SPP South - Energy Price - 1H2023	1223	5/7/2026	5/7/2026	20.24	8.41	8.17	7.75	20.24	22.04	32.3	24.82	21.07	22.91	6.58	7.66	9.66	10.47	24.3	13.4	13.33	18.65	27.95	29.72	29.72	29.72	20.24	9.81
SPP South - Energy Price - 1H2023	1224	5/8/2026	5/8/2026	7.31	8.78	20.03	20.03	20.03	21.81	33.02	29.45	31.95	32.03	30.84	32.02	34.04	29.46	29.46	29.46	29.46	29.46	34.04	33.77	34.04	33.77	21.81	21.32
SPP South - Energy Price - 1H2023	1225	5/9/2026	5/9/2026	20.24	21.8	21.27	20.25	20.1	21.81	35.18	36.11	36.11	36.02	35.18	33.22	35.18	35.18	35.18	35.18	32.31	32.31	35.18	35.18	36.11	36.11	22.38	22.38
SPP South - Energy Price - 1H2023	1226	5/10/2026	5/10/2026	21.81	21.8	21.8	21.8	21.81	21.81	36.11	36.11	35.18	35.18	36.11	36.11	36.11	35.18	36.11	35.18	32.37	35.18	35.18	32.31	32.31	32.31	20.03	20.03
SPP South - Energy Price - 1H2023	1227	5/11/2026	5/11/2026	9.56	11.84	7.72	20.29	20.29	20.29	29.78	33.05	29.78	32.55	33.31	33.54	34.42	34.14	34.14	34.14	33.16	34.14	34.14	29.78	29.78	32.2	7.2	20.29
SPP South - Energy Price - 1H2023	1228	5/12/2026	5/12/2026	20.59	22.43	8.29	21.57	10.9	20.59	27.45	25.26	27.36	25.26	25.08	30.16	30.16	30.75	34.56	34.85	34.63	31.86	34.63	34.63	34.63	33.99	20.59	20.59
SPP South - Energy Price - 1H2023	1229	5/13/2026	5/13/2026	20.81	20.81	8.17	20.81	21.76	22.68	30.44	32.27	30.47	34.63	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	35.17	34.87	22.23	20.81
SPP South - Energy Price - 1H2023	1230	5/14/2026	5/14/2026	22.96	22.94	22.96	7.75	21.07	22.96	34.42	34.68	34.63	35.23	35.54	35.54	35.94	35.54	35.54	35.94	35.54	35.94	35.94	35.94	36.69	35.54	23.57	22.87
SPP South - Energy Price - 1H2023	1231	5/15/2026	5/15/2026	22.86	22.35	22.87	20.98	20.98	22.87	34.97	32.64	34.63	35.1	34.63	35.11	35.11	35.11	35.41	35.41	35.94	35.41	35.41	35.94	35.94	35.1	24.58	23.47
SPP South - Energy Price - 1H2023	1232	5/16/2026	5/16/2026	23.47	22.87	20.98	22.87	22.86	20.98	33.85	36.89	37.9	39.3	38.56	44.71	41.36	37.87	37.87	37.88	36.89	37.87	37.87	39.3	38.76	36.89	20.98	20.98
SPP South - Energy Price - 1H2023	1233	5/17/2026	5/17/2026	20.98	20.98	11.02	20.98	20.98	20.98	10.68	33.85	33.85	36.89	33.85	36.89	36.89	33.85	33.85	36.89	36.89	33.85	33.85	33.85	33.85	19.93	20.98	20.98
SPP South - Energy Price - 1H2023	1234	5/18/2026	5/18/2026	21.61	21.38	21.61	21.61	21.61	23.57	34.63	31.82	34.59	31.44	34.63	35.94	35.94	34.63	31.44	34.63	34.63	31.44	34.63	35.94	35.99	34.63	21.61	21.61
SPP South - Energy Price - 1H2023	1235	5/19/2026	5/19/2026	9.2	21.73	8.17	21.73	21.73	21.73	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.59	31.58	31.58	31.58	31.58	31.58	31.59	31.59	31.59	21.73	21.56
SPP South - Energy Price - 1H2023	1236	5/20/2026	5/20/2026	1.73	1.68	1.73	1.7	4.47	6.65	8.12	4.72	1.51	1.59	4.34	2.06	4.34	10.47	11.93	12.97	12.97	12.3	12.97	31.37	31.37	31.37	10.57	4.42
SPP South - Energy Price - 1H2023	1237	5/21/2026	5/21/2026	5.05	1.68	4.58	1.7	5.05	3.89	8.12	7.05	6.07	5.81	6.58	7.66	8.7	31.08	31.08	31.08	31.08	31.08	31.08	31.08	34.63	31.08	21.32	21.32
SPP South - Energy Price - 1H2023	1238	5/22/2026	5/22/2026	15.63	18.81	18.81	4.23	4.04	20.4	29.93	29.93	29.93	29.93	29.93	29.93	29.93	27.53	29.93	27.53	29.93	29.93	29.93	29.93	10.58	5.89	4.92	8.41
SPP South - Energy Price - 1H2023	1239	5/23/2026	5/23/2026	1.73	1.68	1.73	4.71	1.68	4.19	7.81	6.28	7.6	2.09	15.15	32.92	34.6	35.86	36.81	36.81	41.28	36.81	36.81	36.81	35.86	33.73	20.4	9.81
SPP South - Energy Price - 1H2023	1240	5/24/2026	5/24/2026	8.08	8.78	7.72	7.75	7.47	8.42	11.03	11.8	8.13	35.86	36.81	35.86	36.81	35.86	35.86	35.86	32.92	32.92	32.92	36.81	35.13	36.81	22.23	20.41
SPP South - Energy Price - 1H2023	1241	5/25/2026	5/25/2026	20.41	20.41	20.41	20.41	20.41	20.58	4.28	4.78	6.07	29.93	33.41	34.3	34.3	34.3	34.58	34.3	34.58	34.3	34.3	34.58	34.3	31.38	20.44	20.41
SPP South - Energy Price - 1H2023	1242	5/26/2026	5/26/2026	21.23	21.23	21.23	21.23	21.23	21.47	30.97	32.83	32.85	32.55	35.46	35.58	36.42	35.78	35.7	36.96	35.78	36.57	36.39	36.42	36.39	35.78	23.77	22.93
SPP South - Energy Price - 1H2023	1243	5/27/2026	5/27/2026	23.72	23.72	23.72	23.72	23.42	24.16	34.97	33.46	34.29	34.63	35.94	35.94	35.94	36.17	36.17	36.17	36.17	35.94	34.63	34.63	34.63	31.6	21.74	21.74
SPP South - Energy Price - 1H2023	1244	5/28/2026	5/28/2026	21.89	21.89	1.25	3.38	6.15	23.88	31.78	34.63	35.58	34.63	35.94	34.63	34.63	36.38	35.94	36.38	36.64	35.94	34.63	34.63	31.78	31.78	21.89	21.89

SPP South - Energy Price - 1H2023	1245	5/29/2026	5/29/2026	22.57	22.28	22.28	2.84	22.28	22.28	32.61	32.87	34.63	32.28	34.63	34.63	34.63	34.63	34.63	36.93	35.94	36.93	34.63	34.63	35.01	34.63	24.32	22.28
SPP South - Energy Price - 1H2023	1246	5/30/2026	5/30/2026	22.57	22.28	5.4	22.28	22.37	22.28	35.95	35.95	35.95	35.97	39.23	39.23	39.23	39.23	39.23	40.29	39.23	39.23	39.71	39.23	40.29	40.29	24.97	24.32
SPP South - Energy Price - 1H2023	1247	5/31/2026	5/31/2026	24.32	24.32	24.32	24.32	24.48	24.32	39.23	39.95	40.23	40.29	40.29	40.29	43.91	43.91	43.91	45.55	44.54	43.91	40.29	39.23	40.29	39.23	24.32	22.28
SPP South - Energy Price - 1H2023	1248	6/1/2026	6/1/2026	22.09	22.02	22.02	22.02	22.02	22.02	32.24	32.24	32.24	32.24	34.03	32.24	36.97	36.97	37.25	37.25	37.25	37.25	37.25	37.25	38.28	37.25	23.97	24.6
SPP South - Energy Price - 1H2023	1249	6/2/2026	6/2/2026	21.42	23.3	23.9	23.3	23.3	23.3	31.86	35.74	36.13	36.38	38.21	38.3	38.3	38.3	38.3	38.3	38.3	38.3	39.74	39.74	39.74	38.3	25.47	25.9
SPP South - Energy Price - 1H2023	1250	6/3/2026	6/3/2026	25.37	24.52	24.21	24.21	24.17	24.21	36.64	32.53	36.5	35.57	36.5	36.5	37.74	36.5	36.77	38.46	36.77	36.77	36.77	36.77	36.5	31.82	21.68	20.74
SPP South - Energy Price - 1H2023	1251	6/4/2026	6/4/2026	20.4	20.4	20.4	20.4	20.4	20.41	30.42	30.3	30.23	30.23	30.23	30.23	30.23	30.23	34.72	30.23	30.23	30.23	30.23	30.23	34.72	30.23	6.01	4.42
SPP South - Energy Price - 1H2023	1252	6/5/2026	6/5/2026	6.54	1.61	6.01	4.31	5.76	7.03	7.88	20.74	25.44	30.03	33.88	34.5	34.7	34.7	34.7	34.7	34.7	34.5	34.49	34.5	34.5	34.5	21.99	20.24
SPP South - Energy Price - 1H2023	1253	6/6/2026	6/6/2026	20.24	10.02	20.24	20.24	20.24	20.24	26.06	26.06	26.44	28.3	29.03	29.03	29.03	34.06	37.06	33.14	31.85	29.03	29.03	28.31	28.31	28.3	20.24	20.24
SPP South - Energy Price - 1H2023	1254	6/7/2026	6/7/2026	20.24	21.99	21.99	21.99	21.99	21.99	26.06	26.06	26.06	26.06	26.06	26.06	28.3	28.3	26.06	26.06	28.31	28.31	28.31	28.77	29.03	28.31	21.99	21.99
SPP South - Energy Price - 1H2023	1255	6/8/2026	6/8/2026	24.28	22.31	22.42	22.3	22.85	24.28	37.35	37.35	37.35	38.3	38.3	37.65	38.3	38.3	37.65	38.3	37.65	37.65	38.72	37.65	37.35	37.35	24.91	24.91
SPP South - Energy Price - 1H2023	1256	6/9/2026	6/9/2026	25.62	26.37	27.07	24.39	26.66	26.37	38.99	40.34	40.34	40.04	41.87	41.92	40.44	41.92	46.31	44.46	41.74	40.74	41.12	42.54	43.14	42.14	28.57	26.37
SPP South - Energy Price - 1H2023	1257	6/10/2026	6/10/2026	24.77	24.77	27.04	27.04	27.26	27.04	38.73	40.8	41.2	42.05	42.94	45.28	44.85	45.74	53.08	53.06	53.06	45.51	41.98	45.51	42.99	41.98	29.87	28.95
SPP South - Energy Price - 1H2023	1258	6/11/2026	6/11/2026	28.53	27.16	27.16	27.16	27.16	27.16	39.74	40.07	40.45	41.92	44.59	44.59	51.54	52.01	52	52.54	52	41.88	44.59	42.56	41.93	40.44	27.16	25.62
SPP South - Energy Price - 1H2023	1259	6/12/2026	6/12/2026	24.85	24.85	24.26	24.85	24.85	25.39	37.28	37.28	35.51	37.28	37.28	37.28	37.28	37.57	37.04	37.28	37.28	32.8	32.51	37.28	37.28	37.28	25.83	23.38
SPP South - Energy Price - 1H2023	1260	6/13/2026	6/13/2026	22.24	22.24	22.24	22.24	22.24	22.24	28.63	28.63	28.63	31.17	28.63	28.63	31.99	31.99	31.17	31.99	31.99	31.17	31.99	31.99	31.99	31.99	24.21	24.21
SPP South - Energy Price - 1H2023	1261	6/14/2026	6/14/2026	22.24	22.24	22.24	22.24	22.24	22.24	28.63	27.97	31.17	31.17	31.17	31.17	31.99	31.99	31.99	31.17	31.17	31.17	31.17	31.99	33.88	31.99	24.21	24.21
SPP South - Energy Price - 1H2023	1262	6/15/2026	6/15/2026	24.21	24.33	24.33	24.34	24.34	24.34	35.12	17	35.11	35.11	35.82	35.12	35.12	35.12	38.3	35.12	35.12	38.3	35.12	38.3	38.3	35.12	24.34	6.91
SPP South - Energy Price - 1H2023	1263	6/16/2026	6/16/2026	4.63	4.43	4.13	1.39	3.81	23.51	4.62	3.46	4.48	34.09	34.09	38.3	34.09	34.09	34.09	38.3	38.3	38.3	38.3	38.3	38.3	34.09	25.63	25.63
SPP South - Energy Price - 1H2023	1264	6/17/2026	6/17/2026	24.33	23.35	25.44	25.44	25.44	25.44	33.88	33.88	33.89	37.59	37.61	38.3	38.3	38.81	38.3	38.3	35.23	35.23	38.3	38.81	38.81	38.81	26.41	23.35
SPP South - Energy Price - 1H2023	1265	6/18/2026	6/18/2026	23.7	11.44	5.9	3.77	6.8	23.7	34.32	34.32	34.32	36.82	38.3	38.3	35.23	38.3	38.3	39.31	39.31	39.3	39.33	39.31	39.66	39.31	26.53	25.84
SPP South - Energy Price - 1H2023	1266	6/19/2026	6/19/2026	26.35	26.35	24.44	26.35	26.35	26.35	36.72	38.3	38.3	39.94	40.19	40.31	40.31	40.47	40.95	41.71	42	40.5	41.15	42.37	41.94	40.31	29.51	28.33
SPP South - Energy Price - 1H2023	1267	6/20/2026	6/20/2026	27.44	26.35	26.35	26.35	26.35	26.35	32.93	33.91	34.83	36.51	40.45	41.16	41.16	41.98	40.45	38.47	34.83	34.83	40.55	40.45	33.92	33.92	28.17	27.05
SPP South - Energy Price - 1H2023	1268	6/21/2026	6/21/2026	27.48	26.35	26.35	26.35	25.69	26.22	32.53	32.81	34.63	39.11	40.45	40.45	41.98	41.98	41.98	40.45	40.45	40.52	39.02	40.45	40.45	38.47	30.07	28.33
SPP South - Energy Price - 1H2023	1269	6/22/2026	6/22/2026	28.04	27.86	27.13	27.13	27.13	27.86	39	39.74	40.92	39.74	40.92	41.32	41.32	41.32	41.32	40.92	39.74	40.92	41.26	41.99	44.42	41.32	28.91	28.03
SPP South - Energy Price - 1H2023	1270	6/23/2026	6/23/2026	29.13	28.19	27.45	27.45	27.63	27.62	40.67	41.31	41.73	41.73	41.73	41.73	46.15	46.15	48.92	42.76	41.87	42.39	42.25	42.36	42.01	42.01	29.82	29.12
SPP South - Energy Price - 1H2023	1271	6/24/2026	6/24/2026	28.89	31.42	28.95	28.73	28.73	29.12	41.32	41.97	42.41	42	44.2	42.41	42.41	43.07	54.73	42.41	44.05	42.57	42.41	45.32	46.03	44.96	31.86	30.28
SPP South - Energy Price - 1H2023	1272	6/25/2026	6/25/2026	30.44	29.78	29.22	29.61	29.35	29.38	41.7	44.49	43.52	47.44	47.44	44.45	47.44	47.44	50.21	47.44	47.82	47.44	47.44	45.97	47.44	46.23	34.42	32.61
SPP South - Energy Price - 1H2023	1273	6/26/2026	6/26/2026	31.42	31.42	31.42	29.65	31.42	31.42	41.02	41.43	42.15	44.65	45.78	45.78	45.78	53.37	53.38	53.61	42.05	42.42	42.7	42.73	42.34	41.43	30.89	29.1
SPP South - Energy Price - 1H2023	1274	6/27/2026	6/27/2026	29.31	28.55	27.95	27.43	27.95	27.95	35.97	35.98	40.34	39.62	39.99	40.45	41.98	42.55	44.86	41.98	41.98	41.98	41.98	39.6	40.45	35.97	27.21	27.21
SPP South - Energy Price - 1H2023	1275	6/28/2026	6/28/2026	27.21	27.21	27.21	27.43	27.21	27.21	35.03	35.03	35.55	35.65	35.83	36.29	37.96	38.39	40.45	39.99	39.8	38.91	37.76	35.98	35.98	35.97	27.21	25
SPP South - Energy Price - 1H2023	1276	6/29/2026	6/29/2026	25.74	23.61	23.61	25.1	25.74	25.74	39.18	39.17	39.03	39.18	39.18	39.53	39.53	39.53	39.18	39.18	39.18	38.3	38.3	38.3	38.3	34.22	23.61	23.61
SPP South - Energy Price - 1H2023	1277	6/30/2026	6/30/2026	7.49	24.07	24.07	9.04	24.07	26.26	38.3	38.92	39.65	39.83	39.83	39.83	40.2	39.83	40.28	40.2	40.2	39.83	39.83	40.2	40.2	40.2	26.96	26.82
SPP South - Energy Price - 1H2023	1278	7/1/2026	7/1/2026	29.88	28.33	28.33	29.98	30.16	29.46	44.18	44.18	43.73	44.18	44.18	47.85	45.46	46.17	44.56	44.18	44.87	44.18	44.18	43.73	44.47	44.18	29.08	26.89
SPP South - Energy Price - 1H2023	1279	7/2/2026	7/2/2026	22.25	22.25	22.25	20.53	22.25	21.09	34.08	35.99	36.41	36.42	36.42	36.56	38.29	43.73	45.38	43.73	36.56	37.02	39.22	36.56	36.56	36.56	22.8	21.75
SPP South - Energy Price - 1H2023	1280	7/3/2026	7/3/2026	28.23	28.23	28.23	28.23	28.98	29.37	44.04	44.05	45	45.59	45.85	47.47	56.94	56.94	56.95	56.94	56.93	56.94	56.98	49.66	50.4	46.77	32.06	33.59
SPP South - Energy Price - 1H2023	1281	7/4/2026	7/4/2026	30.55	29.22	28.98	28.97	30.06	29.04	39	39.33	43.54	39.55	45.68	47.28	52.08	49.07	49.07	53.5	49.07	50.06	47.28	44.83	42.48	40.85	31.98	31.12
SPP South - Energy Price - 1H2023	1282	7/5/2026	7/5/2026	30.54	29.72	30.28	28.98	28.98	28.98	37.99	37.99	38.53	42.39	39	46.03	45.9	47.28	47.28	47.28	47.28	41.58	46.03	46.03	44.58	45.1	33.08	30.23
SPP South - Energy Price - 1H2023	1283	7/6/2026	7/6/2026	30.67	30.67	30.67	30.67	30.67	30.83	45.53	46.13	46.13	46.59	50.19	59.74	62.27	60.5	60.68	60.68	51.39	51.9	55.86	46.93	50.21	49.63	32.56	32.87
SPP South - Energy Price - 1H2023	1284	7/7/2026	7/7/2026	32.79	31.11	30.29	30.29	31.92	31.11	47.14	48.3	51.36	59.7	60.5	60.93	61.43	61.48	63.47	64.95	64.95	61.58	61.52	55.18	60.73	60.73	41.78	40.21
SPP South - Energy Price - 1H2023	1285	7/8/2026	7/8/2026	36.93	35.12	34.16	34.15	35.12	35.12	48.63	50.57	56.62	55.87	60.99	64.19	64.51	61.16	60.43	61.04	60.44	61.11	61.06	60.94	55.6	60.44	39.43	36.45
SPP South - Energy Price - 1H2023	1286	7/9/2026	7/9/2026	35.19	33.06	33.21	35.12	35.12	35.54	47.56	47.81	51.13	52.82	57.65	53.03	58.89	58.89	62.96	59.56	62.96	61.84	59.56	59.56	51.87	58.89	45.09	35.54
SPP South - Energy Price - 1H2023	1287	7/10/2026	7/10/2026	36.45	35.14	35.12	35.12	32.23	35.12	45.4	46.92	51.28	53.89	58.21	58.31	61.3	60.97	62.41	62.41	67.63	62.45	59.69	58.34	58.42	58.3	41.95	42.29
SPP South - Energy Price - 1H2023	1288	7/11/2026	7/11/2026	36.69	37.39	36.45	36.45	36.45	35.64	47.28	47.28	47.28	47.3	48.97	49.07	49.07	49.07	60.26	60.26	60.26	60.26	60.26	60.26	53.18	54.3	36.55	35.12
SPP South - Energy Price - 1H2023	1289	7/12/2026	7/12/2026	35.12	32.84	31.9	32.84	32.84	33.3	43.78	44.01	44.28	44.21	47.9	48.49	49.07	51.43	54.78	49.07	57.64	50.97	49.07	51.79	49.07	47.72	33.75	33.05
SPP South - Energy Price - 1H2023	1290	7/13/2026	7/13/2026	34.17	31.09	30.79	30.79	30.8	31.09	46.74	46.53	46.74	48.42	48.41	48.42	49.52	46.29	46.74	47.53	46.29	46.74	46.74	46.74	46.74	46.74	30.79	31.12
SPP South - Energy Price - 1H2023	1291	7/14/2026	7/14/2026	30.45	31.28	31.28	31.28	31.28	31.42	46.89	48.18	47.73	48.24	52.34	59.75	61.01	61.01	61.02	61.11	59.75	54.41	49.23	50.95	49.75	47.94	34	33.44
SPP South - Energy Price - 1H2023	1292	7/15/2026	7/15/2026	33.52	32.91	32.61	32.48	32.19	31.84	47.49	47.49	47.49	47.96	47.02	48.29	51.5	52.5	49.82	52.22	49.34	52.27	53.41	52.5	47.49	47.49	31.47	31.09
SPP South - Energy Price - 1H2023	1293	7/16/2026	7/16/2026	31.67	31.59	31.59	32.05	31.86	31.89	45.61	47.75	45.82	48.05	49.3	50.78	51.96	54.15	49.51	52.21	48.85	48.34	48.8	55.94	48.34	51.96	35.9	33.95
SPP South - Energy Price - 1H2023	1294	7/17/2026	7/17/2026	34.3	30.63	30.63	30.63	30.63	31.46	46.39	47.89	47.91	52.62	54.53	53.2	49.42	53.72	53.25	52.51	52.34	53.39	53.51	54.11	54.23	54.99	36.45	34.79
SPP South - Energy Price - 1H2023	1295	7/18/2026	7/18/2026	34.3	33.84	33.51	32.24	31.46	31.46	42.57	44.54	47.28	47.37	45.51	44.67	49.07	53.34	53.65	53.71	53.53	49.07	54.6	48.43	47.28	46.1	34.79	33.36
SPP South - Energy Price - 1H2023	1296	7/19/2026	7/19/2026	30.63	28.56	29.17	29.19	31.46	30.63	39.2	41.24	42.35	42.04	42.35	43.44	42.35	42.88	42.35	46.83	42.35	42.35	42.35	47.28	49.44	49.27	35.12	33.95
SPP South - Energy Price - 1H2023	1297	7/20/2026	7/20/2026	33.96	32.12	30.21	31.86	31.81	31.18	45.57	47.47	51.34	53.61	58.58	59.12	59.13	59.81	59.89	59.91	59.42	61.82	59.12	55.46	59.13	58.55	39.34	36.45
SPP South - Energy Price - 1H2023	1298	7/21/2026	7/21/2026	34.3	34.89	32.52	32.07	33.53	33.3	47.16	51.06	54.98	55.14	52.78	59.57	59.66	59.56	59.56	57.69	63.51	51.49	59.56	52.4	52.39	55.92	36.01	31.95
SPP South - Energy Price - 1H2023	1299	7/22/2026	7/22/2026	30.01	30.01	30.01	30.01	30.01	29.37	43.73	43.73	45.32	45.32	45.74	48.84	50.87	45.71	47.9	47.91	58.76	46.8	55.41	55.72	45.74	47.83	31.67	30.76
SPP South - Energy Price - 1H2023	1300	7/23/2026	7/23/2026	29.39	30.8	29.39	30.16	29.39	32.13	44.55	44.55	46.39	47.35	47.85	57.44	50.4	49.88	57.67	57.65	49.41	49.54	49.81	53.71	57.26	52.99	35.12	33.2
SPP South - Energy Price - 1H2023	1301	7/24/2026	7/24/2026	29	31.09	31.25	30.81	30.09	29.56	44.46	45.8	48.65	51.68	52.73	54.73	56.98	53.69	56.98	56.99	56.99	56.98	56.99	53.59	53.52	48.81	35.12	34.73
SPP South - Energy Price - 1H2023	1302	7/25/2026	7/25/2026	32.32	31.96	30.46	30.39	31.81	31.74	42.69	42.67	42.32	44.81	46.07	48.71	51.33	47.28	49.76	49.32	49.07	49.07	49.07	49.07	49.07	46.68	32.01	29
SPP South - Energy Price - 1H2023	1303	7/26/2026	7/26/2026	29	29	28.25	29	29.75	29	39.04	39.04	39.04	39.04	39.04	45.5	46.75	47.28	49.11	49.07	49.97	47.28	47.28	47.28	46.84	46.75	34.02	30.58
SPP South - Energy Price - 1H2023	1304	7/27/2026	7/27/2026	30.33	28.06	28.8	30.06	29.01	29.22	44.21	43.84	43.84	44.21	45.38	48.01	54.72	48.51	53.94	53.77	55.73	55.24	56.63	54.76	50.53	46.13	34.75	29.47
SPP South - Energy Price - 1H2023	1305	7/28/2026	7/28/2026	29.47	30.34	29.2	29.46	28.95	29.2	44.33	44.71	44.71	48.38	49.12	46	52.63	56.82	57.13	54.32	55.71	57	56.63	51.81	49.12	47.76	34.47	34.42
SPP South - Energy Price - 1H2023	1306	7/29/2026	7/29/2026	31.26	29.93	29.5	28.73	29.5	29.5	44.69	45.09	46.24	49.58	52.85	56.77	56.95	57.38	57.8	57.88	57.89	57.62	57.19	57.44	49.8	46.19	34.84	35.12
SPP South - Energy Price - 1H2023	1307	7/30/2026	7/30/2026	29.82	30.2	33.48	32.84	33.27	33.98	49.45	45.49	46.63	53.51	57.36	58.42	58.43	59.58	58.43	60.16	58.43	58.43	58.17	58.2	57.98	55.31	35.12	35.12
SPP South - Energy Price - 1H2023	1308	7/31/2026	7/31/2026	31.31	35.12	30.27	34.9	35.12	35.73	45.73	45.38	49.3	53.81	51.91	49.76	57.23	57.96	60.57	59.27	58.54	57.95	57.95	57.74	51.8	49.66	35.12	30.63
SPP South - Energy Price - 1H2023	1309	8/1/2026	8/1/2026	33.75	32.38	32.38	32.2	32.38	31.54	35.95	38.29	42.45	43.55	46.9	49.38	53.27	53.66	53.96	54.18	52.87	45.88	50.62	43.1	42.45	42.45	33.61	33.85
SPP South - Energy Price - 1H2023	1310	8/2/2026	8/2/2026	32.38	32.92	32.38	31.73	32.38	32.16	35.24	35.02	35.02	35.95	37.35	43.1	43.1	44.73	47.88	46.98	50.41	47.88	49.47	49.97	46.25	44.73	38.23	35.06
SPP South - Energy Price - 1H2023	1311	8/3/2026	8/3/2026	33.8	33.06	32.66	31.7	31.88	34.42	41.9	42.1	44.36	45.46	52.32	53.65	53.66	54.87	54.38	55.99	56.98	56.15	54.29	54.87	53.53	53.43	39.4	42.76
SPP South - Energy Price - 1H2023	1312	8/4/2026	8/4/2026	40.28	39.4	38.81	35.93	37.02	38.85	45.98	48.03	47.97	50.92	56.52	57.03	59.05	60.87	61.71	64.78	63.25	63.97	61.2	58.25	57.72	56.99	44.29	40.28
SPP South - Energy Price - 1H2023	1313	8/5/2026	8/5/2026	38.81	34.6	34.6	34.6	38.81	38.81	45.69	45.53	45.27	51.73	57.37	57.7	58.1	58.57	58.65	58.65	58.64	58.09	53.48	57.29	52.27	49.82	38.81	38.35
SPP South - Energy Price - 1H2023	1314	8/6/2026	8/6/2026	36.87	35.95	34.37	34.1	35.02	35.49	45.12	45.08	49.48	46.06	52.64	54.05	55.81	58.3	50.96	58.73	58.73	58.5	58.05	53.77	46.57	46.22	37.96	37.36
SPP South - Energy Price - 1H2023	1315	8/7/2026	8/7/2026	36.5	35.77	35.36	34.81	37.5	38.81	44.86	44.86	45.27	45.31	45.54	45.84	50.1	54.8	56.01	55.54	49.75	55.46	54.66	53.63	46.34	45.57	38.81	37.18
SPP South - Energy Price - 1H2023	1316	8/8/2026	8/8/2026	36.5	35.77	35.36	34.81	34.81	34.81	38.66	38.65	39.94	40.61	38.66	43.1	45.76	45.76	44.73	44.73	44.73	45.76	43.1	43.1	45.76	43.1	40.27	37.18
SPP South - Energy Price - 1H2023	1317	8/9/2026	8/9/2026	36.97	36.88	38.14	36.97	37.5	36.75	40.85	40.61	41.2	43.1	44.46	45.76	45.76	51.62	49.84	47.92	48.99	49.19	46.23	46.27	45.89	43.54	37.74	37.18
SPP South - Energy Price - 1H2023	1318	8/10/2026	8/10/2026	35.34	35.8	35.15	35.15	35.99	38.81	45.68	45.68	46.22	50.55	52.75	58.33	58.06	58.44	58.91	58.91	57.71	54.46	50.55	51.21	50.14	46.23	37.83	36.62
SPP South - Energy Price - 1H2023	1319	8/11/2026	8/11/2026	36.08	35.34	34.93	34.37	35.96	36.08	45.25	45.28	45.28	45.35	48.14	49.45	56.8	53	56.11	57.67	48.32	45.59	45.58	46.52	46.86	45.54	36.49	36.75
SPP South - Energy Price - 1H2023	1320	8/12/2026	8/12/2026	31.82	31.08	30.68	29.63	30.15	29.89	39.13	39.13	39.13	39.13	39.13	39.4	39.4	39.4	44.82	39.48	42.93	41.59	43.24	42.89	39.4	39.4	29.03	28.68
SPP South - Energy Price - 1H2023	1321	8/13/2026	8/13/2026	26.16	26.16	26.16	26.16	26.16	26.16	35.66	35.66	35.66	35.83	35.83	35.83	38.59	38.59	42.12	42.38	41.59	41.67	41.59	41.59	41.59	36.77	29.4	29.66
SPP South - Energy Price - 1H2023	1322	8/14/2026	8/14/2026	25.74	25.11	25.74	25.74	25.74	25.74	35.21	35.37	35.36	38.02	35.36	35.37	38.02	38.02	41.59	41.59	41.59	41.59	41.67	41.59	35.87	35.87	27.5	27.32
SPP South - Energy Price - 1H2023	1323	8/15/2026	8/15/2026	25.74	25.74	25.74	25.74	25.74	25.74	28.58	28.58	28.58	31.36	31.36	40.75	41.05	43.53	43.83	44.05	44.05	43.1	41.06	33.94	31.41	31.36	27.3	26.32
SPP South - Energy Price - 1H2023	1324	8/16/2026	8/16/2026	25.74	25.74	25.74	25.74	25.74	25.74	28.43	28.58	28.58	28.58	29.86	37.77	28.58	39.82	33.43	33.41	31.25	32.72	42.39	42.54	38.9	36.92	29.03	29.24
SPP South - Energy Price - 1H2023	1325	8/17/2026	8/17/2026	34.24	33.5	32.21	32.21	31.95	32.21	42.09	42.09	42.09	42.45	42.45	43.87	44.43	44.6	46.63	45.49	45.48	43.15	46.63	45.48	45.48	42.52	34.65	33.46
SPP South - Energy Price - 1H2023	1326	8/18/2026	8/18/2026	36.41	35.67	35.27	34.71	34.12	34.7	44.74	43.13	44.64	45.19	45.28	47.28	49.35	50.42	49.96	55.56	49.65	50.05	49.92	50.08	47.75	46.2	36.66	35.24
SPP South - Energy Price - 1H2023	1327	8/19/2026	8/19/2026	37.25	36.51	36.1	35.54	34.95	35.98	45.74	45.41	45.34	45.88	46.24	46.55	51.24	51.93	52.04	50.29	51.2	51.55	59.15	54.63	50.3	46.79	37.66	36.62

SPP South - Energy Price - 1H2023	1328	8/20/2026	8/20/2026	36.97	36.23	35.83	35.35	38.46	38.81	45.43	45.43	45.43	46.54	49.23	51.41	50.96	52.48	51.62	53.72	59.35	59.22	59.76	59.1	53.72	52.26	43.43	40.28
SPP South - Energy Price - 1H2023	1329	8/21/2026	8/21/2026	38.81	38.81	39.65	38.81	38.81	39.65	45.66	44.87	44.75	44.75	53.08	56.84	56.71	57.09	60	58	57.97	57.39	57.4	51.84	51.58	50.43	39.4	38.21
SPP South - Energy Price - 1H2023	1330	8/22/2026	8/22/2026	36.93	36.93	35.39	35.34	36.93	36.93	41.9	43.1	39.71	43.1	46.01	49.65	48.72	56.43	51.91	56.88	56.88	60.18	56.88	50.1	50.97	52.07	39.39	40.28
SPP South - Energy Price - 1H2023	1331	8/23/2026	8/23/2026	38.81	37.42	35.39	34.62	34.15	34.42	41.9	39.32	44.09	45.92	50.89	55.33	55.97	56.36	53.79	56.88	56.88	56.88	56.88	52.16	50.8	49.8	40.28	39.65
SPP South - Energy Price - 1H2023	1332	8/24/2026	8/24/2026	38.81	37.8	36.96	39.65	38.06	40.28	46.65	53.47	55	56.87	57.83	58.11	61.09	60.44	61.85	61.85	61.85	61.76	58.39	58.36	55.68	54.96	46.55	39.65
SPP South - Energy Price - 1H2023	1333	8/25/2026	8/25/2026	37.99	37.25	36.25	35.68	35.83	36.65	46.43	48.26	46.66	54.58	59.21	58.45	59.12	58.16	60.45	59.96	52.04	53.29	54.52	53.89	51.46	50.74	38.81	38.81
SPP South - Energy Price - 1H2023	1334	8/26/2026	8/26/2026	38.81	35.95	35.95	37.14	35.95	37.27	46.07	46.33	46.56	53.93	59.54	60.15	60.66	64.22	68.9	68.9	68.95	64.22	66.17	64.07	61.27	60.01	53.71	44.28
SPP South - Energy Price - 1H2023	1335	8/27/2026	8/27/2026	40.28	39.04	37.42	38.81	38.81	40.28	51.04	52	56	54.9	55.49	60.86	61.51	62.51	64.44	64.96	63.66	62	61.47	61.51	60.85	54.05	45.06	40.3
SPP South - Energy Price - 1H2023	1336	8/28/2026	8/28/2026	40.01	40	38.81	40.28	40.5	40.53	52.91	56.22	60.25	60.46	61.05	63.73	62.18	61.48	63.73	69.21	64.54	64.49	61.13	59.7	52.31	53.22	40.68	40.42
SPP South - Energy Price - 1H2023	1337	8/29/2026	8/29/2026	38.81	38.81	38.81	38.81	38.81	38.81	43.1	43.1	44.42	47.99	56.36	59.31	59.95	59.95	59.95	63.37	63.36	59.94	59.95	59.94	51.84	46.28	38.81	38.81
SPP South - Energy Price - 1H2023	1338	8/30/2026	8/30/2026	38.81	38.81	38.04	37.57	38.81	38.81	43.1	43.1	43.1	43.66	44.42	47.59	57.6	56.95	52.64	54.57	48.43	43.1	47.72	47.59	47.59	44.73	38.81	38.81
SPP South - Energy Price - 1H2023	1339	8/31/2026	8/31/2026	34.13	34.13	31.97	31.97	34.13	34.13	41.59	39.92	38.98	41.59	43.16	42.57	42.41	48.2	44.35	49.59	49.59	49.59	48.58	47.36	49.59	49.59	38.81	38.81
SPP South - Energy Price - 1H2023	1340	9/1/2026	9/1/2026	33.82	34.95	34.99	34.88	34.84	36.45	45.19	45.14	44.31	44.99	46.2	47.22	49.46	54.74	54.97	55.05	53.2	53.2	51.33	47.22	47.15	43.29	35.7	35.7
SPP South - Energy Price - 1H2023	1341	9/2/2026	9/2/2026	34.73	34.73	31.44	31.44	34.62	31.44	42.1	42.09	41.11	41.11	41.11	42.09	42.1	42.09	42.5	42.5	42.5	52.99	45.66	46.28	44.96	42.1	33.11	31.44
SPP South - Energy Price - 1H2023	1342	9/3/2026	9/3/2026	31.31	31.31	31.31	31.31	31.31	35.46	42.35	40.25	41.11	41.91	41.95	40.16	39.62	42.35	42.35	43.38	44.37	44.72	54.31	46.75	45.77	43.42	37.05	35.7
SPP South - Energy Price - 1H2023	1343	9/4/2026	9/4/2026	36.73	37.05	34.38	35.2	36.47	37.05	46.41	46.34	45.06	48.49	47.29	50.72	48.88	54.12	57.53	57.86	54.77	54.77	54.12	49.58	51.93	47.4	35.7	33.78
SPP South - Energy Price - 1H2023	1344	9/5/2026	9/5/2026	33.27	35.7	35.7	34.27	31.06	33.27	52.99	52.99	54.38	60.9	63.2	79.06	79.45	79.45	79.45	79.57	79.57	71.33	78.34	78.58	70.27	73.94	35.7	31.06
SPP South - Energy Price - 1H2023	1345	9/6/2026	9/6/2026	31.06	31.06	31.06	31.06	31.06	31.06	52.99	51.6	52.99	52.99	60.9	62.03	63.2	79.17	79.14	79.57	66.46	71.33	65.5	66.67	70.27	63.2	34.14	33.47
SPP South - Energy Price - 1H2023	1346	9/7/2026	9/7/2026	31.06	32.68	31.06	31.06	34.32	34.25	42.08	42.08	41.68	43.57	43.12	46.57	46.41	44.59	52.66	46.41	43.85	44.08	50.75	46.41	44.93	42.08	35.7	31.06
SPP South - Energy Price - 1H2023	1347	9/8/2026	9/8/2026	31.99	31.14	31.99	31.14	31.14	31.99	42.69	42.69	41.11	42.69	42.7	43.61	46.14	45.84	44.74	45.19	45.74	43.49	46.52	44.35	43.48	42.69	31.99	31.14
SPP South - Energy Price - 1H2023	1348	9/9/2026	9/9/2026	31.54	31.54	31.54	31.54	31.54	32.4	43.59	43.15	43.59	45.73	48.25	55.97	48.25	56.23	48.25	45.77	48.25	45.68	48.25	48.25	48.25	43.59	37.05	35.7
SPP South - Energy Price - 1H2023	1349	9/10/2026	9/10/2026	32.88	31.83	31.83	31.83	35.33	35.7	42.95	42.95	42.95	42.52	42.95	43.12	42.95	42.96	42.95	42.95	42.52	43.38	42.95	42.95	42.52	42.52	31.83	31.83
SPP South - Energy Price - 1H2023	1350	9/11/2026	9/11/2026	30.14	27.63	30.14	30.14	30.14	30.14	41.11	39.62	39.62	38.44	39.62	39.62	39.62	39.62	41.11	41.11	39.62	41.11	41.55	41.55	41.11	41.11	30.14	29.05
SPP South - Energy Price - 1H2023	1351	9/12/2026	9/12/2026	27.63	28.47	27.63	28.47	30.14	30.14	51.42	51.41	47.13	51.42	51.42	51.42	51.42	52.8	52.8	52.8	52.8	52.8	62.43	60.9	60.9	52.8	30.14	27.63
SPP South - Energy Price - 1H2023	1352	9/13/2026	9/13/2026	27.63	27.63	27.63	27.63	27.63	27.63	48.04	48.5	48.39	47.17	51.42	55.13	58.68	60.9	60.9	60.9	58.33	60.9	60.9	58.33	55.79	52.97	30.95	30.95
SPP South - Energy Price - 1H2023	1353	9/14/2026	9/14/2026	29.81	30.61	30.61	30.61	30.61	30.61	41.18	41.18	41.19	41.18	41.18	41.56	42.35	45.78	45.78	45.78	45.78	45.78	45.78	45.78	41.56	41.56	30.61	30.61
SPP South - Energy Price - 1H2023	1354	9/15/2026	9/15/2026	29.34	29.34	30.13	30.13	29.34	30.13	41.01	41.01	39.62	39.62	39.62	40.65	40.65	40.65	41.01	39.62	40.65	41.01	41.01	40.65	39.62	36.51	26.91	26.91
SPP South - Energy Price - 1H2023	1355	9/16/2026	9/16/2026	27.02	27.02	27.02	27.02	27.02	27.02	37.9	38.56	38.11	37.7	35.62	35.62	35.62	35.62	39.62	39.62	39.62	40.78	43.72	40.78	39.62	39.62	29.46	29.46
SPP South - Energy Price - 1H2023	1356	9/17/2026	9/17/2026	29.12	29.04	29.51	29.12	28.8	28.02	39.62	38.81	36.21	37.95	36.6	36.21	39.62	39.62	39.62	39.62	41.11	41.84	44.66	43.35	41.84	41.45	31.16	30.85
SPP South - Energy Price - 1H2023	1357	9/18/2026	9/18/2026	30.19	30.19	30.19	30.19	30.19	30.19	41.08	40.72	40.72	40.72	40.72	39.62	40.72	40.72	37.46	39.62	40.12	40.72	39.62	39.62	39.62	39.62	26.97	26.97
SPP South - Energy Price - 1H2023	1358	9/19/2026	9/19/2026	26.97	14.94	26.96	26.37	19.33	11.38	46	3.39	2.7	6.94	3.3	2.93	3.65	12.96	13.9	10.26	23.18	46.01	50.16	50.16	50.16	50.16	26.97	26.97
SPP South - Energy Price - 1H2023	1359	9/20/2026	9/20/2026	15.81	13.04	14.18	5.98	5.41	4.91	7.57	0	0	0	3.3	2.93	13.11	3.03	4.03	46	46	46.01	50.16	46.01	46	46	5.01	3.91
SPP South - Energy Price - 1H2023	1360	9/21/2026	9/21/2026	1.97	1.97	2.01	3.91	1.86	11.17	10.47	10.47	30.38	34.64	35.73	35.74	35.74	35.95	35.95	39.62	36.7	40.07	41.11	39.62	35.95	35.95	25.66	25.03
SPP South - Energy Price - 1H2023	1361	9/22/2026	9/22/2026	27.58	27.58	27.58	27.58	27.58	28.31	38.95	38.64	38.95	38.95	38.95	39.62	40.06	41.11	42.61	49.59	49.77	48.78	42.61	41.11	41.11	39.62	27.58	27.58
SPP South - Energy Price - 1H2023	1362	9/23/2026	9/23/2026	25.28	25.28	27.52	25.28	27.52	27.52	38.88	38.88	38.88	38.58	38.88	38.88	38.88	39.62	39.62	39.62	38.88	42.53	42.53	41.11	39.62	38.58	27.52	25.28
SPP South - Energy Price - 1H2023	1363	9/24/2026	9/24/2026	26.8	26.8	26.8	29.22	29.22	29.22	40.51	37.93	39.97	39.62	40.87	40.51	40.87	40.87	40.87	40.87	40.51	51.57	49.7	43.36	40.87	40.51	30	29.22
SPP South - Energy Price - 1H2023	1364	9/25/2026	9/25/2026	27.4	26.42	27.4	27.4	27.4	28.12	38.73	38.44	38.44	38.44	38.44	33.52	33.52	33.52	33.52	37.25	33.52	38.73	38.44	35.51	33.58	33.63	25.17	19.82
SPP South - Energy Price - 1H2023	1365	9/26/2026	9/26/2026	22	14.94	11	5.98	5.41	4.91	7.57	7.36	3.43	2.76	3.3	0	0	3.03	3	28.08	7.79	42.93	42.93	42.93	11.56	11.34	2.59	1.98
SPP South - Energy Price - 1H2023	1366	9/27/2026	9/27/2026	2.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.79	6.14	42.93	42.93	23.42	20.85	30.3	0	0
SPP South - Energy Price - 1H2023	1367	9/28/2026	9/28/2026	0	0	0	0	0	3.05	3.76	2.97	2.72	10.41	9.3	12.6	26.94	31.63	31.63	31.63	36.32	36.32	39.62	36.55	36.55	36.32	23.49	23.49
SPP South - Energy Price - 1H2023	1368	9/29/2026	9/29/2026	26.84	26.84	26.84	26.84	26.84	26.84	35.42	35.42	15.18	16.1	35.42	40.56	39.62	39.62	39.62	39.62	40.56	41.59	43.15	40.92	40.92	40.56	29.42	29.27
SPP South - Energy Price - 1H2023	1369	9/30/2026	9/30/2026	29.42	29.42	26.98	29.42	29.42	29.42	40.73	40.74	41.1	41.1	41.1	41.1	41.1	42.44	41.65	41.43	41.76	42.14	42.81	41.4	40.73	40.73	29.42	26.98
SPP South - Energy Price - 1H2023	1370	10/1/2026	10/1/2026	23.33	21.03	21.03	23.97	23.33	23.97	35.23	36.7	32.13	32.04	31.25	31.79	31.25	33.37	32.68	33.16	33.95	35.73	33.95	33.46	31.25	31.25	21.03	21.03
SPP South - Energy Price - 1H2023	1371	10/2/2026	10/2/2026	21.29	21.29	21.29	21.29	21.29	21.29	31.59	31.59	31.59	31.59	31.59	31.59	31.59	32.45	31.59	31.59	31.59	32.62	33.27	32.28	31.59	31.59	21.29	21.29
SPP South - Energy Price - 1H2023	1372	10/3/2026	10/3/2026	21.29	21.29	21.29	21.29	21.29	21.29	29.51	27.2	26.62	24.1	1.78	1.9	1.9	1.44	0	1.43	10.79	11.85	17.22	13.02	2.6	4.68	2.54	2.16
SPP South - Energy Price - 1H2023	1373	10/4/2026	10/4/2026	2.19	2.13	4.17	8.67	8.88	21.29	29.51	10.12	8.35	2.31	2.24	2.69	3.43	0	12.03	12.89	29.51	33.64	33.64	32.75	32.75	29.51	21.29	21.29
SPP South - Energy Price - 1H2023	1374	10/5/2026	10/5/2026	22.16	16.36	20.21	20.21	20.21	22.4	33.95	30.77	30.7	30.7	30.7	30.7	31.54	35.23	34.78	34.5	35.48	35.48	35.81	35.48	35.23	33.95	22.4	22.4
SPP South - Energy Price - 1H2023	1375	10/6/2026	10/6/2026	21.19	21.19	21.19	21.19	21.19	21.19	33.9	33.9	30.85	29.55	29.32	29.32	29.32	30.11	30.11	30.11	29.32	29.32	29.71	29.32	29.32	29.32	19.14	12.03
SPP South - Energy Price - 1H2023	1376	10/7/2026	10/7/2026	9.67	10.43	9.84	19.09	19.09	19.09	29.25	29.25	29.25	7.65	29.25	21.33	29.25	29.25	29.25	29.25	29.25	33.82	33.82	33.82	33.82	33.95	21.69	19.09
SPP South - Energy Price - 1H2023	1377	10/8/2026	10/8/2026	19.67	12.63	9.46	9.57	4.08	9.46	10.3	9.3	2.33	7.65	5.5	30	27.6	29.51	30	30	30	30	34.67	33.95	33.95	34.67	21.78	19.67
SPP South - Energy Price - 1H2023	1378	10/9/2026	10/9/2026	19.68	19.68	21.44	19.68	19.72	21.8	33.95	33.95	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	35.01	34.83	35.14	34.7	34.7	22.38	21.8
SPP South - Energy Price - 1H2023	1379	10/10/2026	10/10/2026	21.8	21.8	21.8	21.8	22.38	22.38	31.02	31.02	31.02	31.26	34.24	36.63	36.63	34.24	31.5	30.21	34.24	36.93	36.93	32.63	30.21	27.27	19.68	19.68
SPP South - Energy Price - 1H2023	1380	10/11/2026	10/11/2026	19.68	19.68	19.68	21.8	21.8	21.8	27.79	27.27	30.21	30.21	30.21	30.21	30.21	28.98	27.79	30.21	30.21	30.21	30.21	30.21	30.21	27.27	19.68	19.68
SPP South - Energy Price - 1H2023	1381	10/12/2026	10/12/2026	21.4	21.4	21.4	21.4	21.4	23.82	35.38	34.18	34.18	35.56	35.23	34.18	34.18	34.18	34.18	35.23	43.22	41.33	39.35	36.08	34.18	33.95	25.16	25.93
SPP South - Energy Price - 1H2023	1382	10/13/2026	10/13/2026	25.38	21.78	21.91	22.12	26.65	26.65	36.32	35.23	35.23	34.84	34.84	34.84	32.38	32.38	32.38	32.38	32.38	34.83	34.84	34.84	34.83	34.83	19.78	19.46
SPP South - Energy Price - 1H2023	1383	10/14/2026	10/14/2026	15.03	19.46	19.46	19.46	19.46	21.56	31.97	33.95	33.95	35.23	34.37	35.14	34.37	34.37	33.95	34.37	34.37	34.37	35.99	35.14	36.48	35.23	25.8	24.42
SPP South - Energy Price - 1H2023	1384	10/15/2026	10/15/2026	25.44	26.65	25.25	26.65	26.65	26.65	36.9	36.9	34.48	33.95	33.95	32.16	34.48	32.06	33.95	33.95	33.95	41.6	39.62	40.75	41.34	35.23	21.64	21.64
SPP South - Energy Price - 1H2023	1385	10/16/2026	10/16/2026	20.08	20.08	20.08	20.08	20.08	23.82	33.95	33.56	32.45	32.45	33.95	33.95	32.45	32.45	33.95	32.45	33.95	38.02	41.7	38.97	38.02	32.45	24.26	18.67
SPP South - Energy Price - 1H2023	1386	10/17/2026	10/17/2026	20.08	20.08	20.08	20.08	20.08	21.94	31.46	27.83	25.17	27.83	29.48	29.94	28.85	31.8	33.27	31.37	31.46	36.93	35.93	36.93	33.61	33.26	20.08	20.08
SPP South - Energy Price - 1H2023	1387	10/18/2026	10/18/2026	20.08	20.08	21.77	20.08	20.08	21.83	34.16	33.07	25.18	25.18	25.18	27.83	25.18	25.18	25.18	27.83	25.18	27.83	32.87	33.61	27.83	27.83	20.08	20.47
SPP South - Energy Price - 1H2023	1388	10/19/2026	10/19/2026	23.42	21.7	21.7	21.7	26.31	26.65	38.06	36.01	34.57	35.23	35.23	35.23	34.56	33.95	34.57	33.95	34.57	41.67	39.69	36.7	36.01	35.23	25.52	24.6
SPP South - Energy Price - 1H2023	1389	10/20/2026	10/20/2026	24.35	25.48	25	25.33	25.89	26.65	37.11	35.24	35.02	35.02	35.02	33.95	32.54	33.95	33.8	33.95	34.64	35.02	36.53	35.02	35.02	33.95	22.05	22.05
SPP South - Energy Price - 1H2023	1390	10/21/2026	10/21/2026	20.15	20.15	20.15	20.15	20.15	21.19	34.86	32.87	32.87	32.87	32.87	32.87	33.95	32.87	32.87	32.87	32.87	33.95	32.87	33.95	32.87	15.2	6.28	11.94
SPP South - Energy Price - 1H2023	1391	10/22/2026	10/22/2026	2.37	4.54	15.23	22.67	22.67	24.46	35.85	35.85	33.27	33.27	31.24	33.27	34.86	33.27	35.23	35.23	35.85	35.85	35.23	35.23	35.23	35.23	22.24	21.89
SPP South - Energy Price - 1H2023	1392	10/23/2026	10/23/2026	20.32	11.42	20.32	20.32	21.92	20.32	33.95	33.09	35.23	33.95	33.09	33.95	33.09	35.23	35.23	33.09	33.09	33.09	33.95	33.95	35.29	33.95	24.57	22.53
SPP South - Energy Price - 1H2023	1393	10/24/2026	10/24/2026	24.22	25.39	22.53	22.53	20.32	22.54	30.44	33.29	9.55	9.71	28.16	28.16	28.16	15.51	17.17	22.97	36.21	38.32	38.32	36.93	36.93	36.93	24.62	22.54
SPP South - Energy Price - 1H2023	1394	10/25/2026	10/25/2026	21.33	22.53	26.65	22.53	22.53	22.53	35.42	33.93	28.16	28.16	5.2	4	5.52	0	3.83	5.2	31.22	38.32	38.32	36.93	36.93	36.93	22.53	22.54
SPP South - Energy Price - 1H2023	1395	10/26/2026	10/26/2026	22.59	22.59	22.59	22.59	22.59	25.57	35.73	36.57	33.95	33.95	35.23	35.73	35.35	35.73	37.35	37.35	46.4	46.41	46.41	41.84	37.01	35.73	22.88	22.59
SPP South - Energy Price - 1H2023	1396	10/27/2026	10/27/2026	21.33	20.73	20.73	20.73	20.73	20.73	32.59	32.58	7.47	6.39	2.06	2.47	9.44	4.19	6.63	13.95	15.8	10.89	12.02	13.07	11.63	7.11	2.54	2.85
SPP South - Energy Price - 1H2023	1397	10/28/2026	10/28/2026	1.59	1.82	1.37	1.56	3.38	20.62	32.44	32.44	32.44	32.44	33.95	36.09	36.09	36.09	36.09	35.23	35.23	35.23	34.88	33.95	33.95	32.44	20.62	20.62
SPP South - Energy Price - 1H2023	1398	10/29/2026	10/29/2026	19.93	19.93	8.55	1.56	19.93	19.93	29.83	29.83	29.83	29.83	29.83	29.57	29.83	29.83	29.83	29.83	30.08	29.83	8.81	29.83	29.83	6.97	1.37	5.52
SPP South - Energy Price - 1H2023	1399	10/30/2026	10/30/2026	5.52	1.82	5.99	5.52	8.19	8.49	33.95	33.95	33.95	35.23	35.23	35.23	34.55	37.07	38.99	38.99	38.99	41.37	43.03	35.57	35.2	34.03	24.81	25.29
SPP South - Energy Price - 1H2023	1400	10/31/2026	10/31/2026	25.12	23.86	23.19	25.51	26.65	25.51	36.93	36.41	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	34.25	23.86	21.89
SPP South - Energy Price - 1H2023	1401	11/1/2026	11/1/2026	28.5	27.05	27.05	27.05	27.05	27.05	45.91	45.91	5.08	0	0	0	0	0	0	0	6.2	12.21	16.86	13.9	14.07	16.31	9.74	10.37
SPP South - Energy Price - 1H2023	1402	11/2/2026	11/2/2026	25.05	25.05	25.05	11.37	25.06	30.61	35.1	35.1	35.07	35.07	35.1	35.1	35.1	35.59	35.69	35.52	36.34	36.87	36.49	35.42	35.1	35.1	32.06	33.56
SPP South - Energy Price - 1H2023	1403	11/3/2026	11/3/2026	32.63	33.67	31.61	32.83	28.65	32.83	35.1	35.1	35.1	35.27	35.27	35.17	35.17	35.75	35.27	35.27	36.42	38.07	36.52	35.27	35.68	36.42	33.79	32.85
SPP South - Energy Price - 1H2023	1404	11/4/2026	11/4/2026	31.56	32.61	27.4	32.26	27.82	32.63	36.42	36.42	36.42	38.86	36.42	36.42	34.09	34.67	30.77	30.77	30.77	30.77	30.77	30.77	30.77	30.77	24.15	24.15
SPP South - Energy Price - 1H2023	1405	11/5/2026	11/5/2026	5.45	2.4	2.32	2.06	12.26	11.21	31.52	32.41	31.52	31.52	31.52	31.52	31.52	34.87	32.08	34.87	35.1	35.1	36.47	39.93	35.34	36.65	35.19	35.19
SPP South - Energy Price - 1H2023	1406	11/6/2026	11/6/2026	35.19	34.12	28.92	34.08	29.93	32.37	35.54	36.48	35.1	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	35.1	35.54	35.1	32.09	23.21	20.45	11.82
SPP South - Energy Price - 1H2023	1407	11/7/2026	11/7/2026	11.93	25.44	25.44	23.43	24.11	25.44	43.18	43.18	43.18	6.45	7.74	13.21	13.21	14.2	14.36	24.76	52.65	50.76	54.04	52.45	47.93	45.15	25.44	25.44
SPP South - Energy Price - 1H2023	1408	11/8/2026	11/8/2026	28.92	28.92	27.74	25.44	28.92	28.92	49.08	49.08	49.08	43.18	43.18	43.18	14.36	14.2	0	7.69	43.18	43.18	43.18	17.71	16.29	16.31	11.09	4.5
SPP South - Energy Price - 1H2023	1409	11/9/2026	11/9/2026	2.1	2.4	1.81	0.59	2.91	7.86	6.03	2.45	1.83	0	0	0	0	0	0	7.09	7.09	34.13	9.11	8.17	6.26	9.58	1.81	2.03
SPP South - Energy Price - 1H2023	1410	11/10/2026	11/10/2026	2.1	2.4	1.81	2.53	3.58	13.1	40.02	43.09	37	37	37	37	37	35.1	37	37	37	38.15	40.02	40.02	37	37	33.31	29.18

SPP South - Energy Price - 1H2023	1411	11/11/2026	11/11/2026	35.19	35.19	35.19	35.19	35.19	36.52	43.35	53.05	46.36	44.71	48.14	44.49	41.13	41.13	41.13	41.13	42.91	48.65	48.65	42.91	41.13	41.97	37.11	37.75
SPP South - Energy Price - 1H2023	1412	11/12/2026	11/12/2026	37.22	34.73	34.05	35.19	35.19	35.19	37.65	37.65	37.65	37.65	11.86	7.76	2.16	1.9	2.94	1.86	15.38	30.79	35.26	16.82	16.82	16.82	15.51	15.51
SPP South - Energy Price - 1H2023	1413	11/13/2026	11/13/2026	10.14	15.51	11.29	15.51	27.36	27.36	35.1	35.1	35.1	9.76	4.55	7.76	7.76	8.34	13.56	27.42	36.42	36.77	37.84	35.13	35.13	35.13	27.66	27.36
SPP South - Energy Price - 1H2023	1414	11/14/2026	11/14/2026	27.36	16.69	16.03	16.28	18.32	18.26	46.44	30.92	21.68	19.43	20.19	21.12	3.63	3.23	3.63	3.17	6.2	4.59	7.5	0	0	0	0	0
SPP South - Energy Price - 1H2023	1415	11/15/2026	11/15/2026	0	0	0	0	0	0	0	0	5.08	6.45	7.74	3.34	3.63	3.23	5.01	14.08	46.44	15.29	15.5	8.05	14.07	16.31	8.29	10.37
SPP South - Energy Price - 1H2023	1416	11/16/2026	11/16/2026	2.1	2.4	8.29	2.53	12.26	23.57	29.72	29.72	29.72	12.36	24.06	29.72	7.76	29.72	29.72	29.72	29.72	34.12	29.72	29.72	29.72	25.65	24.76	24.76
SPP South - Energy Price - 1H2023	1417	11/17/2026	11/17/2026	27.52	27.52	27.52	29	30.53	30.53	36.42	36.42	35.1	35.1	36.42	37.52	37.52	37.65	37.65	37.65	37.66	36.94	36.42	36.42	36.42	32.53	27.52	27.52
SPP South - Energy Price - 1H2023	1418	11/18/2026	11/18/2026	28.86	28.86	28.86	28.86	28.86	28.86	35.1	39.21	36.42	39.21	39.21	38.89	38.88	39.21	39.21	39.21	39.21	39.21	39.64	39.64	39.64	39.21	32.93	32.05
SPP South - Energy Price - 1H2023	1419	11/19/2026	11/19/2026	31.53	28.4	28.4	28.4	28.4	28.4	34.01	35.1	34.01	34.01	4.55	7.76	7.76	8.34	8.44	8.27	34.01	35.1	36.66	36.42	36.42	35.1	31.53	31.53
SPP South - Energy Price - 1H2023	1420	11/20/2026	11/20/2026	30.54	30.54	30.54	30.72	31.37	31.37	37.66	38.04	37.66	37.66	37.66	37.53	37.66	37.66	35.1	35.1	37.66	38.04	38.04	35.1	35.1	35.1	30.54	30.54
SPP South - Energy Price - 1H2023	1421	11/21/2026	11/21/2026	30.54	30.54	30.54	30.54	31.37	31.37	58.85	59.72	57.58	58.69	54.7	54.7	53.23	53.23	53.23	53.23	57.56	58.85	57.58	55.98	53.71	58.39	34.53	35.17
SPP South - Energy Price - 1H2023	1422	11/22/2026	11/22/2026	31.37	34.4	34.4	31.37	30.54	30.54	51.83	53.23	53.23	53.23	51.83	51.83	46.72	46.72	46.72	46.72	50.05	53.23	51.83	46.72	46.72	46.72	27.53	30.54
SPP South - Energy Price - 1H2023	1423	11/23/2026	11/23/2026	31.39	31.39	31.39	31.39	34.92	35.19	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.66	42.15	42.15	42.66	45.37	44.95	42.66	42.66	42.66	36.52	35.9
SPP South - Energy Price - 1H2023	1424	11/24/2026	11/24/2026	35.19	35.18	35.18	35.18	35.19	35.19	41.93	42.88	41.93	42.53	42.22	41.93	41.93	41.93	41.44	41.44	41.44	42.05	42.18	41.93	41.44	41.44	35.18	35.18
SPP South - Energy Price - 1H2023	1425	11/25/2026	11/25/2026	34.64	34.64	34.64	34.64	34.64	34.64	40.91	41.38	41.69	42.45	41.8	40.91	40.91	40.95	41.05	40.91	41.38	41.38	41.71	40.91	40.91	41.38	35.19	34.64
SPP South - Energy Price - 1H2023	1426	11/26/2026	11/26/2026	34.64	33.71	33.71	33.71	34.64	33.71	35.96	36.42	35.96	35.96	35.96	35.1	35.96	35.96	35.1	35.96	35.96	35.96	35.96	35.96	35.1	35.96	30.32	33.71
SPP South - Energy Price - 1H2023	1427	11/27/2026	11/27/2026	28.09	28.09	28.09	28.09	28.09	14.48	15.39	18.06	16.73	16.73	10.11	9.27	8.84	1.73	2.48	0	7.92	7.54	13.11	12.06	16.1	13.11	12.59	3.5
SPP South - Energy Price - 1H2023	1428	11/28/2026	11/28/2026	3.1	16.4	20.9	18.12	14.13	13	22.07	47.67	21.48	9.74	20.2	23.99	15.04	47.67	47.67	20.47	47.67	47.67	52.91	47.67	47.67	42.06	13.95	14.04
SPP South - Energy Price - 1H2023	1429	11/29/2026	11/29/2026	28.09	26.94	28.09	18.12	15.12	14.48	47.67	47.67	22.66	28.64	17.2	47.67	15.04	28.64	15.24	4.08	47.67	50.26	47.67	47.67	47.67	47.67	31.17	28.09
SPP South - Energy Price - 1H2023	1430	11/30/2026	11/30/2026	27.61	27.61	27.61	27.61	29.78	30.63	35.1	37.75	36.42	37.75	37.75	37.75	37.75	37.75	37.75	37.75	37.75	37.75	36.42	35.1	36.42	35.1	30.63	30.63
SPP South - Energy Price - 1H2023	1431	12/1/2026	12/1/2026	21.44	21.44	21.44	21.44	21.44	22.75	33.57	33.57	32.3	31.13	28.96	28.96	28.96	28.96	28.96	28.96	33.57	33.84	33.84	33.84	33.84	33.84	23.72	23.72
SPP South - Energy Price - 1H2023	1432	12/2/2026	12/2/2026	22.73	22.73	23.32	25.19	23.72	22.73	34.21	35.26	35.26	33.18	30.45	30.45	34.21	34.21	34.21	34.21	35.26	35.26	35.58	35.51	35.51	35.58	27.55	27.86
SPP South - Energy Price - 1H2023	1433	12/3/2026	12/3/2026	27.13	28.44	27	27	27	27	36.53	36.89	36.53	36.53	36.89	36.89	37.09	36.89	36.53	36.53	36.89	37.94	37.31	39.58	37.06	37.19	30.48	30.48
SPP South - Energy Price - 1H2023	1434	12/4/2026	12/4/2026	30.48	30.48	30.48	30.48	26.11	27.33	35.51	37.97	39.46	35.09	36.53	39.46	39.46	39.46	38.99	39.46	39.91	44.24	44.24	43.86	42.63	42.51	33.94	31.63
SPP South - Energy Price - 1H2023	1435	12/5/2026	12/5/2026	30.48	30.48	30.48	30.48	31.63	30.86	40.15	43.77	40.62	38.08	36.68	36.68	36.78	36.68	36.68	36.68	37.02	43.08	41.59	37.72	37.72	36.68	29.64	29.64
SPP South - Energy Price - 1H2023	1436	12/6/2026	12/6/2026	29.64	28.84	28.84	28.84	28.84	28.84	35.7	35.7	35.7	32.12	32.11	19.85	32.12	32.12	35.7	35.7	35.7	38.22	38.94	37.72	37.26	35.7	27.06	26.07
SPP South - Energy Price - 1H2023	1437	12/7/2026	12/7/2026	28.06	28.06	28.06	14.73	25.37	28.06	36.54	35.51	34.21	34.21	34.21	34.21	36.54	35.51	36.37	36.55	42.23	48.24	48.31	46.58	46.97	46.58	32.18	31.63
SPP South - Energy Price - 1H2023	1438	12/8/2026	12/8/2026	31.68	32.1	32.18	31.96	32.18	32.57	46.28	46.48	46.6	43.78	43.28	42.73	42.73	36.99	41.66	41.66	42.73	43.1	43.28	43.28	43.28	42.73	31.7	31.68
SPP South - Energy Price - 1H2023	1439	12/9/2026	12/9/2026	32.54	33.46	32.54	32.54	32.54	33.46	47.69	47.89	48.06	47.28	47.53	44.11	43.72	43.13	44.31	43.72	43.72	44.33	48.93	48.6	47.04	46.36	33.46	32.54
SPP South - Energy Price - 1H2023	1440	12/10/2026	12/10/2026	33.98	34.16	34.16	34.95	33.98	33.41	45.38	48.46	46.01	45.38	45.38	40.09	38.83	38.83	45.38	45.33	45.38	45.42	46.01	45.38	45.38	45.38	33.98	31.63
SPP South - Energy Price - 1H2023	1441	12/11/2026	12/11/2026	30.93	30.93	30.93	30.93	30.48	30.48	41.86	39.34	41.86	35.76	35.51	35.51	34.21	33.13	34.21	35.51	35.76	35.76	35.76	35.76	35.76	35.76	27.79	27.79
SPP South - Energy Price - 1H2023	1442	12/12/2026	12/12/2026	27.79	27.79	27.79	25.66	27.79	27.79	34.39	37.72	37.04	34.39	31.23	23.41	21.34	15.11	34.39	38.28	38.28	38.28	38.28	39.15	39.15	37.72	30.48	30.4
SPP South - Energy Price - 1H2023	1443	12/13/2026	12/13/2026	29.84	30.48	30.48	27.79	27.79	29.5	37.65	37.72	34.39	34.39	37.72	38.28	38.28	38.28	37.72	37.72	38.28	39.15	39.15	38.28	39.15	38.28	30.48	30.48
SPP South - Energy Price - 1H2023	1444	12/14/2026	12/14/2026	27.58	30.48	29.1	30.48	30.48	30.48	39.98	37.68	37.29	35.73	35.73	35.73	34.31	35.73	34.33	35.51	35.73	35.73	35.73	35.51	35.51	34.51	27.58	19.08
SPP South - Energy Price - 1H2023	1445	12/15/2026	12/15/2026	13.34	17.54	18.11	15.7	21.84	30.03	35.06	35.51	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	37.17	40.83	40.83	40.83	37.4	30.48	30.03
SPP South - Energy Price - 1H2023	1446	12/16/2026	12/16/2026	29.46	29.46	29.46	29.46	29.46	29.46	37.49	35.01	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	35.51	40.18	40.65	40.65	40.65	40.65	30.48	29.46
SPP South - Energy Price - 1H2023	1447	12/17/2026	12/17/2026	28.44	28.44	25.59	25.59	25.59	25.59	33.46	33.46	33.46	33.46	26.74	15.01	30.78	17.07	33.46	33.46	33.46	33.46	33.99	33.46	33.46	35.58	28.44	28.44
SPP South - Energy Price - 1H2023	1448	12/18/2026	12/18/2026	26.86	26.86	26.86	26.86	26.86	26.86	36.36	36.37	36.37	36.37	36.37	36.37	36.37	36.36	34.21	36.37	36.37	36.72	37.28	37.94	36.72	36.72	30.48	30.48
SPP South - Energy Price - 1H2023	1449	12/19/2026	12/19/2026	30.48	26.86	26.86	26.86	26.86	27.82	33.24	37.72	37.72	37.72	37.72	33.58	37.34	33.24	37.47	37.72	37.72	39.15	39.15	37.95	39.15	37.72	30.48	30.48
SPP South - Energy Price - 1H2023	1450	12/20/2026	12/20/2026	30.43	26.86	26.86	26.86	26.86	26.86	33.24	33.24	37.72	37.72	37.72	37.72	37.72	37	37.47	33.24	34.63	37.72	37.72	37.72	37.72	37.72	29.2	30.48
SPP South - Energy Price - 1H2023	1451	12/21/2026	12/21/2026	29.03	30.48	30.48	30.48	30.48	27.96	36.02	37.53	37.93	37.04	36.68	36.68	35.51	34.21	34.21	34.21	35.51	36.68	36.68	36.68	36.68	37.04	31.63	27.14
SPP South - Energy Price - 1H2023	1452	12/22/2026	12/22/2026	26.84	26.84	26.84	26.84	24.18	26.84	32.02	34.21	31.85	31.85	31.85	18	8.62	6.97	6.68	24.76	31.85	31.85	34.21	35.51	34.21	35.51	26.84	27.57
SPP South - Energy Price - 1H2023	1453	12/23/2026	12/23/2026	26.18	26.18	25.49	25.49	25.49	25.49	35.51	35.61	35.61	35.61	35.61	35.61	34.21	34.21	30.49	34.21	34.21	35.51	35.51	35.51	35.51	35.51	26.18	25.49
SPP South - Energy Price - 1H2023	1454	12/24/2026	12/24/2026	27.35	27.35	27.35	26.63	27.35	27.35	34.21	36.92	35.51	34.21	31.64	34.21	31.64	31.64	31.64	16.64	31.64	35.51	34.21	31.64	34.21	31.64	26.63	24
SPP South - Energy Price - 1H2023	1455	12/25/2026	12/25/2026	25.79	24	26.63	24	24	26.63	34.21	35.45	36.69	36.92	36.92	36.92	35.51	35.51	34.21	34.21	34.77	35.51	36.92	36.92	36.92	35.51	27.35	27.35
SPP South - Energy Price - 1H2023	1456	12/26/2026	12/26/2026	26.63	26.63	26.63	27.35	28.95	28.14	37.72	35.31	37.72	33.86	33.86	33.86	32.96	32.96	29.71	31.82	32.96	33.86	33.86	32.96	32.96	32.96	26.63	26.63
SPP South - Energy Price - 1H2023	1457	12/27/2026	12/27/2026	26.63	24	26.63	26.63	26.63	26.63	32.96	33.86	32.96	32.96	32.51	32.96	32.96	32.96	32.96	32.96	32.96	35.39	37.54	37.23	37.26	37.31	30.48	30.48
SPP South - Energy Price - 1H2023	1458	12/28/2026	12/28/2026	25.71	25.71	25.71	25.71	25.71	25.71	35.51	38.09	37.01	35.72	34.66	33.6	34.33	33.7	34.92	34.21	36.39	37.33	39.16	36.9	39.16	34.33	28.58	28.58
SPP South - Energy Price - 1H2023	1459	12/29/2026	12/29/2026	27.91	27.91	28.67	28.67	28.67	28.67	38.39	38.8	38.8	38.8	38.8	38.8	38.8	38.39	38.39	38.39	38.39	38.39	37.16	34.21	34.21	33.58	25.74	27.91
SPP South - Energy Price - 1H2023	1460	12/30/2026	12/30/2026	21.92	21.92	21.92	21.92	21.92	21.92	34.19	34.19	34.19	29.05	29.05	29.05	29.05	29.05	29.05	29.05	34.19	34.19	34.19	34.19	34.19	34.19	24.9	24.26
SPP South - Energy Price - 1H2023	1461	12/31/2026	12/31/2026	27.39	27.39	30.48	30.48	30.48	30.48	37.17	37.73	37.71	35.31	35.31	35.31	35.31	35.31	41.35	37.89	41.35	41.35	41.86	41.86	41.35	41.35	31.33	31.33
SPP South - Energy Price - 1H2023	1462	1/1/2027	1/1/2027	35.48	35.48	35.48	35.48	35.48	35.48	41.34	46.41	41.34	40.84	40.84	38.03	37.49	40.84	40.84	41.34	40.84	41.34	41.34	41.34	37.79	35.46	34.52	34.52
SPP South - Energy Price - 1H2023	1463	1/2/2027	1/2/2027	34.52	31.02	32.75	31.02	31.02	31.02	39.77	39.78	40.11	40.11	40.11	39.78	39.78	39.83	40.11	40.11	40.11	40.11	40.11	40.11	40.11	39.78	34.52	31.02
SPP South - Energy Price - 1H2023	1464	1/3/2027	1/3/2027	31.02	31.02	31.02	31.02	31.02	31.02	35.74	35.74	38.32	35.74	12.19	10.91	9.97	9.32	8.8	11.18	35.74	39.77	39.77	35.74	35.74	35.74	31.02	31.1
SPP South - Energy Price - 1H2023	1465	1/4/2027	1/4/2027	28.61	28.61	28.61	28.61	28.61	28.61	33.05	34.09	38.09	34.09	34.09	34.09	8.85	8.85	7.47	7.61	7.31	33.05	33.05	33.05	33.05	34.09	31.78	31.78
SPP South - Energy Price - 1H2023	1466	1/5/2027	1/5/2027	31.41	28.28	28.28	31.41	31.41	31.41	37.72	38.13	37.72	35.37	32.72	37.72	37.72	37.72	37.72	35.05	37.72	38.13	39.67	39.67	39.67	38.13	34.81	32.27
SPP South - Energy Price - 1H2023	1467	1/6/2027	1/6/2027	31.42	31.42	31.42	31.42	31.42	31.42	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	37.28	37.28	36.89	36.89	36.89	31.42	31.42
SPP South - Energy Price - 1H2023	1468	1/7/2027	1/7/2027	31.16	31.16	30.33	31.16	30.33	31.16	36.64	36.64	36.46	34.09	34.09	36.64	35.37	36.64	36.64	35.37	36.64	37.01	37.38	37.35	37.01	37.01	31.16	31.16
SPP South - Energy Price - 1H2023	1469	1/8/2027	1/8/2027	31.51	33.08	33.2	33.7	33.7	33.7	34.41	37.97	37.97	37.97	35.5	35.37	34.41	34.41	34.11	34.11	34.4	34.4	34.63	34.77	34.4	34.4	33.2	28.55
SPP South - Energy Price - 1H2023	1470	1/9/2027	1/9/2027	27.81	28.55	28.55	29.66	28.55	29.46	33.84	37.19	35.79	33.02	35	34.98	36.08	35.95	37.23	37.84	38.84	40.11	41.61	41.61	40.11	40.11	34.81	34.81
SPP South - Energy Price - 1H2023	1471	1/10/2027	1/10/2027	34.49	32.81	32.75	28.55	27.81	28.55	32.9	37.05	40.11	32.9	32.05	32.05	28.94	9.72	12.53	28.94	32.05	32.9	32.9	32.9	32.05	32.05	25.12	25.12
SPP South - Energy Price - 1H2023	1472	1/11/2027	1/11/2027	31.49	31.69	31.49	32.35	31.49	34.81	37.8	39.76	41.09	38.21	38.21	38.21	38.21	38.21	37.8	37.8	38.21	38.91	42.6	48.88	42.6	42.6	38.36	38.33
SPP South - Energy Price - 1H2023	1473	1/12/2027	1/12/2027	36.08	36.11	34.81	34.58	34.58	39.49	45.36	52.51	52.51	45.44	51.46	50.74	49.4	45.3	45.3	45.3	41.58	40.44	40.44	39.96	36.23	34.69	33.4	30.25
SPP South - Energy Price - 1H2023	1474	1/13/2027	1/13/2027	30.03	33.4	33.4	33.4	34.33	34.33	39.72	39.72	39.72	39.72	39.72	39.72	37.46	37.46	37.5	37.46	39.72	40.18	41.58	41.39	39.72	39.72	34.33	34.27
SPP South - Energy Price - 1H2023	1475	1/14/2027	1/14/2027	32.91	32.91	32.91	32.91	32.91	32.03	38.77	38.77	38.77	38.34	38.34	35.67	38.34	38.34	38.34	38.34	38.77	38.77	40.74	38.77	38.34	38.34	32.91	32.91
SPP South - Energy Price - 1H2023	1476	1/15/2027	1/15/2027	34.16	34.16	33.24	34.16	34.16	34.16	40.02	39.55	40.02	40.02	40.02	40.02	40.02	39.55	39.55	39.55	39.55	39.55	39.55	37.07	35.37	34.33	33.24	33.24
SPP South - Energy Price - 1H2023	1477	1/16/2027	1/16/2027	33.24	33.24	29.89	29.89	29.89	29.89	34.44	34.44	38.3	38.3	35.65	34.44	39.36	39.36	38.3	38.3	34.44	39.36	40.11	39.36	38.3	39.36	34.16	34.16
SPP South - Energy Price - 1H2023	1478	1/17/2027	1/17/2027	34.16	34.16	34.16	34.16	34.16	34.16	39.36	39.36	39.36	39.36	38.3	38.3	38.3	38.3	39.36	39.36	39.36	40.11	41.61	41.63	40.11	39.36	34.16	33.24
SPP South - Energy Price - 1H2023	1479	1/18/2027	1/18/2027	34.81	36.11	34.81	36.11	39.15	39.84	46	51.65	48.08	44.6	41.15	36.08	36.08	36.08	34.09	34.09	34.09	35.43	36.08	36.08	36.08	36.08	33.59	29.41
SPP South - Energy Price - 1H2023	1480	1/19/2027	1/19/2027	34.81	34.81	34.81	34.81	34.81	38.33	45.41	45.41	41.19	41.19	41.12	35.37	35.37	35.37	37.54	34.09	40.5	41.19	41.19	42.1	47.06	47.32	39.55	39.83
SPP South - Energy Price - 1H2023	1481	1/20/2027	1/20/2027	41.6	41.6	41.6	39.55	36.22	40.67	42.95	47.47	47.47	42.95	34.09	32.41	29.7	30.55	7.47	30.92	30.79	39.83	42.95	39.83	42.95	40.04	34.81	34.81
SPP South - Energy Price - 1H2023	1482	1/21/2027	1/21/2027	15.46	13.6	13.18	11.47	31.85	32.47	35.6	43.06	39.17	39.17	39.17	39.17	39.17	39.17	39.17	34.09	39.17	39.17	43.06	43.06	42.95	39.17	34.81	32.47
SPP South - Energy Price - 1H2023	1483	1/22/2027	1/22/2027	14.34	14.88	13.18	12.87	12.96	18.12	35.37	35.37	20.32	11.18	10.36	9.27	8.48	7.92	9.02	7.61	7.31	42.78	47.3	45.71	49.25	47.15	36.92	36.92
SPP South - Energy Price - 1H2023	1484	1/23/2027	1/23/2027	34.81	34.81	36.92	36.92	36.92	36.92	42.54	43.6	41.61	41.61	37.15	37.15	37.15	11.52	10.91	8.95	40.11	40.11	44.04	42.54	42.54	42.54	36.92	34.81
SPP South - Energy Price - 1H2023	1485	1/24/2027	1/24/2027	36.11	36.11	36.11	36.92	36.92	36.92	42.54	47.2	42.54	42.54	40.11	40.11	42.54	42.41	38.42	37.15	37.15	42.54	42.54	42.54	41.61	41.61	34.81	34.81
SPP South - Energy Price - 1H2023	1486	1/25/2027	1/25/2027	31.74	31.74	31.74	31.74	31.74	29.42	37.59	37.59	34.12	37.59	37.44	35.37	33.4	33.35	37.31	37.44	37.14	37.44	37.59	37.59	37.44	35.58	27.83	27.83
SPP South - Energy Price - 1H2023	1487	1/26/2027	1/26/2027	27.83	27.07	27.07	27.83	30.85	30.85	36.7	38.07	36.84	36.7	36.7	36.7	34.09	32.68	32.58	32.59	33.24	35.18	34.97	34.09	32.59	34.09	30.28	30.17
SPP South - Energy Price - 1H2023	1488	1/27/2027	1/27/2027	28.26	30.72	30.72	31.29	32.98	34.81	36.57	36.57	37.06	36.57	35.04	36.57	36.07	36	34.09	35.93	35.66	37.67	41.68	40.32	38.98	41.68	40.18	37.47
SPP South - Energy Price - 1H2023	1489	1/28/2027	1/28/2027	37.87	37.65	41.17	41.01	37.16	38.13	48.1	49.08	48.59	43.47	39.5	39.22	37.97	37.97	37.97	39.22	39.5	42.65	47.81	47.78	47.22	45.26	38.29	38.07
SPP South - Energy Price - 1H2023	1490	1/29/2027	1/29/2027	40.62	40.57	39.41	36.51	39.75	39.75	46.37	53.06	43.39	41.41	40.86	40.36	36.6	36.6	36.6	35.37	31.25	38.52	40.59	37.55	36.6	36.6	35.14	31.07
SPP South - Energy Price - 1H2023	1491	1/30/2027	1/30/2027	31.07	31.07	34.81	35	35.07	35.55	40.11	40.11	40.96	37.75	35.8	38.92	8.36	8.28	8.19	8.19	7.88	35.8	40.11	40.11	40.11	40.11	37.57	35.55
SPP South - Energy Price - 1H2023	1492	1/31/2027	1/31/2027	36.11	38.59	36.11	38.63	39.73	35.55	45.41	46.17	47.06	47.39	44.64	42.92	40.96	40.3	40.23	40.11	40.88	40.93	40.96	40.11	40.11	40.11	34.81	34.81
SPP South - Energy Price - 1H2023	1493	2/1/2027	2/1/2027	28.98	28.98	28.98	28.98	26.51	28.98	39.43	39.43	37.57	14.59	8.23	7.7	6.47	8.7	4.9	1.53	1.41	6.53	6.86	9.17	10.57	15.06	10	10.31

SPP South - Energy Price - 1H2023	1494	2/2/2027	2/2/2027	6.73	10.49	9.65	21.88	22.88	25.19	37.76	37.76	37.76	36.24	36.49	35.97	35.97	33.06	7.35	8.98	10.65	37.32	37.32	42.68	37.76	37.76	28.08	27.98
SPP South - Energy Price - 1H2023	1495	2/3/2027	2/3/2027	23.42	23.42	26.51	23.42	23.41	26.51	35.97	44.02	41.64	40.98	39.93	38.58	39.2	40.02	39.05	36.69	35.97	39.16	40.04	40.87	42.27	44.71	31.39	30.06
SPP South - Energy Price - 1H2023	1496	2/4/2027	2/4/2027	28.09	28.09	28.09	28.08	27.33	27.33	37.98	39.07	38.26	38.37	41.3	39.26	35.97	35.97	35.97	35.97	35.97	39.49	40.04	41.3	41.3	41.78	28.98	28.98
SPP South - Energy Price - 1H2023	1497	2/5/2027	2/5/2027	28.98	27.9	27.9	27.9	28.98	28.98	45.51	46.6	47.5	45.75	43	41.08	40.48	37.07	36.68	35.5	35.5	39.51	40.55	41.08	41.08	41.51	28.98	28.98
SPP South - Energy Price - 1H2023	1498	2/6/2027	2/6/2027	28.98	27.9	27.9	27.15	24.43	26.15	36.65	37.5	37.67	33.82	35.38	32.91	35.38	35.38	35.38	32.02	31.83	31.83	36.16	36.36	35.38	24.01	13.18	10.37
SPP South - Energy Price - 1H2023	1499	2/7/2027	2/7/2027	10.14	9.46	10.67	16.39	24.43	24.43	35.35	36.36	36.36	36.36	36.36	37.77	36.36	35.38	35.38	35.38	36.36	36.36	37.77	37.77	36.44	35.38	27.15	24.43
SPP South - Energy Price - 1H2023	1500	2/8/2027	2/8/2027	25.41	25.96	25.96	25.69	25.96	25.96	39.08	43.24	39.31	38.69	38.69	35.97	33.4	33.4	33.4	33.4	33.4	37.42	38.69	38.69	38.69	38.69	25.96	25.27
SPP South - Energy Price - 1H2023	1501	2/9/2027	2/9/2027	25.18	25.18	25.18	25.18	25.18	25.45	37.77	39.43	36.83	35.97	35.97	37.32	33.3	10.16	7.35	7.35	11.7	33.3	36.26	35.97	35.97	33.3	22.69	22.69
SPP South - Energy Price - 1H2023	1502	2/10/2027	2/10/2027	22.71	9.46	9.18	9.16	9.06	12.69	34.1	35.97	34.34	9.28	1.35	1.44	1.43	1.4	1.34	1.53	1.41	6.53	35.97	36.17	36.56	39.48	27.21	26.61
SPP South - Energy Price - 1H2023	1503	2/11/2027	2/11/2027	25.78	25.78	24.5	25.9	25.9	26.48	39.33	39.74	35.83	35.97	35.97	35.24	35.17	34.91	33.97	33.97	33.97	33.97	36.19	37.17	36.65	35.97	25.78	23.22
SPP South - Energy Price - 1H2023	1504	2/12/2027	2/12/2027	23.53	22.47	22.47	22.47	22.47	25.61	35.97	36.59	35.97	35.97	35.81	33.02	33.02	33.02	33.02	33.02	30.44	33.02	35.97	34.11	33.02	33.02	22.47	22.47
SPP South - Energy Price - 1H2023	1505	2/13/2027	2/13/2027	22.47	22.47	22.47	22.47	22.47	22.47	32.49	35.1	33.37	33.37	32.49	32.49	31.4	29.61	29.29	29.29	29.29	29.29	28.59	29.29	29.29	29.29	22.47	22.47
SPP South - Energy Price - 1H2023	1506	2/14/2027	2/14/2027	22.47	22.47	22.47	22.47	22.47	22.47	29.8	33.37	32.49	32.49	30.75	30.37	29.76	29.61	32.49	29.29	29.29	31.4	32.49	33.37	35.56	34.65	25.92	25.61
SPP South - Energy Price - 1H2023	1507	2/15/2027	2/15/2027	29.45	29.46	29.46	29.46	30.06	29.46	44.57	44.57	44.57	44.57	44.57	44.57	44.57	42.96	44.01	42.89	44.01	44.01	44.01	44.57	44.01	44.01	28.98	26.45
SPP South - Energy Price - 1H2023	1508	2/16/2027	2/16/2027	25.79	28.7	26.67	27.11	28.7	28.7	39.61	43.05	39.43	37.22	37.7	35.62	35.97	35.97	1.34	26.8	33.65	35.97	38.23	39.28	37.61	37.22	28.7	25.79
SPP South - Energy Price - 1H2023	1509	2/17/2027	2/17/2027	34.63	30.06	30.06	30.06	28.98	30.06	48.41	48.41	38.7	35.97	47.24	39.95	35.97	35.97	34.28	35.97	35.97	41.65	48.41	48.41	45.54	42.86	31.78	31.29
SPP South - Energy Price - 1H2023	1510	2/18/2027	2/18/2027	27.85	19.79	18.75	27.85	27.85	27.85	39.83	39.83	39.82	39.82	39.25	35.73	35.97	31.43	39.82	39.82	39.26	41.72	42.57	46.02	46.02	46.02	31.04	28.98
SPP South - Energy Price - 1H2023	1511	2/19/2027	2/19/2027	28.98	28.98	28.24	28.98	28.98	28.98	42.97	42.46	42.46	39.48	36.71	32.16	7.91	7.42	7.35	7.35	7.07	29.79	36.71	37.43	37.23	37.47	28.24	28.24
SPP South - Energy Price - 1H2023	1512	2/20/2027	2/20/2027	25.39	25.39	25.39	25.39	25.39	25.39	33.29	37.77	35.96	33.08	33.08	33.08	33.08	11.36	33.08	35.96	33.08	33.14	36.8	36.8	36.8	36.8	28.24	28.24
SPP South - Energy Price - 1H2023	1513	2/21/2027	2/21/2027	28.24	28.24	28.24	26.79	27.49	27.77	36.8	36.8	36.8	33.29	33.08	36.8	33.08	6.41	4.9	7.72	1.48	33.08	33.08	33.08	36.8	36.8	28.24	28.2
SPP South - Energy Price - 1H2023	1514	2/22/2027	2/22/2027	26.15	26.86	26.47	26.29	26.86	26.86	40.23	40.23	40.23	40.23	40.23	40.23	40.23	40.23	40.23	39.8	40.23	40.23	41.86	41.86	40.23	39.8	26.86	26.86
SPP South - Energy Price - 1H2023	1515	2/23/2027	2/23/2027	28.98	28.49	28.98	28.49	28.49	28.98	42.29	42.29	42.29	36.82	37.36	36.62	36.62	36.62	35.97	35.97	35.97	34.21	36.62	36.62	35.97	36.62	24.93	24.93
SPP South - Energy Price - 1H2023	1516	2/24/2027	2/24/2027	22.99	22.99	22.99	24.93	25.52	25.52	39	39	37.32	34.16	34.16	34.16	32.52	32.12	30.95	32.35	34.16	34.16	34.16	34.16	34.16	34.16	22.99	22.99
SPP South - Energy Price - 1H2023	1517	2/25/2027	2/25/2027	9.93	8.72	14.17	9.85	24	24.33	35.97	35.97	35.97	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.97	37.07	40.93	41.39	40.93	28.98	27.78
SPP South - Energy Price - 1H2023	1518	2/26/2027	2/26/2027	27.08	27.08	27.08	27.08	27.08	28.98	43.33	44.74	45.17	40.5	40.5	40.5	40.06	40.06	39.43	36.81	36.21	37.46	40.06	40.06	37.4	34.76	26.35	26.16
SPP South - Energy Price - 1H2023	1519	2/27/2027	2/27/2027	23.73	23.73	23.73	23.73	23.73	23.73	32.98	30.92	30.92	8.94	8.06	7.58	8.06	7.58	1.46	8.06	1.37	8.74	30.92	30.92	30.92	28.44	23.73	23.73
SPP South - Energy Price - 1H2023	1520	2/28/2027	2/28/2027	23.73	26.35	26.35	23.73	23.73	23.73	34.34	33.41	30.92	15.05	8.2	8.1	1.4	8.68	8.91	9.26	9.07	8.74	8.38	10.56	9.71	10.69	8.2	7.72
SPP South - Energy Price - 1H2023	1521	3/1/2027	3/1/2027	6.27	6.31	6.13	1.01	5.81	5.71	9.66	9.1	1.26	8.38	1.24	27.2	25.02	36.73	38.63	35.4	32.26	35.4	37.67	38.74	35.4	36.87	19.77	6
SPP South - Energy Price - 1H2023	1522	3/2/2027	3/2/2027	6.33	6.31	6.13	5.95	6.46	5.71	9.66	10.51	10.51	8.38	7.56	3.84	4.17	8.14	8.35	8.68	5.35	8.19	34.48	37.38	37.38	37.38	20.13	20.13
SPP South - Energy Price - 1H2023	1523	3/3/2027	3/3/2027	21.4	21.4	21.4	21.7	21.4	23.87	47.24	47.19	44.37	40.35	43.02	45.18	44.92	43.02	40.68	45.84	43.02	47.09	47.25	48.55	47.25	47.25	23.87	21.7
SPP South - Energy Price - 1H2023	1524	3/4/2027	3/4/2027	23.84	23.62	21.22	21.45	21.45	23.23	43.84	44.57	43.11	43.11	42.65	39.37	39.37	39.37	39.23	8.68	8.51	35.4	41.65	44.08	44.28	44.11	23.54	23.04
SPP South - Energy Price - 1H2023	1525	3/5/2027	3/5/2027	22.01	21.65	21.65	21.65	21.52	22.01	43.46	45.86	39.27	39.22	38.33	35.93	35.93	35.4	35.4	35.4	35.93	35.93	38.64	37.47	35.93	35.93	17.26	17.26
SPP South - Energy Price - 1H2023	1526	3/6/2027	3/6/2027	17.26	17.26	17.26	19.17	19.17	19.17	32.21	32.21	29	28.94	29	7.3	29.07	29	32.21	32.62	32.58	32.51	35.64	36.34	36.82	35.64	19.17	19.17
SPP South - Energy Price - 1H2023	1527	3/7/2027	3/7/2027	19.17	19.17	19.67	19.17	19.55	21.02	35.44	32.75	32.55	29	32.21	32.44	32.61	29	8.4	27.65	32.21	32.51	35.64	35.64	32.61	32.61	19.42	19.34
SPP South - Energy Price - 1H2023	1528	3/8/2027	3/8/2027	17.6	17.83	6.99	6.18	17.83	17.83	36.93	35.4	35.4	33.91	33.91	33.91	33.91	33.91	33.91	33.91	33.91	28.77	30.04	32.33	32.56	32.04	16.08	6
SPP South - Energy Price - 1H2023	1529	3/9/2027	3/9/2027	16.81	10.21	7.24	10.8	18.66	20.47	41.21	38.33	36.73	38.33	38.33	38.34	38.34	38.33	38.34	38.34	38.34	38.34	38.34	38.34	38.33	38.33	21.22	21.22
SPP South - Energy Price - 1H2023	1530	3/10/2027	3/10/2027	20.95	20.86	18.87	19.13	18.87	18.87	38.69	35.47	35.47	35.4	35.47	38.62	36.73	35.47	36.73	38.69	38.69	38.69	39.99	42.25	41.26	38.69	21.22	19.08
SPP South - Energy Price - 1H2023	1531	3/11/2027	3/11/2027	21.22	19.64	19.87	21.22	21.93	21.82	44.73	44.58	40.01	41.23	36.63	36.72	40.01	40.01	40.01	40.01	37.32	36.63	36.63	36.63	36.63	36.63	19.54	17.67
SPP South - Energy Price - 1H2023	1532	3/12/2027	3/12/2027	18.79	18.79	18.79	18.79	16.92	16.92	35.4	35.4	38.56	36.73	35.4	39.74	38.56	39.45	39.45	40.07	39.54	39.81	38.56	38.56	38.56	35.35	16.92	6
SPP South - Energy Price - 1H2023	1533	3/13/2027	3/13/2027	6.33	6.31	6.14	6.18	5.81	5.71	9.73	9.17	8.69	8.44	1.25	1.16	1.32	1.2	8.25	8.74	8.56	8.25	18.13	28.43	16.68	16.53	13.85	7.64
SPP South - Energy Price - 1H2023	1534	3/14/2027	3/14/2027	11.53	9.22	12.3	11.32	16.92	6.19	32.17	33.22	35.64	35.64	33.22	32.67	31.98	31.56	33.22	31.56	31.56	31.56	31.56	31.56	28.61	28.43	16.92	16.92
SPP South - Energy Price - 1H2023	1535	3/15/2027	3/15/2027	17.55	17.55	17.55	17.55	19	18.81	36.81	35.42	39.78	39.78	39.78	36.33	35.42	39.72	39.78	36.73	35.42	35.4	35.4	35.42	11.01	11.16	6.71	6
SPP South - Energy Price - 1H2023	1536	3/16/2027	3/16/2027	6.33	6.31	6.13	5.95	5.81	5.71	15.84	9.1	8.63	8.38	7.56	7.59	7.76	6.54	8.35	7.86	8.51	8.19	7.86	32.33	35	35	17.31	17.31
SPP South - Energy Price - 1H2023	1537	3/17/2027	3/17/2027	17.43	7.42	6.14	12.37	6.05	19.36	35.4	35.4	23.47	8.38	7.56	7.59	7.04	8.14	8.35	8.68	8.51	8.19	35.21	39.54	39.54	39.54	19.36	19.36
SPP South - Energy Price - 1H2023	1538	3/18/2027	3/18/2027	20.61	21.18	20.61	21.18	21.18	21.18	42.18	44.09	44.99	44.32	42.79	42.18	41.67	41.67	41.67	41.67	41.67	41.67	41.67	41.67	37.18	36.02	18.53	18.53
SPP South - Energy Price - 1H2023	1539	3/19/2027	3/19/2027	18	18	6.13	18	18	18	35.13	34.73	8.63	8.38	7.56	1.15	1.32	22.26	28.93	35.13	35.13	35.4	37.01	36.12	36.25	38.59	20.01	20.01
SPP South - Energy Price - 1H2023	1540	3/20/2027	3/20/2027	20.01	20.01	20.48	20.57	20.57	21.22	35.64	35.04	33.92	34.55	33.9	33.62	30.31	33.62	33.62	30.24	30.24	30.24	33.62	33.62	30.24	33.62	20.01	20.01
SPP South - Energy Price - 1H2023	1541	3/21/2027	3/21/2027	20.01	20.43	20.57	20.57	20.57	20.57	34.55	34.55	34.55	34.55	34.55	33.62	33.62	30.24	30.93	30.24	30.24	33.62	33.62	30.93	33.62	30.24	20.01	18
SPP South - Energy Price - 1H2023	1542	3/22/2027	3/22/2027	20.11	20.83	20.45	20.45	20.45	22.01	46.95	41.41	39.38	41.41	37.89	41.41	41.4	41.4	38.9	38.86	41.41	41.41	41.4	41.41	41.81	41.4	21.18	20.45
SPP South - Energy Price - 1H2023	1543	3/23/2027	3/23/2027	19.72	19.72	19.87	19.72	19.72	20.27	40.16	35.71	35.71	39.74	39.06	39.71	38.07	37.9	40.16	40.16	40.16	40.16	40.16	40.16	40.16	40.16	20.57	20.82
SPP South - Energy Price - 1H2023	1544	3/24/2027	3/24/2027	20.26	19.52	19.52	19	19	19.52	38.92	36.73	38.26	38.53	37.08	38.92	35.62	35.4	35.4	35.4	35.4	33.61	36.74	36.8	36.25	33.61	17.11	19.15
SPP South - Energy Price - 1H2023	1545	3/25/2027	3/25/2027	16.72	18.4	18.4	18.4	18.33	18.23	35.4	35.4	35.3	35.22	36.82	35.4	35.4	35.4	35.4	31.99	31.99	31.99	35.4	37.07	37.07	37.07	17.92	17.92
SPP South - Energy Price - 1H2023	1546	3/26/2027	3/26/2027	15.12	15.12	16.74	15.12	15.75	16.74	30.22	35.05	34.89	34.52	34.87	34.59	34.94	34.82	34.98	35.05	35.05	35.17	35.07	35.4	35.4	35.4	17.18	17.02
SPP South - Energy Price - 1H2023	1547	3/27/2027	3/27/2027	17.18	17.18	17.18	17.18	17.18	17.18	29.94	28.86	28.86	28.86	28.86	28.86	28.86	28.86	28.86	29.43	30.95	31.01	31.85	33.1	31.37	28.86	17.18	17.18
SPP South - Energy Price - 1H2023	1548	3/28/2027	3/28/2027	17.08	16.74	16.5	16.74	16.74	16.74	28.86	28.86	25.4	25.4	6.79	1.74	1.41	1.35	1.47	1.35	1.38	1.47	11.84	12.03	14.07	13.94	7.69	6.78
SPP South - Energy Price - 1H2023	1549	3/29/2027	3/29/2027	7.37	1.22	1.05	6.78	7.37	7.26	12.29	11.68	1.73	10.82	10.74	31	31	35.4	31.45	31	35.4	35.4	35.94	36.26	35.94	35.94	17.25	17.25
SPP South - Energy Price - 1H2023	1550	3/30/2027	3/30/2027	18.15	18.15	18.15	18.15	18.64	18.64	37.47	37.47	37.21	37.47	32.34	26.9	30.39	32.34	32.34	12.24	35.4	35.4	35.4	35.4	35.4	35.4	18.15	16.36
SPP South - Energy Price - 1H2023	1551	3/31/2027	3/31/2027	16.41	17.29	16.41	16.21	17.36	18.21	35.5	32.58	32.42	32.42	32.42	26.21	29.82	11.46	32.42	32.42	30.46	32.42	32.42	32.42	32.42	13.85	8.08	7.2
SPP South - Energy Price - 1H2023	1552	4/1/2027	4/1/2027	6.67	6.54	5.95	5.99	12.81	14.29	30.3	30.3	30.3	30.3	30.3	30.3	30.3	31.2	30.3	10.79	29.93	30.3	30.3	27.67	12.32	12.21	6.67	5.95
SPP South - Energy Price - 1H2023	1553	4/2/2027	4/2/2027	6.79	6.54	5.95	5.99	6.19	13.4	28.7	28.7	28.7	28.77	28.7	28.7	19.82	11.83	19.52	25.56	11.15	11.64	28.7	28.7	31.2	31.2	14.62	13.45
SPP South - Energy Price - 1H2023	1554	4/3/2027	4/3/2027	13.4	14.62	14.62	14.62	14.62	14.62	29.74	29.74	27.27	27.36	30.52	29.74	27.27	27.26	27.26	12.69	27.27	29.74	29.74	27.36	27.36	29.74	14.62	14.62
SPP South - Energy Price - 1H2023	1555	4/4/2027	4/4/2027	14.12	14.62	13.4	13.4	13.4	13.4	27.27	27.27	27.89	27.27	29.74	27.88	29.74	29.74	29.74	29.74	30.13	30.54	30.54	30.54	30.54	30.54	14.62	14.62
SPP South - Energy Price - 1H2023	1556	4/5/2027	4/5/2027	14.29	13.1	14.29	14.29	14.29	14.29	31.75	31.2	31.75	31.2	30.64	14.15	28.1	22.41	10.81	11.4	11.15	10.72	28.1	28.1	28.1	17.12	8.89	5.95
SPP South - Energy Price - 1H2023	1557	4/6/2027	4/6/2027	6.79	6.54	5.95	6.19	6.19	8.35	28.92	10.29	9.91	9.54	9.47	9.57	11.23	28.92	28.93	31.2	28.93	28.93	32.67	32.37	32.67	31.2	14.79	13.55
SPP South - Energy Price - 1H2023	1558	4/7/2027	4/7/2027	6.79	6.54	5.95	5.99	13.96	15.24	32.37	33.49	29.66	29.66	29.66	29.66	29.66	28.79	29.66	30.19	29.02	28.84	29.66	29.66	29.66	29.66	13.96	5.95
SPP South - Energy Price - 1H2023	1559	4/8/2027	4/8/2027	8.97	13.76	13.76	13.76	13.76	13.76	28.96	28.92	28.92	28.92	28.92	28.92	31.2	28.92	31.2	29.12	28.92	28.92	28.92	31.2	29.12	29.12	15.01	13.76
SPP South - Energy Price - 1H2023	1560	4/9/2027	4/9/2027	13.58	14.82	14.82	14.82	15.22	15.22	32.73	31.2	26.31	28.6	1.55	1.52	2.29	1.19	1.92	7.61	1.21	10.72	10.15	28.6	12.32	28.6	13.58	13.58
SPP South - Energy Price - 1H2023	1561	4/10/2027	4/10/2027	6.79	6.54	5.95	5.99	6.19	5.99	12.37	11.75	1.74	1.58	1.77	1.74	1.41	1.35	1.47	1.35	1.38	10.45	11.6	27.63	27.63	30.15	14.82	14.82
SPP South - Energy Price - 1H2023	1562	4/11/2027	4/11/2027	14.82	14.03	13.58	13.58	13.58	13.58	27.63	27.63	27.63	26.48	27.63	30.03	26.9	27.63	27.63	27.63	30.14	30.96	35.52	35.63	30.96	30.96	14.82	14.82
SPP South - Energy Price - 1H2023	1563	4/12/2027	4/12/2027	14.75	14.75	13.95	13.52	13.52	14.75	31.2	28.49	29.14	28.49	26.21	28.49	9.94	10.1	10.09	28.49	12.43	26.69	28.49	28.49	28.49	28.49	13.52	13.52
SPP South - Energy Price - 1H2023	1564	4/13/2027	4/13/2027	6.79	6.54	5.95	5.99	6.19	14.09	32.91	31.2	31.2	28.77	26.46	23.53	9.94	18.35	27.51	28.77	11.15	28.77	32.37	32.91	31.2	31.2	13.67	13.67
SPP South - Energy Price - 1H2023	1565	4/14/2027	4/14/2027	13.85	13.85	13.85	13.85	15.06	15.12	30.27	23.86	11.77	14.71	1.55	27.77	9.94	10.1	12.62	29.09	29.09	32.02	29.09	29.09	29.09	29.09	12.66	13.62
SPP South - Energy Price - 1H2023	1566	4/15/2027	4/15/2027	13.62	13.62	13.62	13.62	13.62	13.62	28.66	26.37	26.37	9.54	9.47	25	25	10.1	10.09	10.79	11.15	10.72	10.15	28.66	21.74	28.66	13.62	13.62
SPP South - Energy Price - 1H2023	1567	4/16/2027	4/16/2027	13.46	14.56	14.94	14.95	16.72	17.52	33.98	32.56	32.37	32.26	32.37	32.37	32.26	32.26	32.37	32.26	32.26	32.26	32.26	32.26	32.26	32.25	15.5	14.95
SPP South - Energy Price - 1H2023	1568	4/17/2027	4/17/2027	14.95	14.56	14.56	14.56	14.95	15.02	32.71	30.42	29.62	30.42	30.42	27.16	29.52	21.4	21.51	27.16	27.16	27.16	26.51	17.22	14.06	13.94	6.67	13.35
SPP South - Energy Price - 1H2023	1569	4/18/2027	4/18/2027	13.35	13.35	13.35	13.35	13.35	13.35	24.98	29.62	25.65	22.55	11.67	29.62	29.89	27.16	30.1	30.42	30.02	30.42	30.96	29.62	30.39	27.16	14.56	14.56
SPP South - Energy Price - 1H2023	1570	4/19/2027	4/19/2027	13.07	13.07	13.07	13.07	14.64	14.62	31.69	31.98	31.98	31.94	31.81	31.98	31.98	31.98	31.98	31.98	31.98	31.98	31.98	31.98	31.98	31.98	16.16	14.64
SPP South - Energy Price - 1H2023	1571	4/20/2027	4/20/2027	15.29	14.89	15.26	16.15	15.29	16.21	32.44	31.2	32.14	31.2	31.2	31.2	31.2	28.07	28.07	28.07	28.55	32.14	32.14	32.14	32.14	32.14	15.31	14.89
SPP South - Energy Price - 1H2023	1572	4/21/2027	4/21/2027	14.16	14.85	14.7	14.98	17.17	17.33	31.8	31.8	31.8	31.52	31.52	31.2	27.52	27.52	26.19	27.52	11.15	27.52	27.2	27.52	27.52	27.52	12.81	12.06
SPP South - Energy Price - 1H2023	1573	4/22/2027	4/22/2027	12.81	12.81	12.81	12.81	12.81	13.97	31.17	27.2	27.2	27.2	27.2	27.05	25.03	10.1	10.09	10.79	26.71	27.2	27.2	27.2	30.41	27.21	12.81	12.81
SPP South - Energy Price - 1H2023	1574	4/23/2027	4/23/2027	10.62	6.54	5.95	11.79	12.64	12.64	29.91	30.81	29.8	30.81	29.83	29.8	26.89	26.89	26.89	28.57	28.6	26.89	26.89	26.89	24.62	12.21	3.9	0.96
SPP South - Energy Price - 1H2023	1575	4/24/2027	4/24/2027	1.05	1.01	0.87	0.92	0.89	0.84	1.87	1.81	1.87	10.89	4.32	7.95	5.28	5.89	5.28	3.55	12.6	12.24	11.6	25.71	25.71	28.01	13.06	12.64
SPP South - Energy Price - 1H2023	1576	4/25/2027	4/25/2027	11.87	12.64	11.69	11.74	12.64	12.64	25.71	25.71	22.03	10.89	7.81	25.71	25.71	25.71	25.71	25.71	25.71	25.71	28.11	33.15	31.73	28.76	13.77	13.77

SPP South - Energy Price - 1H2023	1577	4/26/2027	4/26/2027	14.32	13.21	12.65	13.21	13.21	13.21	17.59	13.45	5.3	5.07	5.74	17.59	27.92	31.2	31.2	31.2	31.2	27.92	31.2	31.96	31.2	31.13	13.21	13.21
SPP South - Energy Price - 1H2023	1578	4/27/2027	4/27/2027	13.46	13.46	13.46	13.46	13.46	13.46	29.93	28.42	31.2	31.2	32.37	32.8	33.02	36.37	39.37	39.66	39.31	38.21	36.9	38	34.33	33.96	17.52	16.45
SPP South - Energy Price - 1H2023	1579	4/28/2027	4/28/2027	16.41	14.99	15	14.6	14.6	14.99	31.2	31.43	31.2	32.33	32.33	31.2	32.73	32.91	32.96	34.13	33.78	33.78	34.12	33.78	32.63	32.33	14.99	14.99
SPP South - Energy Price - 1H2023	1580	4/29/2027	4/29/2027	14.01	14.38	14.01	14.38	14.38	15.19	31.24	31.24	31.2	30.85	27.62	28.38	31.2	31.2	27.27	27.27	25.92	27.27	27.27	27.27	27.27	27.27	12.85	13.61
SPP South - Energy Price - 1H2023	1581	4/30/2027	4/30/2027	12.76	12.76	12.76	12.76	14.27	13.28	28.7	27.1	5.46	27.1	25.46	25.71	7.59	9.13	10.41	27.1	29.05	31.05	24.59	27.1	31.31	29.18	12.76	12.76
SPP South - Energy Price - 1H2023	1582	5/1/2027	5/1/2027	22.12	20.32	20.32	7.87	22.12	22.12	30.48	30.48	30.48	30.48	30.48	27.99	27.99	30.48	28.04	30.48	28.04	30.48	31.28	31.28	30.48	30.48	21.66	20.32
SPP South - Energy Price - 1H2023	1583	5/2/2027	5/2/2027	20.32	21.63	20.31	20.31	20.32	20.32	28.42	27.99	6.76	12.81	27.99	12.75	27.99	27.99	27.99	27.99	30.48	27.99	31.28	31.28	34.48	31.28	22.7	22.7
SPP South - Energy Price - 1H2023	1584	5/3/2027	5/3/2027	20.84	21.09	20.84	21.38	21.38	23.3	31.43	29.59	25.91	26.74	25.78	25.78	22.43	10.73	25.47	9.1	11.99	25.78	25.78	29.79	30.51	29.79	21.38	21.38
SPP South - Energy Price - 1H2023	1585	5/4/2027	5/4/2027	21.54	21.4	21.4	21.4	21.54	21.95	30.45	30.23	30.23	30.23	29.6	30.23	30.23	30.23	26.35	26.35	26.94	26.94	30.23	30.23	30.23	26.52	20.38	20.92
SPP South - Energy Price - 1H2023	1586	5/5/2027	5/5/2027	22	20.81	22.1	22.67	22.67	23.27	31.68	31.32	29.15	31.68	31.68	31.94	31.94	31.68	31.68	31.68	27.65	31.94	31.94	32.16	32.16	31.68	22.67	21.85
SPP South - Energy Price - 1H2023	1587	5/6/2027	5/6/2027	21.35	9.36	20.91	20.91	22.52	23.38	31.81	27.76	27.76	27.76	5.91	6.89	8.69	10.25	27.54	12.05	11.99	27.1	27.76	27.76	31.29	29.28	20.91	20.91
SPP South - Energy Price - 1H2023	1588	5/7/2027	5/7/2027	20.84	20.84	22.71	22.06	20.84	23.31	31.53	28.29	30.59	30.66	30.84	31.72	32.16	31.72	27.69	28.37	27.69	28.29	32.16	31.99	31.99	31.73	23.31	22.79
SPP South - Energy Price - 1H2023	1589	5/8/2027	5/8/2027	22.71	23.31	22.71	22.71	22.08	23.31	32.11	32.11	32.19	32.11	32.11	31.28	31.28	31.28	31.28	32.11	28.71	29.54	32.11	32.11	35.43	32.11	23.31	23.31
SPP South - Energy Price - 1H2023	1590	5/9/2027	5/9/2027	23.31	22.71	22.71	22.71	23.31	23.31	32.11	32.11	32.09	32.11	32.11	32.11	32.11	32.11	32.11	32.11	31.28	32.11	32.11	29.1	31.28	29.1	20.84	21.12
SPP South - Energy Price - 1H2023	1591	5/10/2027	5/10/2027	15.84	21.12	8.1	21.12	23.02	21.12	29.87	31.64	29.11	30.53	32.09	32.09	32.36	32.16	32.09	32.16	31.99	32.09	32.09	32.08	28.01	32.09	10.48	21.12
SPP South - Energy Price - 1H2023	1592	5/11/2027	5/11/2027	21.3	23.22	21.3	23.83	21.3	23.22	28.21	28.2	28.21	28.2	25.95	28.21	28.21	32.16	32.31	32.59	32.59	32.16	32.31	32.31	32.31	32.16	23.22	23.22
SPP South - Energy Price - 1H2023	1593	5/12/2027	5/12/2027	23.61	23.61	21.65	23.61	23.61	23.61	31.34	31.02	31.36	32.75	32.75	32.75	32.75	33.05	32.75	33.05	32.75	32.75	33.05	33.05	33.05	33.05	23.61	23.61
SPP South - Energy Price - 1H2023	1594	5/13/2027	5/13/2027	23.88	23.88	23.88	21.89	22.97	23.88	32.16	33.06	33.06	33.36	33.37	33.37	35.03	33.37	33.37	37.67	34.51	36.44	35.9	35.31	35.83	33.37	24.7	23.88
SPP South - Energy Price - 1H2023	1595	5/14/2027	5/14/2027	23.69	23.69	24.32	23.69	23.69	24.32	32.84	32.16	32.16	32.84	32.84	33.14	32.84	33.14	33.36	33.14	36.48	33.43	33.36	35.02	35.13	33.14	26.6	26.62
SPP South - Energy Price - 1H2023	1596	5/15/2027	5/15/2027	24.32	24.32	23.08	23.69	23.69	21.72	30.9	32.64	36.01	37.89	33.97	39.83	37.36	33.51	33.51	37.8	33.51	33.51	33.51	35	35.04	33.51	21.72	22.54
SPP South - Energy Price - 1H2023	1597	5/16/2027	5/16/2027	22.06	22.18	21.72	21.72	21.72	21.72	29.93	29.93	30.53	32.64	30.84	33.51	32.64	32.63	32.64	33.51	32.64	32.63	29.93	29.93	32.63	29.93	21.72	21.72
SPP South - Energy Price - 1H2023	1598	5/17/2027	5/17/2027	22.49	22.49	22.49	22.49	24.37	25.21	32.16	30.59	32.16	29.85	33.36	33.82	33.82	32.16	32.16	33.36	33.36	30.69	32.16	33.82	34.15	33.36	24.54	22.67
SPP South - Energy Price - 1H2023	1599	5/18/2027	5/18/2027	22.67	22.67	22.67	22.67	23.84	23.27	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	30.13	29.76	29.76	22.67	22.67
SPP South - Energy Price - 1H2023	1600	5/19/2027	5/19/2027	7.46	7.46	8.1	7.14	7.41	7.19	8.63	6.34	5.46	5.22	5.91	6.89	7.82	14.46	10.72	12.05	11.99	27	29.43	29.43	30.2	29.43	22.38	22.38
SPP South - Energy Price - 1H2023	1601	5/20/2027	5/20/2027	9.48	8.71	8.1	7.68	7.68	7.19	26.78	6.34	5.46	8.54	5.91	29.18	26.84	29.18	29.18	29.18	29.18	29.18	29.18	29.18	33.4	29.18	22.16	22.16
SPP South - Energy Price - 1H2023	1602	5/21/2027	5/21/2027	21.18	21.18	21.18	21.18	21.18	21.18	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	10.59	10.48	16.74
SPP South - Energy Price - 1H2023	1603	5/22/2027	5/22/2027	9.48	8.33	6.14	7.68	7.41	7.41	9.34	7.85	17.37	6.47	14.68	29.18	31.8	32.65	32.65	34.37	36.47	36.03	33.98	35.86	31.8	31.8	22.15	21.18
SPP South - Energy Price - 1H2023	1604	5/23/2027	5/23/2027	17.41	9.68	8.1	9.68	8.48	15.7	13.34	13.29	10.04	32.65	32.89	32.65	32.65	32.65	32.65	31.8	29.18	29.18	31.8	32.65	31.8	33.72	23.7	23.08
SPP South - Energy Price - 1H2023	1605	5/24/2027	5/24/2027	20.81	19.14	19.14	19.14	19.14	19.21	21.29	21.29	21.29	25.76	29.57	29.57	29.76	29.57	32.16	29.57	32.16	29.76	29.76	31.54	29.76	29.56	20.81	19.14
SPP South - Energy Price - 1H2023	1606	5/25/2027	5/25/2027	23.27	21.98	21.98	21.98	22.21	22.27	28.98	31.02	31.73	32.16	33.48	33.48	34.01	33.91	33.49	35.46	34.44	34.82	33.97	33.97	34.02	34.64	25.43	23.98
SPP South - Energy Price - 1H2023	1607	5/26/2027	5/26/2027	25.04	25.43	25.43	25.43	24.76	25.43	34.07	32.16	32.47	32.3	34.07	34.07	34.07	34.4	34.07	34.4	34.07	34.07	33.36	33.36	33.24	30.14	22.68	22.68
SPP South - Energy Price - 1H2023	1608	5/27/2027	5/27/2027	23.17	23.1	5.36	5.46	22.84	24.93	29.95	32.76	34.1	33.25	34.26	34.17	34.26	34.6	34.26	34.6	34.6	34.26	34.26	32.16	32.16	32.16	24.93	24.93
SPP South - Energy Price - 1H2023	1609	5/28/2027	5/28/2027	25.38	23.24	25.38	4.88	23.24	23.3	31.46	31.85	32.98	30.41	34.77	34.77	33.33	33.36	34.49	34.78	34.78	34.78	33.36	34.77	33.36	32.16	25.38	25.38
SPP South - Energy Price - 1H2023	1610	5/29/2027	5/29/2027	25.38	23.83	8.26	23.24	25.38	23.84	33	32.4	32.39	33.59	35.91	34.97	34.97	35.52	35.92	35.95	35.92	35.92	35.92	35.92	36.38	35.92	26.07	26.07
SPP South - Energy Price - 1H2023	1611	5/30/2027	5/30/2027	25.38	25.38	25.38	25.74	25.46	25.38	35.6	35.52	35.75	35.92	36.53	37.23	39.26	38.76	39.3	39.83	39.83	39.83	35.95	35.92	35.95	35.92	26.07	25.38
SPP South - Energy Price - 1H2023	1612	5/31/2027	5/31/2027	23.61	23.24	23.24	23.3	23.24	23.3	30.41	30.41	14.95	30.41	30.42	30.41	32.16	32.16	34.77	34.77	34.77	35.13	34.77	34.78	34.78	34.68	26.07	25.97
SPP South - Energy Price - 1H2023	1613	6/1/2027	6/1/2027	20.85	21.4	21.4	21.4	21.3	20.94	31.98	35.24	35.24	35.51	37.15	37.32	39.34	39.34	36.83	38.81	38.81	38.81	41.77	41.85	42.18	38.21	25.24	23.56
SPP South - Energy Price - 1H2023	1614	6/2/2027	6/2/2027	22.62	22.41	22.22	21.81	21.67	22.21	35.94	34.27	35.6	34.57	35.6	35.88	36.91	35.88	36.83	39.26	36.15	36.83	35.88	35.88	35.88	31.05	19.39	19.39
SPP South - Energy Price - 1H2023	1615	6/3/2027	6/3/2027	18.26	18.26	18.26	18.26	18.26	18.26	30.63	29.58	29.51	29.51	33.56	33.87	31.99	29.51	33.87	33.2	33.87	33.87	33.87	33.87	33.87	29.51	5.71	5.82
SPP South - Energy Price - 1H2023	1616	6/4/2027	6/4/2027	6.15	5.59	5.59	4.65	10.68	18.11	24.36	24.49	29.31	29.31	33.48	33.87	33.87	34.66	35.95	33.87	34.4	33.87	33.65	33.87	33.87	33.87	20.2	19.69
SPP South - Energy Price - 1H2023	1617	6/5/2027	6/5/2027	18.11	18.11	18.11	18.11	18.11	18.11	27.97	28.86	30.41	31.19	31.19	34.33	36.65	40.17	42.57	36.65	36.65	32.86	31.19	31.19	31.19	31.19	19.69	19.69
SPP South - Energy Price - 1H2023	1618	6/6/2027	6/6/2027	19.69	19.69	20.2	20.2	20.2	19.69	30.41	28.85	30.41	30.41	30.41	30.41	30.41	30.41	30.41	30.41	31.19	31.19	31.19	31.19	31.19	31.19	19.69	19.69
SPP South - Energy Price - 1H2023	1619	6/7/2027	6/7/2027	21.67	21.67	21.67	20.93	21.67	21.67	36.66	36.66	36.66	37.78	37.78	38.56	38.39	37.34	36.83	36.83	36.83	36.66	38.42	36.72	37.09	36.66	22.24	23.19
SPP South - Energy Price - 1H2023	1620	6/8/2027	6/8/2027	23.56	24.2	24.2	22.99	24.11	23.73	38.95	39.33	40.26	39.33	47.14	47.24	43.46	50.66	50.67	50.67	47.24	40.32	40.68	49.89	49.72	43.46	26.75	23.56
SPP South - Energy Price - 1H2023	1621	6/9/2027	6/9/2027	24.17	22.14	24.83	24.55	24.83	24.83	39.4	40.09	43.58	43.71	50.4	50.83	51.3	51.88	54.39	54.05	52.44	51.87	51.53	50.97	50.87	48.49	27.57	26.2
SPP South - Energy Price - 1H2023	1622	6/10/2027	6/10/2027	25.64	25.02	26.58	26.08	26.17	26.2	39.07	39.9	40.92	43.61	49.69	49.77	50.84	51.32	52.29	55.16	52.74	50.84	50.84	49.95	43.61	41.47	24.29	23.65
SPP South - Energy Price - 1H2023	1623	6/11/2027	6/11/2027	22.79	23.04	22.72	22.36	22.53	23.53	36.31	36.61	36.31	36.31	36.31	36.31	36.31	36.61	36.59	36.61	36.31	36.31	36.31	36.98	36.61	36.61	23.54	21.63
SPP South - Energy Price - 1H2023	1624	6/12/2027	6/12/2027	19.99	19.92	19.85	21.63	19.85	19.85	30.66	33.4	33.4	33.41	33.4	33.4	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	21.63	21.63
SPP South - Energy Price - 1H2023	1625	6/13/2027	6/13/2027	21.63	19.85	19.85	19.85	21.58	19.85	30.66	30.66	33.41	33.41	34.29	34.29	34.29	34.29	35.21	33.41	33.41	33.41	34.29	34.29	37.22	35.27	22.2	21.63
SPP South - Energy Price - 1H2023	1626	6/14/2027	6/14/2027	21.75	21.75	21.75	21.75	21.75	23.74	34.26	34.26	34.26	34.26	35.66	34.26	34.26	36.83	38.21	34.26	36.83	36.83	36.83	36.83	36.83	34.26	21.75	7.07
SPP South - Energy Price - 1H2023	1627	6/15/2027	6/15/2027	6.15	5.59	5.11	4.65	4.51	20.87	6.12	3.75	6.06	33.06	33.75	37.85	33.06	33.06	36.83	36.83	37.85	36.83	36.83	36.83	36.83	36.83	22.76	22.76
SPP South - Energy Price - 1H2023	1628	6/16/2027	6/16/2027	21.72	21.19	21.72	21.72	21.72	21.72	31.79	31.79	33.25	35.69	35.66	36.43	36.43	36.74	36.43	36.43	36.43	36.43	36.74	36.74	36.74	36.74	23.11	21.72
SPP South - Energy Price - 1H2023	1629	6/17/2027	6/17/2027	21.11	21.11	6.89	4.65	21.1	21.11	33.39	33.39	33.39	35.27	38.21	38.21	36.83	38.21	38.21	38.37	38.57	38.49	38.57	38.57	38.93	38.57	23.95	23.02
SPP South - Energy Price - 1H2023	1630	6/18/2027	6/18/2027	23.48	23.48	23.48	23.48	23.63	23.63	36.83	38.05	38.84	39.22	39.22	39.95	39.22	39.92	40.65	43.32	43.32	40.11	40.62	41.71	42.32	41.17	26.89	26.36
SPP South - Energy Price - 1H2023	1631	6/19/2027	6/19/2027	25.03	24.12	24.12	23.93	23.66	23.9	36.26	36.45	37.63	42.57	44.07	53.13	53.65	55.85	44.04	42.57	40.74	42.57	44.28	45.61	37.24	37.24	25.5	25
SPP South - Energy Price - 1H2023	1632	6/20/2027	6/20/2027	24.57	23.89	23.48	23.48	23.48	23.48	36.26	36.26	39.47	44.03	44.17	44.17	51.7	52.47	55.85	44.07	44.07	43.8	44.17	45.61	46.07	42.85	27.57	26.65
SPP South - Energy Price - 1H2023	1633	6/21/2027	6/21/2027	26.12	25.56	24.92	24.63	24.36	25.56	39.24	39.9	40.32	39.9	39.9	42.68	40.32	42.43	41.82	40.32	39.9	40.32	40.32	43.11	44.65	40.37	27.57	25.79
SPP South - Energy Price - 1H2023	1634	6/22/2027	6/22/2027	26.37	25.79	25.21	24.88	25.19	25.21	40.29	40.71	44.24	44.26	40.71	40.71	52.09	52.59	52.61	52.58	45.13	45.13	45.13	45.13	44.08	43.02	27.57	26.22
SPP South - Energy Price - 1H2023	1635	6/23/2027	6/23/2027	26.79	28.6	27.57	27.48	27.57	27.57	40.93	41.37	45.03	41.37	51.22	42.57	46.27	47.93	53.62	43.34	53.51	43.93	42.35	44.81	46.27	46.65	31.2	27.67
SPP South - Energy Price - 1H2023	1636	6/24/2027	6/24/2027	27.57	26.52	27.57	27.57	27.57	26.66	41.29	48.88	48.99	52.92	54.02	52.95	53.57	54.4	54.54	54.26	54.21	54.08	54.21	53.51	54.02	52.65	35.05	30.46
SPP South - Energy Price - 1H2023	1637	6/25/2027	6/25/2027	28.6	28.6	28.6	27.57	29.02	29.39	41.99	43.59	43.88	48.63	51.12	51.26	51.98	52.27	52.67	55.3	51.26	47.72	42.73	43.32	46.45	41.99	27.57	27.57
SPP South - Energy Price - 1H2023	1638	6/26/2027	6/26/2027	27.28	25.39	25.53	24.99	25.35	25.46	39.16	40.85	42.57	42.57	42.74	45.08	46.69	49.24	54.6	50.87	45.72	45.72	45.72	42.57	45.5	39.26	24.99	24.33
SPP South - Energy Price - 1H2023	1639	6/27/2027	6/27/2027	24.99	24.33	24.77	24.7	24.7	24.7	38.36	38.21	38.14	38.14	38.32	38.79	40.49	40.96	42.57	42.57	42.46	42.57	40.34	42.34	42.33	38.6	24.99	24.03
SPP South - Energy Price - 1H2023	1640	6/28/2027	6/28/2027	23.58	21.05	21.59	22.96	22.96	23.58	38.13	38.13	38.17	38.35	38.49	39.84	38.49	39.93	38.49	38.13	38.21	38.13	38.13	38.13	36.83	36.83	21.05	21.18
SPP South - Energy Price - 1H2023	1641	6/29/2027	6/29/2027	21.18	21.26	23.11	21.18	23.11	23.11	37.64	38.27	38.33	38.7	38.7	38.7	39.58	38.7	42.68	40.07	39.99	38.7	38.34	38.73	40.07	38.7	25.91	23.73
SPP South - Energy Price - 1H2023	1642	6/30/2027	6/30/2027	25.36	24.22	24.2	24.16	24.51	24.22	38.97	37.32	36.83	38.97	38.97	43.49	40.81	40.39	38.97	38.97	38.97	38.97	38.97	38.97	38.97	38.97	24.22	23.58
SPP South - Energy Price - 1H2023	1643	7/1/2027	7/1/2027	26.05	25.4	25.4	25.4	25.4	25.4	34.36	33.39	34.64	34.64	34.81	34.82	35.56	41.44	44.01	42.74	35.43	37.58	40.11	35.43	34.82	35.43	26.05	25.4
SPP South - Energy Price - 1H2023	1644	7/2/2027	7/2/2027	32.71	33.52	32.13	32.38	33.15	35.05	41.35	41.35	42.85	45.25	45.41	47.86	54.47	54.09	55.11	55.35	53.12	54.88	54.85	53.12	51.03	44.81	37.96	38.19
SPP South - Energy Price - 1H2023	1645	7/3/2027	7/3/2027	36.13	33.72	32.13	32.13	35.13	35.05	38.3	41.6	45.45	42.3	45.52	47.23	56.91	57.63	55.89	57.63	52.8	57.63	50.71	45.52	42.73	42.06	36.33	36.08
SPP South - Energy Price - 1H2023	1646	7/4/2027	7/4/2027	36.13	35.23	35.14	33.91	33.15	32.42	37.3	38.3	38.53	42.99	42.3	45.52	45.52	50.29	48.33	45.94	45.52	45.25	45.52	45.52	45.52	45.52	37.96	33.7
SPP South - Energy Price - 1H2023	1647	7/5/2027	7/5/2027	34.71	32.69	34.38	33.91	33.16	35.88	41.35	41.35	41.35	42.75	46.57	53.12	57.44	55.55	57.02	56.71	53.63	53.12	53.12	43.89	46.68	47.21	36.33	37.58
SPP South - Energy Price - 1H2023	1648	7/6/2027	7/6/2027	38.19	34.64	34.63	34.63	35.33	34.64	45.35	48.48	49.91	56.85	58.02	58.55	60.72	61.89	65.23	65.23	65.28	63.33	63.15	56.85	58.98	58.69	48.58	51.53
SPP South - Energy Price - 1H2023	1649	7/7/2027	7/7/2027	45.43	40.59	38.19	38.19	39.61	40.04	49.2	48.88	55.37	55.43	60.15	62.84	64.42	62.44	57.02	56.94	56.82	61.67	62.1	60.34	56.33	57.81	50.63	44.44
SPP South - Energy Price - 1H2023	1650	7/8/2027	7/8/2027	40.56	38.19	38.19	39.11	39.61	40.56	47.18	49.62	51.48	53.97	54.3	54.73	55.59	54.99	63.16	58.64	63.3	62.57	60.7	60.7	54.88	56.6	49.96	40.99
SPP South - Energy Price - 1H2023	1651	7/9/2027	7/9/2027	42.56	40.5	39.61	39.61	38.19	38.96	43.73	46.59	51.91	53.62	55.11	54.93	59.84	59.32	62.71	62.02	62.84	62.77	61.32	58.07	58.18	57.94	49.34	49.21
SPP South - Energy Price - 1H2023	1652	7/10/2027	7/10/2027	46.13	43.17	40.65	39.78	39.62	39.33	46.52	46.13	45.99	47.23	52.29	53.72	58.17	58.97	58.97	58.97	58.97	58.97	59.58	58.97	58.97	58.97	46.89	40.65
SPP South - Energy Price - 1H2023	1653	7/11/2027	7/11/2027	38.96	38.19	38.19	37.88	38.19	38.19	44.18	44.34	45.52	45.52	47.23	48.38	50.08	51.66	58.97	52.63	58.97	52.25	51	57.42	52.63	48.45	38.19	37.84
SPP South - Energy Price - 1H2023	1654	7/12/2027	7/12/2027	37.84	36.95	36.1	35.63	34.87	37.84	45.54	45.3	46.01	48.87	51.82	52.83	53.74	43.47	44.85	44.18	43.47	44.12	45.19	45.05	44.97	45.11	37.71	35.5
SPP South - Energy Price - 1H2023	1655	7/13/2027	7/13/2027	34.45	34.83	36.4	34.45	34.45	38.19	44.68	48.06	45.91	48.55	55.84	56.44	56.58	56.58	56.6	56.6	56.58	56.58	49.26	52.74	51.65	45.64	38.19	38.09
SPP South - Energy Price - 1H2023	1656	7/14/2027	7/14/2027	38.19	37.51	37.17	36.19	37.83	38.19	44.17	45.37	45.58	47.08	44.03	47.15	50.5	50.04	48.94	51.88	52.89	49.78	50.47	50.6	44.16	45.72	35.67	35.92
SPP South - Energy Price - 1H2023	1657	7/15/2027	7/15/2027	35.92	35.84	35.92	35.93	35.93	35.92	43.09	45.43	42.51	45.43	51.41	51.48	52.3	51.91	51.41	50.91	46.41	45.43	47.31	52.45	45.43	53.08	42.61	38.68
SPP South - Energy Price - 1H2023	1658	7/16/2027	7/16/2027	38.48	34.84	33.91	33.91	34.84	35.08	43.76	47.88	47.88	52.9	51.14	49.9	50.82	51.46	50.87	49.29	49.43	50.07	51.46	51.46	50.87	51.49	43.19	38.68
SPP South - Energy Price - 1H2023	1659	7/17/2027	7/17/2027	38.19	38.19	37.13	36.32	35.16	34.84	43.24	43.71	47.07	46.91	46.8	45.52	51.92	54.08	53.6	53.6	53.6	52.7	54.07	50.68	49.21	48.41	38.19	36.86

SPP South - Energy Price - 1H2023	1660	7/18/2027	7/18/2027	34.84	32.69	32.74	33.91	34.84	34.77	40.43	40.81	41.76	41.53	42.04	45.52	43.21	44.19	42.41	45.94	44.41	41.77	43.04	47.23	54.09	52.85	38.63	38.32
SPP South - Energy Price - 1H2023	1661	7/19/2027	7/19/2027	38.16	36.63	35.54	36.8	36.77	36.52	43.57	47.07	49.64	51.05	55.1	55.1	58.71	55.83	58.87	58.89	58.84	61.16	55.92	55.22	57.33	55.22	46.96	46.6
SPP South - Energy Price - 1H2023	1662	7/20/2027	7/20/2027	38.19	39.07	36.41	36.32	38.08	38.16	44.74	50.05	54.52	54.75	49.62	57.24	58.81	58.2	59.22	56.2	59.84	55.5	58.87	55.51	55.51	55.58	42.54	38.19
SPP South - Energy Price - 1H2023	1663	7/21/2027	7/21/2027	36.81	34.17	33.39	34.88	34.12	33.24	41.62	40.68	42.54	42.13	44.47	50.85	52.62	42.54	49.51	49.68	54.79	46.97	54.77	54.77	42.54	44.33	35.78	34.8
SPP South - Energy Price - 1H2023	1664	7/22/2027	7/22/2027	33.51	34.41	35.36	34.28	34.8	37.75	41.8	41.8	43.87	46.09	52.46	53.53	53.75	53.75	54.07	53.79	53.75	53.75	53.75	53.75	53.75	53.75	39.66	38.19
SPP South - Energy Price - 1H2023	1665	7/23/2027	7/23/2027	36.2	35.31	37.04	33.99	36.93	36.93	41.45	45.41	45.76	50.77	52.16	53.25	54.56	52.04	54.81	55.31	55.46	54.57	53.5	53.25	53.25	51.02	39.61	38.19
SPP South - Energy Price - 1H2023	1666	7/24/2027	7/24/2027	36.8	36.2	35.23	35.58	36.2	36.54	42.88	42.44	43.27	45.52	45.52	48.41	50.08	49.28	51.22	51.73	51.53	49.86	49.42	49.86	47.94	45.52	37.16	33.82
SPP South - Energy Price - 1H2023	1667	7/25/2027	7/25/2027	32.22	32.22	32.22	32.22	33.23	32.22	38.41	38.41	38.41	38.41	39.79	44.1	45.52	46.93	50.49	51.02	50.82	46.87	47.23	45.52	45.52	45.46	38.07	35.52
SPP South - Energy Price - 1H2023	1668	7/26/2027	7/26/2027	35.63	32.1	32.22	33.89	33.13	35.02	41.62	40.95	40.95	41.32	43.38	46.46	53.06	48.3	52.05	51.73	53.07	53.07	53.29	53.07	48.35	46.48	38.19	36.18
SPP South - Energy Price - 1H2023	1669	7/27/2027	7/27/2027	34.27	35.57	33.04	35.37	32.35	35.16	41.21	41.59	41.59	45.82	47.12	45.77	52.92	53.45	53.45	53.45	53.45	53.16	53.45	53.01	49.95	48.49	38.19	38.19
SPP South - Energy Price - 1H2023	1670	7/28/2027	7/28/2027	36.97	36.37	33.33	32.68	32.68	34.77	41.94	43.18	43.82	49.53	52.04	53.94	53.94	53.94	54.12	54.75	54.47	53.94	53.93	53.63	53.49	43.92	38.63	39.61
SPP South - Energy Price - 1H2023	1671	7/29/2027	7/29/2027	33.03	36.74	38.19	37.57	37.49	39.06	47.09	46.24	43.9	52.8	54.45	54.6	56.93	58.2	54.92	56.32	55.34	54.98	54.92	54.57	54.45	52.71	39.59	39.06
SPP South - Energy Price - 1H2023	1672	7/30/2027	7/30/2027	38.19	38.94	38.19	38.19	39.61	39.78	46.13	45.88	49.01	52.99	53.27	52.68	53.95	55.52	57.75	59.53	56.48	54.54	54.59	54.02	53.67	53.67	39.61	38.15
SPP South - Energy Price - 1H2023	1673	7/31/2027	7/31/2027	38.19	35.53	32.73	32.84	35.53	32.73	41.48	45.52	46.11	47.23	58.62	58.62	58.62	58.62	58.62	59.02	59.01	52.88	57.77	47.23	46.14	46.14	37.16	37.16
SPP South - Energy Price - 1H2023	1674	8/1/2027	8/1/2027	36.45	34.1	33.71	33	35.87	33	31.34	31.34	31.34	31.34	36.8	38.94	41.45	43.89	47.1	44.01	47.01	46.8	46.42	47.1	46.65	40.24	39.01	38.76
SPP South - Energy Price - 1H2023	1675	8/2/2027	8/2/2027	36.37	35.55	35.55	30.88	35.26	37.11	40.04	42.4	44.47	46.2	48.8	50.2	52.55	54.71	54.71	56.31	56.85	55.85	53.08	55.41	50.51	50	41.75	45.73
SPP South - Energy Price - 1H2023	1676	8/3/2027	8/3/2027	44.34	41.39	40.21	38.57	38.76	40.99	51.33	48.4	51.88	54.98	55.97	56.84	60.33	63.1	64.34	64.43	64.39	64.41	64.34	61.06	59.89	55.97	47.84	47.74
SPP South - Energy Price - 1H2023	1677	8/4/2027	8/4/2027	41.77	35.25	38.76	38.76	40.21	39.97	48.83	48.83	48.26	55.88	56.9	56.9	57.82	59.45	60.05	57.82	57.48	58.95	56.95	57.1	55.86	56.47	41.77	40.08
SPP South - Energy Price - 1H2023	1678	8/5/2027	8/5/2027	38.76	38.76	35.68	35.68	38.72	36.75	45.62	44.52	52.51	51.92	56.75	56.94	57.49	57.53	57.41	59.38	59.13	57.53	57.27	57.08	53.16	52.19	39.32	38.76
SPP South - Energy Price - 1H2023	1679	8/6/2027	8/6/2027	38.76	38.76	38.73	38.17	38.5	39.79	44.29	45.79	46.05	47.9	50.12	51.28	56.33	56.71	57.08	57.22	56.78	56.91	56.49	56.78	51.66	50.09	39.89	38.76
SPP South - Energy Price - 1H2023	1680	8/7/2027	8/7/2027	38.76	37.59	37.22	37.77	35.68	35.47	33.68	34.5	35.4	35.35	36.8	37.9	44.32	45.31	45.38	48.3	46.65	46.85	39.91	42.41	44.9	40.65	41.56	38.76
SPP South - Energy Price - 1H2023	1681	8/8/2027	8/8/2027	38.91	38.34	39.09	38.76	38.5	38.41	36.56	36.37	36.3	37.32	39.91	41.81	44.93	49.81	50.07	48.31	50.32	48.31	43.6	43.7	44.21	40.58	39	38.76
SPP South - Energy Price - 1H2023	1682	8/9/2027	8/9/2027	37.25	36.54	35.81	38.76	38.76	40.4	46.32	48.92	50.45	56.62	56.92	57.72	57.72	57.72	57.99	58.54	57.79	57.58	53.08	55.38	55.49	49.54	38.76	38.08
SPP South - Energy Price - 1H2023	1683	8/10/2027	8/10/2027	38.76	38.76	38.22	38.21	38.76	38.76	45.43	48.1	48.47	48.47	55.64	55.9	56.48	56.48	56.27	56.76	54.22	53.08	52.2	51.75	52.19	49.57	38.76	38.72
SPP South - Energy Price - 1H2023	1684	8/11/2027	8/11/2027	34.82	34.82	34.86	30.23	31.88	32.63	37.84	38.11	38.11	37.84	38.11	40.04	40.04	40.04	45.94	41.59	42.08	40.72	45.13	42.14	41.55	38.46	29.62	29.62
SPP South - Energy Price - 1H2023	1685	8/12/2027	8/12/2027	29.35	28.63	26.71	27.7	27.13	29.35	35.04	35.04	35.04	35.69	36.18	37.86	40.04	40.04	43.04	44.33	41.54	41.54	42.75	41.54	40.31	37.86	31.3	31.3
SPP South - Energy Price - 1H2023	1686	8/13/2027	8/13/2027	26.28	26.28	27.87	27.33	26.28	26.28	34.59	37.31	34.59	37.66	35.36	37.67	39.89	40.04	41.54	41.54	41.54	41.54	42.98	41.54	39.7	35.4	29.08	29.62
SPP South - Energy Price - 1H2023	1687	8/14/2027	8/14/2027	28.87	28.26	26.28	27.33	28.87	28.93	27.41	27.41	29.34	31.17	31.17	35.24	35.49	37.83	38.08	38.33	38.33	38.03	36.6	34.15	30.24	30.03	29.37	29.62
SPP South - Energy Price - 1H2023	1688	8/15/2027	8/15/2027	28.97	28.26	26.28	26.28	26.28	26.2	24.96	24.96	24.96	27.75	29.22	34.41	29.22	36.52	34.6	32.51	29.22	34.6	36.8	37.92	34.6	34.62	32.27	29.7
SPP South - Energy Price - 1H2023	1689	8/16/2027	8/16/2027	35.66	33.51	33.11	32.57	32	34.55	40.96	40.96	40.6	40.96	41.81	49.08	47.65	45.16	52.36	52.57	52.57	45.06	50.4	49.59	50	43.77	37.63	35.68
SPP South - Energy Price - 1H2023	1690	8/17/2027	8/17/2027	37.74	36.8	36.76	35.36	35.36	36.8	44.1	43.71	43.72	47.78	46.03	52.15	51.56	55.19	55.78	57.3	55.78	56.91	55.78	54.88	50.19	48.96	38.76	37.51
SPP South - Energy Price - 1H2023	1691	8/18/2027	8/18/2027	38.76	38.76	36.6	36.33	36.33	38.76	45.8	45.2	44.71	45.72	49.51	48.73	50.68	51.31	57.66	58.48	58.36	58.36	58.48	58.44	52.99	50.21	38.76	38.36
SPP South - Energy Price - 1H2023	1692	8/19/2027	8/19/2027	38.76	38.76	38.76	38.57	38.76	39.79	45.98	44.86	44.86	49.8	53.53	54.56	52.4	58.08	58.01	58.21	59.81	58.1	59.39	58.45	57.72	55.62	48.09	44.6
SPP South - Energy Price - 1H2023	1693	8/20/2027	8/20/2027	41.2	40.21	41.17	40.5	40.26	40.85	51.55	47.84	48.24	46.25	56.22	56.23	56.23	56.97	62.72	60.05	60.02	58.75	58.75	56.23	55.2	51.97	43.98	39.62
SPP South - Energy Price - 1H2023	1694	8/21/2027	8/21/2027	38.76	38.76	38.76	38.76	38.76	38.76	36.8	38.63	36.8	39.13	48.24	48.86	48.62	49.96	49.44	52.92	53.87	56.45	53.68	49.44	48.99	49.18	44.91	43.14
SPP South - Energy Price - 1H2023	1695	8/22/2027	8/22/2027	41.81	38.76	38.76	38.48	35.61	38.76	36.8	36.8	39.13	45.67	48.72	48.86	49.44	50.31	49.44	52.28	55.78	52.77	52.28	49.44	49.44	49.05	46.68	41.55
SPP South - Energy Price - 1H2023	1696	8/23/2027	8/23/2027	41.55	38.76	38.76	41.55	40.21	42.71	52.19	55.69	55.71	56.65	59.31	60.93	63.4	63.72	65.05	65	65.05	64.89	63.52	62.93	58.14	56.52	52.41	41.55
SPP South - Energy Price - 1H2023	1697	8/24/2027	8/24/2027	38.98	38.76	38.76	36.5	36.5	38.76	50.43	52.45	48.25	55.15	58.72	58.72	58.72	58.68	62.52	58.74	55.39	53.18	59.29	59.14	52.03	52.21	40.4	39.3
SPP South - Energy Price - 1H2023	1698	8/25/2027	8/25/2027	38.76	37.48	38.76	38.76	36.82	38.76	45.51	47.41	49.7	57.92	58.9	60.16	65.1	67.21	67.26	67.87	71.73	67.26	67.21	67.21	62.87	59.13	54.57	50.53
SPP South - Energy Price - 1H2023	1699	8/26/2027	8/26/2027	42.83	40.88	38.76	41.07	41.2	44.02	53.98	54.98	55.67	59.6	59.61	63.45	65.54	67.42	67.89	67.89	67.89	67.89	61.79	63.48	60.23	59.6	53.3	47.25
SPP South - Energy Price - 1H2023	1700	8/27/2027	8/27/2027	43.69	43.69	40.77	43.69	44.92	48.8	58.84	58.91	58.98	59.62	63.81	66.86	65.27	64.64	67.51	68.47	67.55	67.51	65.26	59.75	59.21	57.02	44.62	44.98
SPP South - Energy Price - 1H2023	1701	8/28/2027	8/28/2027	41.13	40.77	40.77	40.77	40.77	40.77	38.72	38.72	39.9	46.75	51.72	52.88	55.04	55.04	59.12	59.12	59.12	55.04	58.14	55.04	47.34	46.64	41.42	40.98
SPP South - Energy Price - 1H2023	1702	8/29/2027	8/29/2027	43.69	40.21	38.85	38.76	38.76	40.21	38.71	38.6	38.32	38.71	38.82	48.83	51.93	51.59	51.55	52.09	47.36	41.49	43.56	42.91	46.64	46.64	43.88	40.77
SPP South - Energy Price - 1H2023	1703	8/30/2027	8/30/2027	38.76	38.76	38.63	36.2	35.97	36.07	40.59	39.93	40.04	40.47	45.31	47.58	44.85	47.81	48.05	48.22	48.22	48.36	48.22	48.22	48.22	48.49	43.26	42.67
SPP South - Energy Price - 1H2023	1704	8/31/2027	8/31/2027	40.93	41.63	41.63	40.86	40.21	41.49	49.11	47.4	47.43	50.73	55.25	55.89	55.9	55.9	57.08	56.54	56.08	56.26	56.26	55.31	55.85	54.95	46.02	43.48
SPP South - Energy Price - 1H2023	1705	9/1/2027	9/1/2027	39.23	39.04	37.55	37.45	37.63	37.63	41.82	41.25	40.82	40.82	40.82	40.82	41.25	40.82	41.25	41.95	43.21	53.24	44.98	45.69	50.05	42.24	37.63	37.63
SPP South - Energy Price - 1H2023	1706	9/2/2027	9/2/2027	37.28	37.29	37.33	37.21	37.18	38.89	44.29	40.6	40.6	40.6	40.75	40.6	40.6	42.6	45.42	42.65	45.42	52.93	52.94	52.43	49.85	51.72	43.99	41.68
SPP South - Energy Price - 1H2023	1707	9/3/2027	9/3/2027	41.55	41.45	39.04	39.6	40.58	40.46	46.1	45	45.79	52.02	52.37	52.45	52.46	53.04	60.33	60.33	59.74	58.51	52.96	52.48	52.46	52.45	38.48	37.63
SPP South - Energy Price - 1H2023	1708	9/4/2027	9/4/2027	37.63	40.9	39.72	39.04	37.63	37.63	50.68	50.19	50.68	52.57	63.92	67.64	67.64	67.64	69.1	70.06	70.76	67.03	67.64	67.64	67.64	67.64	40.94	37.09
SPP South - Energy Price - 1H2023	1709	9/5/2027	9/5/2027	33.92	33.55	36.98	33.55	33.55	33.92	47.39	45.18	45.69	45.63	52.57	55.14	65.83	67.23	67.64	68.16	67.64	67.64	66.56	66.76	67.64	58.23	37.48	36.95
SPP South - Energy Price - 1H2023	1710	9/6/2027	9/6/2027	36.94	36.94	36.98	33.55	38.68	38.56	43.05	42.86	40.69	45	43.76	52.15	52.46	48.3	52.46	51.87	47.72	51.87	52.55	47.4	45.32	42.22	39.04	33.92
SPP South - Energy Price - 1H2023	1711	9/7/2027	9/7/2027	37.63	34.46	36.98	34.46	34.46	37.63	41.62	41.62	41.18	41.62	41.18	45.44	53.77	49.11	46.14	52.68	53.77	44.34	49.28	45.94	46.64	41.62	35.24	33.54
SPP South - Energy Price - 1H2023	1712	9/8/2027	9/8/2027	33.97	34.9	33.97	34.9	34.9	37.63	44.45	42.28	44.45	48.53	54.25	54.28	54.41	54.78	54.51	54.39	54.39	53.96	49.68	53.89	50.76	46.69	41.99	41.38
SPP South - Energy Price - 1H2023	1713	9/9/2027	9/9/2027	37.63	37.74	37.51	37.63	38.68	39.04	45.49	45.89	43.91	41.45	43.08	45.29	44.73	44.3	43.26	43.23	41.15	44.07	45.06	44.73	42.3	41.02	37.63	37.63
SPP South - Energy Price - 1H2023	1714	9/10/2027	9/10/2027	33.47	32.59	33.47	33.47	33.47	33.47	40.2	40.2	39	37.6	39	39.07	39.99	39.89	40.2	40.2	40.2	40.2	40.61	40.2	40.2	40.2	33.47	32.59
SPP South - Energy Price - 1H2023	1715	9/11/2027	9/11/2027	32.59	32.59	32.59	32.59	32.59	33.47	45.08	43.89	43.89	45.08	45.08	45.08	45.08	45.08	45.08	49.18	50.68	50.68	57.25	52.57	50.68	50.68	33.47	32.59
SPP South - Energy Price - 1H2023	1716	9/12/2027	9/12/2027	29.85	29.85	29.85	29.85	29.85	29.85	41.09	43.89	43.89	43.89	45.08	49.12	50.68	52.57	50.68	52.57	50.68	50.68	50.68	52.53	46.84	47.36	36.52	33.47
SPP South - Energy Price - 1H2023	1717	9/13/2027	9/13/2027	33.1	33.1	33.1	33.1	33.1	37.63	40.47	40.64	40.68	40.23	40.23	40.23	48.74	51.48	51.53	51.83	51.83	51.33	50.99	49.16	47.31	45.19	37.63	36.23
SPP South - Energy Price - 1H2023	1718	9/14/2027	9/14/2027	32.47	32.47	32.47	32.47	32.47	35.74	39.58	39.58	39.21	37.61	37.6	39.21	39.21	39.21	39.58	39	39.21	39.58	39.58	39.58	39.21	35.48	28.98	28.98
SPP South - Energy Price - 1H2023	1719	9/15/2027	9/15/2027	29.09	29.09	29.09	29.09	29.09	29.58	37.6	37.6	37.6	37.6	37.6	37.6	34.38	37.6	39.34	39	39	39.72	42.69	39.72	39.34	37.6	32.47	32.6
SPP South - Energy Price - 1H2023	1720	9/16/2027	9/16/2027	32.47	32.47	32.47	32.47	32.47	32.47	38.09	37.6	35.04	37.6	37.6	37.6	39	37.6	39	40.08	40.08	44.76	51.41	44.12	41.09	40.48	36.42	36.87
SPP South - Energy Price - 1H2023	1721	9/17/2027	9/17/2027	32.54	32.54	32.54	32.54	35.95	37.19	39.65	39.65	39.65	39.28	39.28	39	39.28	39.28	37.6	39.28	39	39.28	39.28	39.28	39	37.6	29.04	29.04
SPP South - Energy Price - 1H2023	1722	9/18/2027	9/18/2027	29.04	29.04	29.04	29.04	29.04	28.72	39.11	12.58	7.36	10.2	4.27	2.94	15.73	21.48	31.8	24.15	31.58	42.67	42.67	43.82	42.67	42.67	29.04	29.04
SPP South - Energy Price - 1H2023	1723	9/19/2027	9/19/2027	29.04	29.04	29.04	13.74	12.6	11.62	12.97	2.73	2.77	2.23	10.58	9.63	15.73	17.82	20.42	39.11	39.11	40.54	43.82	39.11	39.11	39.11	23.44	16.74
SPP South - Energy Price - 1H2023	1724	9/20/2027	9/20/2027	14.28	14.28	14.47	13.74	16.74	24.83	13.28	30.03	30.03	34.48	34.7	34.7	34.7	37.12	37.16	39.39	37.74	40.03	43.01	39	37.6	34.7	28.1	27.69
SPP South - Energy Price - 1H2023	1725	9/21/2027	9/21/2027	29.73	29.73	29.73	29.73	30.52	30.52	37.59	37.59	37.59	37.6	37.6	37.6	41.25	46.89	47.86	48.16	48.16	47.73	47.32	45.09	43.33	37.6	30.52	30.51
SPP South - Energy Price - 1H2023	1726	9/22/2027	9/22/2027	29.67	29.67	29.67	29.67	30.46	30.46	37.6	37.53	37.53	37.53	37.6	37.6	38.69	39	39	38.69	37.6	47.64	45.73	44.66	39	37.53	30.46	30.46
SPP South - Energy Price - 1H2023	1727	9/23/2027	9/23/2027	31.49	31.49	31.49	31.91	31.49	32.34	39.08	37.6	39	37.67	39.45	39.45	40.84	40.85	39.45	40.85	39.45	50.34	50.02	46.33	40.85	39.45	34.76	32.34
SPP South - Energy Price - 1H2023	1728	9/24/2027	9/24/2027	29.54	29.54	30.32	30.32	30.32	30.32	37.39	37.39	37.39	37.08	37.39	37.08	37.08	37.08	37.08	37.08	37.08	37.39	37.39	37.08	32.96	33.55	27.11	27.11
SPP South - Energy Price - 1H2023	1729	9/25/2027	9/25/2027	27.11	27.11	23.67	13.74	12.6	11.62	12.97	12.58	11	9.35	11.7	9.63	12.2	17.82	20.42	36.51	23.45	36.51	36.51	36.51	24.2	22.46	15.19	15.51
SPP South - Energy Price - 1H2023	1730	9/26/2027	9/26/2027	5.95	2.92	2.88	2.72	2.99	3.12	4.82	3.68	3.37	3.06	0	0	4.55	6.05	5.57	19.73	18.33	39.32	39.78	25.44	19.73	36.51	3.47	2.95
SPP South - Energy Price - 1H2023	1731	9/27/2027	9/27/2027	2.99	2.92	2.88	2.72	2.99	12.94	11.04	9.97	9.42	9.57	10.4	18.89	30.53	30.53	35.03	35.04	35.14	35.28	37.6	37.6	35.28	35.14	27.54	27.54
SPP South - Energy Price - 1H2023	1732	9/28/2027	9/28/2027	28.91	28.9	28.9	28.91	28.9	28.91	37.6	34.18	34.18	34.18	37.6	39	37.6	37.6	39.12	39	39.49	41.11	42.2	41.06	40.61	39.12	32.38	32.38
SPP South - Energy Price - 1H2023	1733	9/29/2027	9/29/2027	31.7	31.7	29.05	31.7	31.7	32.55	39.29	39.29	39.67	40.71	40.66	39.67	40.51	41.55	41.12	41.1	41.25	41.25	42.38	41.3	40.08	39.29	32.08	31.7
SPP South - Energy Price - 1H2023	1734	9/30/2027	9/30/2027	31.95	31.95	31.13	32.82	32.82	32.82	39.55	39.55	37.6	35.21	34.57	34.57	34.57	37.6	37.6	37.6	37.6	39.94	37.6	37.6	34.57	34.57	29.28	29.28
SPP South - Energy Price - 1H2023	1735	10/1/2027	10/1/2027	20.36	20.36	20.36	20.36	20.36	20.36	31.63	31.39	31.27	31.9	31	31.13	31.96	32.93	31.96	31	32.04	32.64	32.56	32.86	31.74	31	20.36	20.36
SPP South - Energy Price - 1H2023	1736	10/2/2027	10/2/2027	20.36	20.36	20.36	20.36	20.36	20.36	27.59	27.59	24.37	10.24	7.71	10.18	11.31	12.92	12.47	10.75	14.63	13.46	19.96	13.71	13.21	14.71	11.25	10.86
SPP South - Energy Price - 1H2023	1737	10/3/2027	10/3/2027	10.64	10.39	10.08	20.36	20.36	20.36	27.59	27.59	27.58	7.28	9.39	8.52	12.17	7.01	15.28	15.85	27.59	31.48	32.37	31.48	31.48	30.64	22.61	22.61
SPP South - Energy Price - 1H2023	1738	10/4/2027	10/4/2027	21.56	19.43	19.43	19.43	19.43	21.16	34.96	32.86	29.77	29.77	29.77	32.86	32.86	34.96	34.96	34.96	35.31	35.31	36.63	35.31	34.96	34.96	21.56	21.56
SPP South - Energy Price - 1H2023	1739	10/5/2027	10/5/2027	20.63	20.63	20.63	20.63	20.63	20.63	33.72	33.72	32.86	29.57	29.21	28.68	30.41	30.86	31.76	31.5	31.5	31.5	30.28	30.17	28.68	28.68	18.62	10.95
SPP South - Energy Price - 1H2023	1740	10/6/2027	10/6/2027	10.68	10.69	10.62	18.31	18.31	18.31	28.27	28.86	28.27	9.31	28.27	26.01	28.27	28.27	28.27	28.27	28.27	32.86	32.86	32.86	32.86	33.25	20.83	18.31
SPP South - Energy Price - 1H2023	1741	10/7/2027	10/7/2027	18.82	18.82	10.08	9.62	9.25	9.45	12.4	13.48	8.23	9.31	9.09	28.95	28.95	28.95	28.96	28.96	28.96	28.96	34.03	32.86	34.03	34.03	20.87	18.82
SPP South - Energy Price - 1H2023	1742	10/8/2027	10/8/2027	18.91	20.97	20.97	20.97	20.97	20.97	34.17	34.17	34.17	34.17	34.17	34.17	34.17	34.17	34.17	34.17	34.17	34.49	34.49	35.09	34.49	34.17	21.53	21.53

SPP South - Energy Price - 1H2023	1743	10/9/2027	10/9/2027	21.53	21.53	21.53	21.53	21.53	25.04	33.68	32.71	32.24	32.35	33.94	33.94	33.94	33.94	33.94	29.18	33.94	34.51	34.51	33.94	29.18	28.42	18.91	18.91
SPP South - Energy Price - 1H2023	1744	10/10/2027	10/10/2027	18.91	18.91	20.97	21.53	21.53	21.53	28.42	28.42	29.18	29.18	29.18	29.18	28.42	28.42	28.42	29.18	28.42	29.18	29.18	28.42	28.42	28.42	20.97	20.97
SPP South - Energy Price - 1H2023	1745	10/11/2027	10/11/2027	20.49	20.49	20.83	23.23	23.23	24.85	34.31	34.18	34.09	39.21	36.14	34.09	38.83	33.52	39.37	42.34	43.45	43.45	43.43	39.29	39.37	33.52	25.04	25.04
SPP South - Energy Price - 1H2023	1746	10/12/2027	10/12/2027	25.04	21.1	21.1	24.15	25.98	25.98	38.93	36.49	36.75	36.13	35.57	34.61	32.86	32.86	32.86	32.86	32.86	34.35	34.35	34.35	34.35	34.35	21.1	19.03
SPP South - Energy Price - 1H2023	1747	10/13/2027	10/13/2027	18.69	18.69	18.69	18.69	19.55	23.37	32.86	33.82	33.82	34.91	34.09	35.31	33.82	33.82	33.82	33.82	33.82	33.82	35.68	35.71	39.75	39.75	25.04	25.04
SPP South - Energy Price - 1H2023	1748	10/14/2027	10/14/2027	25.04	25.98	25.04	25.21	26.57	25.93	37.03	36.54	34.09	32.86	32.86	32.86	34.09	29.27	33.9	32.86	33.9	41.07	39.85	43.99	43.75	39.85	22.65	20.77
SPP South - Energy Price - 1H2023	1749	10/15/2027	10/15/2027	22.86	24.46	24.04	22.87	24.46	25.04	34.88	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	34.48	40.83	42.82	41.84	39.04	33.1	25.04	20.17
SPP South - Energy Price - 1H2023	1750	10/16/2027	10/16/2027	20.18	20.18	20.18	20.18	21.93	21.8	32.73	29.2	24.69	27.35	28.73	29.13	29.79	30.79	30.88	30.41	30.79	35.21	34.31	33.94	33.94	33.94	20.18	22.23
SPP South - Energy Price - 1H2023	1751	10/17/2027	10/17/2027	22.26	20.18	22.87	23.16	22.86	24.05	33.27	32.15	24.69	27.34	27.34	27.35	27.35	27.34	27.34	29.72	27.34	32.58	33.94	33.74	29.97	30.99	20.18	21.69
SPP South - Energy Price - 1H2023	1752	10/18/2027	10/18/2027	23.65	22.32	22.3	22.19	25.51	25.94	38.74	36.73	35.53	35.53	36.51	38.67	34.09	34.01	39.01	34.01	34.09	44.1	42.34	39.71	40.27	39.77	25.04	24.04
SPP South - Energy Price - 1H2023	1753	10/19/2027	10/19/2027	24.52	25.04	24.45	25.04	25.04	25.04	35.94	34.59	34.58	34.59	34.59	34.58	32.86	34.09	32.86	34.58	34.58	34.59	36.19	34.59	34.59	32.86	21.28	21.28
SPP South - Energy Price - 1H2023	1754	10/20/2027	10/20/2027	19.32	19.32	19.32	19.32	19.32	21.43	34.8	32.86	32.15	32.86	32.86	32.15	34.09	32.86	32.86	32.86	32.15	34.8	32.86	34.09	32.15	21.05	11.25	10.86
SPP South - Energy Price - 1H2023	1755	10/21/2027	10/21/2027	10.64	10.39	13.93	21.88	21.88	23.45	35.4	35.4	32.86	32.68	32.68	32.68	34.09	32.86	35.39	35.39	35.4	35.4	35.4	35.4	35.39	35.39	21.73	21.38
SPP South - Energy Price - 1H2023	1756	10/22/2027	10/22/2027	21.07	19.49	19.49	19.49	21.62	21.62	32.86	32.86	35.04	32.86	32.86	35.04	32.86	35.04	35.04	32.53	32.86	32.86	32.86	34.09	36.02	35.04	23.44	23.09
SPP South - Energy Price - 1H2023	1757	10/23/2027	10/23/2027	23.12	25.04	21.62	21.62	21.62	23.2	28.77	32.25	26.41	14.61	26.41	26.41	26.41	26.41	26.22	26.41	33.94	42.17	36.03	37.12	35.63	35.63	25.04	24.55
SPP South - Energy Price - 1H2023	1758	10/24/2027	10/24/2027	21.62	24.55	25.04	25.04	25.04	24.55	33.94	33.49	26.41	26.41	7.71	9.47	11.31	11.71	3.41	9.57	31.21	37.95	36.03	37.12	35.63	35.63	25.04	24.85
SPP South - Energy Price - 1H2023	1759	10/25/2027	10/25/2027	23.2	23.1	23.13	21.71	24.98	25.98	36.86	37.2	34.23	34.09	35.16	35.16	35.16	43.1	45.55	45.8	45.8	45.92	45.93	45.8	41.27	41.84	25.04	21.71
SPP South - Energy Price - 1H2023	1760	10/26/2027	10/26/2027	22.32	22.32	20.1	20.1	20.1	20.1	33.2	33.2	9.42	8.36	9.09	10.12	11.79	13.36	14.79	15.34	26.92	18.87	25.95	30.95	16.01	14.24	11.25	10.86
SPP South - Energy Price - 1H2023	1761	10/27/2027	10/27/2027	6.99	7.71	7.78	8.08	9.07	19.82	32.86	32.86	32.86	32.86	35.56	38.08	38.27	35.56	41.45	35.56	35.56	35.56	35.56	35.04	32.86	32.86	19.82	19.82
SPP South - Energy Price - 1H2023	1762	10/28/2027	10/28/2027	19.07	19.06	7.78	7.83	19.07	19.07	29.71	29.71	29.71	29.71	29.71	29.71	29.71	29.71	29.71	29.71	32.86	32.86	27.21	29.71	29.71	29.71	19.06	19.06
SPP South - Energy Price - 1H2023	1763	10/29/2027	10/29/2027	14.64	14.62	14.62	14.64	15.17	15.17	32.86	33.46	33.47	35.59	34.56	36.37	36.73	36.52	39.19	38.71	42.13	42.94	42.94	41.54	38.41	34.09	25.04	25.04
SPP South - Energy Price - 1H2023	1764	10/30/2027	10/30/2027	25.04	24.55	24.62	25.04	25.04	25.04	33.94	33.94	35.21	33.94	36.17	35.21	33.94	33.94	33.94	35.21	33.94	35.21	35.21	35.21	33.94	33.24	23.55	23.38
SPP South - Energy Price - 1H2023	1765	10/31/2027	10/31/2027	22.93	20.77	20.77	19.1	20.77	20.77	24.75	24.75	11.93	3.55	4.26	1.84	2	1.78	2.76	2.37	9.43	24.75	24.75	24.75	24.75	24.75	18.26	18.26
SPP South - Energy Price - 1H2023	1766	11/1/2027	11/1/2027	22.53	22.53	22.53	15.32	25.61	26.75	34.91	34.91	33.82	33.82	34.91	34.64	34.64	34.64	37.85	37.07	38.81	42.09	43.33	38.81	33.92	34.91	31.09	31.09
SPP South - Energy Price - 1H2023	1767	11/2/2027	11/2/2027	30.89	31.09	29.92	29.99	28.48	29.86	33.41	34.03	34.03	35.46	34.41	34.03	34.02	35.14	34.25	34.09	39.05	43.54	36.48	34.03	35.14	41.87	31.09	31.09
SPP South - Energy Price - 1H2023	1768	11/3/2027	11/3/2027	28.15	28.4	26.23	28.4	27.16	28.42	36.95	36.79	38.72	40.43	38.74	36.95	33.39	33.39	32.17	32.17	32.17	32.17	32.17	32.17	30.84	29.12	16.36	17.78
SPP South - Energy Price - 1H2023	1769	11/4/2027	11/4/2027	10.21	9.57	9.66	9.72	10.49	11.2	30.4	33.39	33.39	33.39	33.39	30.4	31.27	33.39	33.39	33.39	33.68	38.63	43.17	43.18	40.89	42.9	35.19	34.58
SPP South - Energy Price - 1H2023	1770	11/5/2027	11/5/2027	35.87	31.09	30.07	30.14	30.67	30	36.73	37.36	33.39	30.86	30.86	30.86	30.86	30.86	30.86	30.86	33.39	34.21	34.21	33.39	33.39	30.86	21.99	10.11
SPP South - Energy Price - 1H2023	1771	11/6/2027	11/6/2027	17.6	22.83	22.83	22.83	22.83	22.83	33.78	33.78	33.78	13.34	10.93	9.85	14.5	11.11	10.71	19.24	40.98	42.77	41.95	42.42	38.42	38.42	22.99	22.83
SPP South - Energy Price - 1H2023	1772	11/7/2027	11/7/2027	25.97	25.97	25.97	22.83	25.97	25.97	38.42	42.46	38.42	33.78	38.42	33.78	20.32	10.59	10.71	10.5	33.78	33.78	33.78	33.78	25.16	17.66	15.49	10.11
SPP South - Energy Price - 1H2023	1773	11/8/2027	11/8/2027	9.82	9.57	9.97	9.8	11.18	11.2	11.46	11.15	9.69	8.99	4.19	1.81	1.97	1.75	2.71	10.22	18.26	33.39	31.81	32.24	18.26	14.04	8.33	8.87
SPP South - Energy Price - 1H2023	1774	11/9/2027	11/9/2027	8.68	2.05	1.55	9.72	11.26	26.41	40.66	43.91	39.11	38.84	35.98	38.84	38.84	35.98	35.98	35.98	38.84	38.84	40.53	44.33	35.98	35.98	30.18	30.18
SPP South - Energy Price - 1H2023	1775	11/10/2027	11/10/2027	32.07	34.41	33.5	34.54	32.25	37.04	51.69	51.59	51.86	48.93	47.44	46.02	41.48	41.21	42.17	42.81	45.05	51.01	51.37	50.61	46.21	46.54	34.54	37.04
SPP South - Energy Price - 1H2023	1776	11/11/2027	11/11/2027	34.18	32.25	32.25	32.25	34.12	32.25	41.28	41.36	36.61	36.61	29.5	26.26	7.15	7.69	24.11	7.78	33.39	34.64	36.61	33.39	33.39	33.39	26.99	26.99
SPP South - Energy Price - 1H2023	1777	11/12/2027	11/12/2027	24.33	24.33	24.33	24.33	24.33	24.33	33.67	33.67	33.39	8.99	7.94	7.15	7.15	7.69	23.22	33.39	36.15	36.15	36.67	33.67	35.87	33.77	27.73	27.73
SPP South - Energy Price - 1H2023	1778	11/13/2027	11/13/2027	27.23	18.61	14.39	16.7	18.23	24.33	41.04	24.06	24.94	23.48	15.06	16.81	9.85	10.59	10.54	10.5	11.54	9.11	11.56	10.37	10.49	3.21	1.55	1.74
SPP South - Energy Price - 1H2023	1779	11/14/2027	11/14/2027	1.8	2.05	1.55	1.76	2.42	2.51	3.29	3.11	3.79	12.38	10.59	9.74	9.74	10.59	3.73	10.5	37.34	36	36	10.37	21.57	36	8.33	24.33
SPP South - Energy Price - 1H2023	1780	11/15/2027	11/15/2027	8.68	9.57	9.66	9.72	15.92	21.87	32.53	28.28	28.28	12.51	28.28	31.95	12.71	28.28	30.59	28.28	28.28	32.7	32.7	32.7	30.74	28.28	21.87	21.87
SPP South - Energy Price - 1H2023	1781	11/16/2027	11/16/2027	24.88	26.33	27.63	27.63	28.38	28.38	36.48	36.48	36.48	33.56	36.48	36.48	36.48	36.48	36.48	36.48	36.86	36.48	36.48	36.48	36.48	34.3	27.63	27.63
SPP South - Energy Price - 1H2023	1782	11/17/2027	11/17/2027	27.63	29.04	29.04	27.63	26.13	26.21	38.03	38.46	38.03	38.03	38.03	38.03	38.03	38.47	38.03	38.46	38.47	38.47	40.11	38.47	38.47	38.47	31.09	29.84
SPP South - Energy Price - 1H2023	1783	11/18/2027	11/18/2027	28.57	28.57	25.71	25.71	25.71	28.57	33.39	33.39	32.5	32.5	7.94	11.22	11.22	11.22	11.22	11.22	33.39	34.56	37.51	37.32	37.41	35.81	28.57	29.35
SPP South - Energy Price - 1H2023	1784	11/19/2027	11/19/2027	28.42	28.42	28.42	28.42	28.42	28.42	36.9	36.96	36.9	36.52	36.9	36.9	36.9	36.61	36.52	36.52	36.9	36.9	36.9	36.52	36.52	33.39	27.66	28.42
SPP South - Energy Price - 1H2023	1785	11/20/2027	11/20/2027	27.66	27.66	27.66	28.42	31.09	31.09	46	46.52	46	46	46	43.35	43.14	43.27	44	43.79	46	46.52	46	43.66	43.78	46	31.09	31.37
SPP South - Energy Price - 1H2023	1786	11/21/2027	11/21/2027	31.09	31.09	31.09	31.09	28.42	28.42	42.04	42.05	42.05	44.76	42.05	42.05	36.86	36.86	36.86	36.86	40.93	42.4	42.05	40.93	40.93	40.93	27.66	27.66
SPP South - Energy Price - 1H2023	1787	11/22/2027	11/22/2027	28.41	28.41	28.41	31.09	31.63	32.25	40.89	41.41	41.41	41.41	41.41	41.41	41.41	43.23	43.41	41.41	51.48	53.87	53.93	53.15	52.92	51.49	38.7	35.79
SPP South - Energy Price - 1H2023	1788	11/23/2027	11/23/2027	32.25	31.87	31.87	31.87	31.87	32.25	42.61	43.24	41.87	43.24	43.62	41.51	43.24	41.13	40.7	40.92	40.7	44.32	43.69	42.73	41.55	41.3	31.87	31.39
SPP South - Energy Price - 1H2023	1789	11/24/2027	11/24/2027	31.39	31.39	31.39	31.39	31.39	31.39	40.16	41.53	45.56	42.55	43.2	40.94	40.16	40.16	40.16	40.16	42.01	42.55	45.56	40.16	40.16	40.52	32.25	31.39
SPP South - Energy Price - 1H2023	1790	11/25/2027	11/25/2027	31.39	31.09	31.09	31.09	31.09	31.09	39.68	39.68	34.96	34.96	34.96	34.96	34.96	34.96	34.64	34.96	34.96	34.96	34.96	34.96	34.96	34.96	30.53	30.54
SPP South - Energy Price - 1H2023	1791	11/26/2027	11/26/2027	27.75	25.4	24.99	24.99	24.99	14.75	17.15	21.4	18	18.95	12.59	8.54	13.69	2.11	8.25	7.91	7.3	12.98	16.4	16.19	29.23	14.9	11.93	12.01
SPP South - Energy Price - 1H2023	1792	11/27/2027	11/27/2027	11.49	15.41	24.05	24.6	24.99	24.99	36.97	36.98	36.45	28.68	32.02	36.97	25.32	36.98	36.98	34.02	36.98	36.97	41.28	36.98	36.97	36.97	22.99	24.99
SPP South - Energy Price - 1H2023	1793	11/28/2027	11/28/2027	24.99	24.99	27.75	24.99	24.99	22.95	36.98	36.98	36.97	36.97	12.82	36.98	34.02	36.79	31.95	10.9	39.35	41.05	41.05	41.05	37.77	37.77	28.5	27.21
SPP South - Energy Price - 1H2023	1794	11/29/2027	11/29/2027	27.67	27.67	26.91	27.67	27.67	28.06	36.52	36.91	36.52	36.91	36.52	36.52	36.91	36.77	36.91	36.84	36.52	36.91	36.51	34.64	36.52	33.39	27.67	28.42
SPP South - Energy Price - 1H2023	1795	11/30/2027	11/30/2027	28.24	26.66	26.08	26.01	26.1	28.24	37.16	37.16	34.64	33.39	33.39	32.12	32.12	33.39	33.39	32.12	33.39	37.16	37.06	37.16	37.16	37.16	28.24	29.02
SPP South - Energy Price - 1H2023	1796	12/1/2027	12/1/2027	26.66	26.66	26.66	27.37	26.7	26.66	34.95	35.26	34.95	34.68	34.68	34.68	34.68	34.95	34.95	34.95	34.95	35.99	35.87	35.26	35.26	35.97	29.85	32.31
SPP South - Energy Price - 1H2023	1797	12/2/2027	12/2/2027	33.06	33.06	30.93	29.51	29.51	29.51	37.55	38.38	37.55	37.55	37.55	38.98	41.61	38.96	37.18	37.55	38	39.74	39.11	40.67	38.85	40.37	34.61	33.06
SPP South - Energy Price - 1H2023	1798	12/3/2027	12/3/2027	33.06	33.06	33.06	33.06	31.38	31.38	37.66	40.5	40.5	37.82	40.03	40.5	40.5	40.5	40.03	40.5	40.95	48.61	52.53	52.53	52.44	48.61	39.48	38.3
SPP South - Energy Price - 1H2023	1799	12/4/2027	12/4/2027	34.3	34.68	34.73	34.54	37.75	35.72	37.59	47.06	37.35	36.14	32.17	32.17	32.71	32.17	32.71	32.54	32.71	40.45	40.42	33.94	32.71	32.71	33.06	32.25
SPP South - Energy Price - 1H2023	1800	12/5/2027	12/5/2027	32.25	32.25	31.38	31.38	31.38	31.38	31.05	31.91	31.05	27.93	27.93	27.93	28.5	31.05	31.05	31.05	31.91	35.79	34.56	33.77	33.25	32.71	31.38	30.44
SPP South - Energy Price - 1H2023	1801	12/6/2027	12/6/2027	30.79	30.79	30.79	30.79	30.79	30.79	37.37	37.37	36.07	34.68	37.37	35.97	37.37	37.37	37.37	41.82	43.73	49.77	50.01	49.73	48.53	48.17	39.13	35.27
SPP South - Energy Price - 1H2023	1802	12/7/2027	12/7/2027	35.76	35.76	35.76	35.76	35.76	40.14	47.94	54.28	57.76	49.35	47.65	44.27	44.27	42.12	43.69	43.69	44.27	46.47	47.22	46.29	48.23	44.27	35.76	35.76
SPP South - Energy Price - 1H2023	1803	12/8/2027	12/8/2027	36.74	36.74	36.74	36.74	36.74	36.74	50.35	51.04	51.04	50.1	50.63	48.4	46.32	45.31	45.31	45.31	45.31	51.04	51.83	59.22	51.04	55.11	40.77	36.74
SPP South - Energy Price - 1H2023	1804	12/9/2027	12/9/2027	38.36	38.37	38.37	41.7	38.37	38.36	50.14	51.84	51.9	47.06	48.38	46.13	40.24	46.37	46.39	46.39	47.06	50.21	51.9	48.69	47.06	50.89	37.65	37.3
SPP South - Energy Price - 1H2023	1805	12/10/2027	12/10/2027	33.96	33.96	33.96	33.96	33.96	33.96	43.35	42.8	42.8	37.43	36.57	36.57	35.97	34.68	36.57	36.57	36.65	37.81	36.58	36.65	36.58	36.58	33.06	33.06
SPP South - Energy Price - 1H2023	1806	12/11/2027	12/11/2027	30.49	30.49	30.49	30.49	30.49	30.49	31.36	33.6	32.71	31.61	30.17	30.17	30.17	16.47	30.17	33.6	33.6	34.54	33.94	34.54	34.54	32.71	33.06	33.06
SPP South - Energy Price - 1H2023	1807	12/12/2027	12/12/2027	33.06	33.06	33.06	33.06	33.06	33.06	32.71	33.6	32.71	30.17	33.6	33.6	33.6	33.6	33.6	33.6	33.6	34.54	34.54	33.94	34.54	33.6	33.96	33.96
SPP South - Energy Price - 1H2023	1808	12/13/2027	12/13/2027	32.12	33.7	33.06	33.7	33.7	33.7	42.53	42.53	42.53	36.65	36.54	37	36.54	36.8	35.57	36.54	36.91	37.7	37.66	36.54	36.54	36.54	30.27	30.26
SPP South - Energy Price - 1H2023	1809	12/14/2027	12/14/2027	15.27	29.21	29.16	26.96	23.76	32.97	35.97	41.74	35.85	35.85	35.85	35.97	35.85	35.85	35.85	35.85	35.85	41.74	42.26	42.97	42.1	41.74	34.22	33.27
SPP South - Energy Price - 1H2023	1810	12/15/2027	12/15/2027	32.22	32.84	32.22	33.06	33.06	33.06	40.93	39.6	39.1	35.97	35.97	35.97	35.15	35.78	36.55	36.8	40.93	41.42	42.32	42.23	43.23	41.43	34.22	33.06
SPP South - Energy Price - 1H2023	1811	12/16/2027	12/16/2027	31.17	30.65	30.04	27.58	27.58	27.58	33.67	34.64	33.67	33.67	33.67	31.87	33.67	33.67	33.67	33.67	34.11	34.36	34.68	34.68	33.67	38.03	31.31	31.49
SPP South - Energy Price - 1H2023	1812	12/17/2027	12/17/2027	28.76	28.76	28.76	28.76	28.76	28.76	36.4	36.76	36.76	36.76	36.76	36.76	36.76	36.4	36.4	36.76	38.17	39.93	39.92	39.61	38.71	38.32	34.69	33.28
SPP South - Energy Price - 1H2023	1813	12/18/2027	12/18/2027	33.18	33.35	33.06	33.06	33.06	33.06	32.71	33.03	33.46	33.94	33.28	32.61	32.71	31.46	32.71	33.66	34.13	35.71	35.68	35.36	34.54	33.66	33.06	33.06
SPP South - Energy Price - 1H2023	1814	12/19/2027	12/19/2027	33.06	33.06	33.06	33.06	33.06	30.01	32.71	33.03	33.56	34.05	33.66	33.66	33.66	32.71	32.71	32.71	32.71	34.95	35.68	35.36	34.54	34.16	34.02	34.04
SPP South - Energy Price - 1H2023	1815	12/20/2027	12/20/2027	33.85	34.3	33.44	33.85	33.85	33.06	38.19	41.71	39.32	39.71	37.85	37.85	37.46	35.97	37.46	36.17	37.46	39.55	38.93	39.32	40.18	40.62	35.27	33.28
SPP South - Energy Price - 1H2023	1816	12/21/2027	12/21/2027	30.05	29.25	30.05	29.25	29.25	29.25	34.68	34.68	32.36	32.36	32.36	25.47	8.46	8.15	8.57	32.36	32.36	32.91	35.5	37.74	35.97	37.74	30.05	30.05
SPP South - Energy Price - 1H2023	1817	12/22/2027	12/22/2027	28.42	30.96	28.57	30.78	28.42	28.42	36.05	36.39	36.39	36.39	36.39	36.05	36.05	35.97	34.68	34.68	35.97	36.05	36.05	36.05	36.05	36.05	33.06	31.5
SPP South - Energy Price - 1H2023	1818	12/23/2027	12/23/2027	33.06	30.93	33.06	31.55	31.5	30.85	37.5	38.5	37.88	35.9	34.68	34.68	34.68	32.14	33.68	32.14	34.68	37.5	34.68	34.68	34.68	34.68	29.02	26.15
SPP South - Energy Price - 1H2023	1819	12/24/2027	12/24/2027	28.88	28.88	28.88	26.02	28.88	29.66	35.22	37.34	37.42	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	37.34	29.66	29.66
SPP South - Energy Price - 1H2023	1820	12/25/2027	12/25/2027	29.66	29.66	30.98	31.59	33.06	33.06	33.94	32.71	32.71	32.71	29.35	29.35	29.35	28.58	27.34	28.58	28.58	31.77	29.35	28.58	29.73	29.61	28.88	29.66
SPP South - Energy Price - 1H2023	1821	12/26/2027	12/26/2027	28.96	28.88	28.88	28.88	29.66	28.88	29.35	31.06	28.58	29.35	28.58	28.58	28.58	28.58	28.58	28.58	29.14	33.99	35.85	36.59	35.77	35.39	34.86	34.67
SPP South - Energy Price - 1H2023	1822	12/27/2027	12/27/2027	28.09	31.23	28.09	28.09	28.09	28.09	39.63	39.87	39.87	38.13	37.85	36.15	38.21	35.98	37.69	37.5	39.87	39.87	40.33	40.07	40.33	39.87	32.09	32.09
SPP South - Energy Price - 1H2023	1823	12/28/2027	12/28/2027	31.21	31.16	31.21	32.26	32.66	33.06	39.38	43.57	43.57	43.57	43.57	43.57	39.38	39.38	39.38	39.38	38.95	38.95	38.95	38.95	37.65	35.97	30.38	31.21
SPP South - Energy Price - 1H2023	1824	12/29/2027	12/29/2027	25.36	23.55	23.55	23.55	24.46	26.06	34.6	34.32	34.32	34.32	30.22	34.32	31.57	34.32	34.32	34.32	34.6	34.61	34.6	34.6	34.6	34.32	30.44	26.76
SPP South - Energy Price - 1H2023	1825	12/30/2027	12/30/2027	30.56	33.06	33.06	33.06	34.4	34.3	42.27	42.27	42.27	37.35	36.66	37.95	36.11	42.27	42.27	42.27	42.27	42.27	44.86	42.81	42.81	42.81	34.4	34.4

SPP South - Energy Price - 1H2023	1826	12/31/2027	12/31/2027	33.25	33.25	33.25	33.25	33.25	33.25	41.57	43.48	41.57	41.07	41.07	37.65	35.07	35.97	41.08	41.08	41.08	41.08	41.57	41.08	35.07	35.07	32.35	31.15
SPP South - Energy Price - 1H2023	1827	1/1/2028	1/1/2028	28.77	28.77	28.77	28.77	28.77	28.77	36.95	36.95	41.1	41.1	39.07	38.69	38.11	38.09	41.1	41.1	41.1	41.1	41.1	41.1	40.42	36.95	28.77	28.77
SPP South - Energy Price - 1H2023	1828	1/2/2028	1/2/2028	28.77	28.77	28.77	28.77	28.77	28.77	36.95	36.95	36.95	36.95	12.53	11.22	10.26	9.58	9.05	11.5	36.95	36.95	36.95	36.95	36.95	36.95	28.77	28.77
SPP South - Energy Price - 1H2023	1829	1/3/2028	1/3/2028	27.63	27.63	27.63	27.63	27.63	27.63	40.3	40.3	40.3	40.3	40.3	40.3	35.58	9.42	8.89	9.04	8.69	40.3	40.3	40.3	40.3	40.3	27.63	27.63
SPP South - Energy Price - 1H2023	1830	1/4/2028	1/4/2028	27.11	27.11	27.11	27.11	27.11	27.11	45.71	46.47	41.79	39.62	39.62	39.62	39.62	39.62	39.62	39.62	42.47	45.88	46.47	46.47	46.47	46.47	30.12	30.12
SPP South - Energy Price - 1H2023	1831	1/5/2028	1/5/2028	29.33	29.34	29.34	29.34	29.34	29.33	41.79	44.25	38.74	38.74	41.79	38.74	38.74	39.77	38.74	42.38	42.97	44.28	45.46	44.2	44.25	41.79	29.33	26.42
SPP South - Energy Price - 1H2023	1832	1/6/2028	1/6/2028	26.21	26.21	26.21	26.21	26.21	26.21	41.79	44.26	38.46	38.46	38.46	38.46	38.65	39.3	38.46	38.46	38.59	45.15	45.15	45.15	45.15	43.93	29.09	29.09
SPP South - Energy Price - 1H2023	1833	1/7/2028	1/7/2028	26.68	27.21	27.4	27.4	27.4	27.4	42.03	42.41	43.56	42.41	42.34	42.03	42.03	42.03	41.79	41.79	41.79	42.03	42.03	42.03	41.79	41.79	27.4	24.09
SPP South - Energy Price - 1H2023	1834	1/8/2028	1/8/2028	24.09	26.68	26.68	26.68	26.68	26.68	34.27	35.19	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	38.4	41.07	40.69	37.15	35.68	27.4	27.4
SPP South - Energy Price - 1H2023	1835	1/9/2028	1/9/2028	27.4	27.4	26.68	26.68	25.2	26.68	34.27	35.19	35.19	30.94	30.94	30.94	30.94	9.58	14.16	30.94	30.94	34.27	34.27	34.27	30.94	30.94	24.09	24.09
SPP South - Energy Price - 1H2023	1836	1/10/2028	1/10/2028	27.18	27.18	27.18	30.05	27.65	30.2	44.33	46.57	46.57	45.94	46.41	46.57	46.57	45.53	44.23	41.79	44.47	47.09	50.06	50.17	46.57	46.57	33.12	33.12
SPP South - Energy Price - 1H2023	1837	1/11/2028	1/11/2028	33.15	33.15	33.15	33.14	33.12	34.08	51.03	51.03	51.97	52.82	54.72	56.14	56.64	53.79	56.64	56.44	50.39	50.39	50.39	48.9	44.07	43.05	29.78	29.78
SPP South - Energy Price - 1H2023	1838	1/12/2028	1/12/2028	28.99	29.78	28.99	28.99	32.25	32.25	46.01	47.66	49.24	44.71	49.23	44.35	44.44	44.44	44.44	44.44	45.99	49.24	49.24	49.24	49.24	47.71	32.25	28.99
SPP South - Energy Price - 1H2023	1839	1/13/2028	1/13/2028	31.34	28.65	31.34	31.34	31.34	30.15	46.69	48.06	48.06	46.02	42.37	41.01	42.95	44.38	44.38	43.83	45.67	48.58	48.62	48.62	47.17	44.47	30.46	30.46
SPP South - Energy Price - 1H2023	1840	1/14/2028	1/14/2028	28.78	30.4	28.89	31.08	30.46	30.46	48.93	48.49	49.52	48.93	49.53	49.2	48.93	43.89	42.9	42.26	41.87	44.48	46.03	44.36	41.78	41.78	28.78	28.78
SPP South - Energy Price - 1H2023	1841	1/15/2028	1/15/2028	28.78	28.78	28.78	28.78	28.78	28.78	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	41.13	41.12	36.97	38.33	32.02	32.02
SPP South - Energy Price - 1H2023	1842	1/16/2028	1/16/2028	32.02	32.02	29.46	32.02	32.02	29.46	41.12	41.12	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	41.12	41.13	42.27	42.27	42.27	41.13	30.28	28.78
SPP South - Energy Price - 1H2023	1843	1/17/2028	1/17/2028	32.75	33.12	32.75	33.12	33.12	34.35	49.32	64.25	55.73	49.32	44.41	44.11	44.11	44.11	38.3	41.79	43.17	44.11	44.11	44.11	44.11	44.11	28.65	28.65
SPP South - Energy Price - 1H2023	1844	1/18/2028	1/18/2028	33.03	33.03	33.03	33.03	33.03	33.12	49.79	49.79	49.79	49.79	49.79	45.81	43.34	45.81	46.21	42.5	49.79	49.79	49.79	49.79	55.96	55.96	35.22	37.9
SPP South - Energy Price - 1H2023	1845	1/19/2028	1/19/2028	35.22	35.22	35.22	35.22	34.7	34.7	51.95	51.95	51.95	51.95	44.44	41.79	41.79	38.92	37.64	39.37	41.79	51.95	51.95	51.95	51.95	51.95	34.7	34.7
SPP South - Energy Price - 1H2023	1846	1/20/2028	1/20/2028	31.11	31.11	19.34	31.11	31.11	31.11	44.5	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	41.96	47.31	47.31	47.47	47.31	47.31	47.31	31.11	31.11
SPP South - Energy Price - 1H2023	1847	1/21/2028	1/21/2028	29.88	19.48	13.73	13.44	13.53	30.89	43.34	43.34	40.08	13.29	11.12	11.02	10.08	8.35	9.76	10.23	8.69	47.48	60.32	55.37	60.15	52.72	35.39	34.35
SPP South - Energy Price - 1H2023	1848	1/22/2028	1/22/2028	33.12	32.74	33.12	34.35	33.12	34.35	45.45	45.45	42.54	39.68	39.68	39.68	39.68	11.85	11.23	9.21	39.68	39.68	45.45	45.45	45.45	44.12	34.35	33.12
SPP South - Energy Price - 1H2023	1849	1/23/2028	1/23/2028	33.12	33.12	33.12	33.12	34.35	34.35	44.12	45.45	42.54	42.54	39.68	39.68	42.54	42.54	39.68	39.68	39.68	44.12	45.45	45.45	42.54	42.54	30.89	30.89
SPP South - Energy Price - 1H2023	1850	1/24/2028	1/24/2028	26.68	26.68	30.44	30.44	26.68	26.68	43.8	43.8	41.79	41.79	41.79	41.56	41.56	41.56	41.79	41.79	42.67	44.2	45.85	45.77	42.72	41.79	26.68	26.68
SPP South - Energy Price - 1H2023	1851	1/25/2028	1/25/2028	25.95	25.95	25.95	25.95	27.2	25.95	41.79	45.24	45.32	45.24	43.95	43.02	41.55	40.89	40.62	40.62	41.45	43.27	43.27	40.73	40.62	40.62	28.1	28.89
SPP South - Energy Price - 1H2023	1852	1/26/2028	1/26/2028	25.85	29.46	29.46	29.46	31.59	33.12	45.08	44.56	45.57	43.9	43.32	45.79	43.84	43.78	40.63	43.82	43.73	46.4	49.23	49.1	49.51	51.59	34.89	34.89
SPP South - Energy Price - 1H2023	1853	1/27/2028	1/27/2028	35.7	35.66	36.53	36.53	35.21	36.53	59.37	60.12	53.23	47.84	46.8	46.8	46.8	46.8	46.8	46.8	46.8	49.16	59.02	59.71	54.4	54.01	36.76	36.2
SPP South - Energy Price - 1H2023	1854	1/28/2028	1/28/2028	38.51	36.76	35.16	35.98	36.85	38.61	59.39	60.87	54.33	50.57	48.45	47.32	46.77	46.72	46.77	44.21	40.84	46.77	51.65	46.77	46.77	46.77	33.12	30.69
SPP South - Energy Price - 1H2023	1855	1/29/2028	1/29/2028	30.69	30.69	30.69	33.37	33.37	33.12	39.42	39.63	42.54	39.42	39.42	39.42	8.6	8.51	8.43	8.43	8.11	39.42	42.54	42.54	39.55	39.42	35.16	33.61
SPP South - Energy Price - 1H2023	1856	1/30/2028	1/30/2028	35.16	35.16	35.16	35.16	35.16	34.35	45.15	48.67	50.5	49.95	45.15	45.15	44.12	42.54	42.54	39.7	42.54	42.54	43.15	42.54	41.92	42.41	30.97	30.69
SPP South - Energy Price - 1H2023	1857	1/31/2028	1/31/2028	27.83	27.43	28.23	30.69	28.23	27.43	42.53	42.53	42.53	41.79	34.14	8.67	8.45	35	8.28	5.66	5.13	7.36	34.15	34.6	38.66	41.79	27.42	11.43
SPP South - Energy Price - 1H2023	1858	2/1/2028	2/1/2028	6.29	20.58	8.29	23.67	23.67	23.67	36.73	36.73	36.73	34.41	34.41	34.41	34.41	31.46	6.82	6.92	9.88	36.4	35.69	37.09	36.73	35.69	23.67	23.67
SPP South - Energy Price - 1H2023	1859	2/2/2028	2/2/2028	23.67	23.67	23.67	23.67	22.68	23.67	36.73	41.08	40.36	40.32	37.84	38.29	38.24	38.11	37.58	36.73	36.73	37.89	40.22	41.08	41.08	41.08	27.07	27.07
SPP South - Energy Price - 1H2023	1860	2/3/2028	2/3/2028	25.69	25.69	25.69	24.22	23.1	23.1	34.51	35.66	36.12	36.25	37	36.5	34.37	34.37	34.37	34.37	34.37	36.55	36.5	36.4	36.12	39.74	25.94	25.94
SPP South - Energy Price - 1H2023	1861	2/4/2028	2/4/2028	25.53	25.53	25.53	25.53	25.94	26.23	41.51	44.63	39.99	39.53	39.53	39.03	38.05	34.18	34.18	34.18	34.18	37.79	38.09	38.66	38.6	39.53	26.78	25.53
SPP South - Energy Price - 1H2023	1862	2/5/2028	2/5/2028	25.53	25.53	25.53	24.11	22.96	23.59	39.39	39.75	39.39	34.78	34.78	34.78	34.78	34.78	34.78	34.78	33.94	34.78	38.67	38.68	34.78	21.54	9.32	9.32
SPP South - Energy Price - 1H2023	1863	2/6/2028	2/6/2028	8.59	8.56	8.29	12.5	22.96	22.96	34.78	38.67	38.67	38.67	38.67	38.68	38.67	34.78	34.78	34.78	34.91	38.67	39.75	40.26	38.68	36.52	22.96	22.96
SPP South - Energy Price - 1H2023	1864	2/7/2028	2/7/2028	23.09	21.41	22.96	21.41	22.96	24.09	37.23	39.1	37.62	36.24	34.47	32.17	32.17	32.17	31.4	32.17	32.17	35.77	36.42	36.99	36.56	35.76	23.77	23.05
SPP South - Energy Price - 1H2023	1865	2/8/2028	2/8/2028	21.33	21.33	21.33	21.33	22.16	23.58	36.21	37.12	35.63	32.07	32.85	33.01	32.07	6.89	6.82	6.82	6.56	32.07	34.52	32.53	32.48	32.07	21.33	21.33
SPP South - Energy Price - 1H2023	1866	2/9/2028	2/9/2028	20.75	8.56	8.29	8.28	8.19	8.85	32.84	33.56	32.84	8.61	1.25	1.34	1.32	1.3	1.25	0	1.31	3.74	32.84	35.13	35.61	36.66	25.02	24.79
SPP South - Energy Price - 1H2023	1867	2/10/2028	2/10/2028	23.3	22.67	21.61	24	24	24.65	37.13	37.53	32.43	32.43	32.43	32.43	32.43	32.43	31.75	32.43	32.43	32.43	32.43	34.46	34.1	33.29	21.61	21.61
SPP South - Energy Price - 1H2023	1868	2/11/2028	2/11/2028	20.91	20.91	20.91	20.91	20.91	23.2	33.26	35.65	32.9	31.52	31.52	31.5	31.52	27.78	31.52	22.58	26.29	31.52	32.71	31.52	31.52	31.52	20.91	20.91
SPP South - Energy Price - 1H2023	1869	2/12/2028	2/12/2028	20.91	20.91	20.91	20.91	20.91	20.91	34.44	38.12	35.15	33.37	32.57	31.68	31.68	31.68	31.68	31.68	30.89	31.41	31.03	31.68	31.68	31.68	20.91	20.91
SPP South - Energy Price - 1H2023	1870	2/13/2028	2/13/2028	20.91	20.91	20.91	20.91	20.91	20.91	31.68	35.08	31.97	33.37	31.68	31.68	31.68	31.68	31.68	31.68	31.68	31.68	33.88	35.15	36.11	36.11	23.83	23.2
SPP South - Energy Price - 1H2023	1871	2/14/2028	2/14/2028	25.05	27.01	27.01	27.01	27.01	27.01	37.67	42.42	42.57	42.42	42.42	42.42	40.08	39.91	39.92	39.94	39.47	40.31	40.61	42.42	40.38	40.19	24.91	24.9
SPP South - Energy Price - 1H2023	1872	2/15/2028	2/15/2028	24.86	24.86	24.86	24.86	24.86	25.48	37.52	40.25	37.97	36.65	36.65	29.31	23.36	32.13	1.25	21.93	31.46	32.81	36.67	36.68	36.65	36.56	24.86	24.86
SPP South - Energy Price - 1H2023	1873	2/16/2028	2/16/2028	32.51	27.01	27.83	27.01	27.01	28.63	44.81	46.6	37.92	34.89	46.6	38.21	36.55	30.04	32.76	32.89	34.41	38.21	46.6	46.6	46.6	41.73	30.11	29.04
SPP South - Energy Price - 1H2023	1874	2/17/2028	2/17/2028	24.39	12.58	15.32	26.16	26.16	26.16	38.35	38.35	34.95	37.99	37.37	29.11	33.72	28.78	37.57	37.76	36.29	38.35	38.35	39.77	40.12	39.94	27.01	26.62
SPP South - Energy Price - 1H2023	1875	2/18/2028	2/18/2028	24.91	26.98	24.23	26.98	26.98	26.98	41.42	39.19	38.18	37.63	35.84	24.53	6.96	4.42	6.82	6.82	6.56	27.62	35.84	35.84	35.84	36.31	24.23	24.23
SPP South - Energy Price - 1H2023	1876	2/19/2028	2/19/2028	24.23	24.23	24.23	24.23	24.23	24.23	36.72	40.87	37.58	36.72	36.71	36.72	36.71	8.19	34.66	36.72	36.72	36.72	36.72	37.37	39	38.05	25.11	24.23
SPP South - Energy Price - 1H2023	1877	2/20/2028	2/20/2028	24.23	24.23	24.23	24.23	24.23	24.23	37.32	39	39.11	36.72	36.71	36.91	36.71	5.26	5.41	7.66	1.55	32.81	36.71	36.72	36.72	36.72	24.23	24.23
SPP South - Energy Price - 1H2023	1878	2/21/2028	2/21/2028	22.13	24.59	24.59	23.97	24.59	24.59	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	37.47	37.47	37.71	38.3	39.5	38.73	38.3	38.3	24.7	24.59
SPP South - Energy Price - 1H2023	1879	2/22/2028	2/22/2028	26.06	26.06	26.06	26.06	26.06	26.78	40.22	40.22	37.54	35.43	35.43	35.42	34.41	35.17	28.22	1.42	34.41	32.15	35.42	35.42	34.41	35.42	23.43	23.43
SPP South - Energy Price - 1H2023	1880	2/23/2028	2/23/2028	21.82	21.82	21.82	21.82	21.82	21.82	36.17	37.45	34.62	33.34	32.86	33.3	29.41	29.17	26.82	24.14	25.81	33.34	33.34	33.34	33.34	33.34	21.82	12.88
SPP South - Energy Price - 1H2023	1881	2/24/2028	2/24/2028	8.98	7.88	12.12	8.71	13.08	22.86	34.12	34.12	34.12	34.12	34.12	34.12	31.39	34.12	34.12	34.12	34.12	34.12	35.86	36.5	39.39	37.6	26.02	25.42
SPP South - Energy Price - 1H2023	1882	2/25/2028	2/25/2028	24.87	24.78	24.78	24.78	24.78	25.46	38.99	39.59	38.55	38.55	38.55	38.06	37.48	37.09	36.23	35	34.56	34.88	37.41	37.69	34.91	33.39	22.64	24.16
SPP South - Energy Price - 1H2023	1883	2/26/2028	2/26/2028	22.3	22.3	22.3	22.3	22.3	22.3	33.79	33.79	33.78	7.05	6.81	1.29	1.47	1.34	1.53	1.49	1.44	8.27	33.78	33.78	32.65	27.29	22.3	22.3
SPP South - Energy Price - 1H2023	1884	2/27/2028	2/27/2028	22.3	22.3	22.3	22.3	22.3	22.3	34.3	33.79	33.78	9.4	8.47	1.29	1.47	1.34	1.62	1.49	1.44	1.49	8.81	9.47	8.71	9.8	7.41	6.98
SPP South - Energy Price - 1H2023	1885	2/28/2028	2/28/2028	7.75	7.79	7.57	7.34	7.18	7.55	9.11	9.68	1.19	7.9	1.17	19.91	23.56	34.61	34.61	30.63	30.48	31.78	34.61	34.61	34.41	34.41	21.54	7.63
SPP South - Energy Price - 1H2023	1886	2/29/2028	2/29/2028	7.82	7.79	7.58	7.63	8.29	7.05	10.12	34.41	28.62	7.9	5.73	1.08	1.24	5.73	6.23	1.25	1.21	5.73	34.11	34.67	34.67	34.67	23.98	23.98
SPP South - Energy Price - 1H2023	1887	3/1/2028	3/1/2028	26.86	26.86	26.86	26.86	26.86	26.86	39.3	39.3	39.3	36.15	39.3	39.3	39.3	39.3	38.51	39.3	39.3	39.3	42.86	42.86	39.3	39.3	27.66	26.86
SPP South - Energy Price - 1H2023	1888	3/2/2028	3/2/2028	27.66	27.66	25.35	27.47	27.47	27.66	39.99	39.99	39.35	39.13	38.41	36.76	36.76	35.41	35.32	7.6	7.8	31.99	36.76	39.99	39.99	39.99	27.66	27.66
SPP South - Energy Price - 1H2023	1889	3/3/2028	3/3/2028	26.49	26.49	26.49	26.49	26.49	26.49	35.88	36.44	34.83	33.32	33.4	33.13	33.13	31.3	28.64	28.34	31.99	33.13	33.65	33.19	33.13	33.13	21.9	21.9
SPP South - Energy Price - 1H2023	1890	3/4/2028	3/4/2028	21.9	21.9	21.9	21.9	21.9	21.9	32.65	30.6	30.6	30.6	30.6	5.7	30.6	30.6	30.6	34.01	34.01	34.01	37.01	37.01	37.01	37.01	24.34	24.34
SPP South - Energy Price - 1H2023	1891	3/5/2028	3/5/2028	24.34	24.34	24.34	21.9	24.34	26.45	37.01	34.5	34.01	30.6	30.6	31.29	34.01	30.6	8.46	30.6	32.22	34.01	35.84	34.01	33.91	34.01	24.34	24.34
SPP South - Energy Price - 1H2023	1892	3/6/2028	3/6/2028	22.53	22.53	8.61	11.9	20.31	20.31	31.99	31.15	31.15	31.15	31.15	31.15	29.82	31.15	31.15	31.15	29.24	28.66	28.71	29.49	31.13	31.15	20.31	20.31
SPP South - Energy Price - 1H2023	1893	3/7/2028	3/7/2028	21.12	21.12	21.12	21.12	21.12	23.45	34.79	32.16	32.16	32.16	32.16	32.16	33.17	32.16	32.16	32.16	32.16	33.17	33.17	34.79	33.17	32.2	23.56	23.72
SPP South - Energy Price - 1H2023	1894	3/8/2028	3/8/2028	24.1	24.1	21.69	24.1	21.69	22.78	32.87	32.87	32.87	31.99	32.87	33.7	32.87	32.87	32.87	35.54	33.17	35.11	36.65	37.48	35.59	35.59	26.49	24.32
SPP South - Energy Price - 1H2023	1895	3/9/2028	3/9/2028	24.79	24.68	24.79	26.49	26.49	26.53	37.15	36.66	36.25	36.03	33.62	33.62	35.49	34.53	33.62	33.62	33.62	33.62	33.62	33.62	33.62	33.62	24.79	22.3
SPP South - Energy Price - 1H2023	1896	3/10/2028	3/10/2028	23.88	23.88	23.88	23.88	21.5	21.5	32.63	32.63	32.85	32.63	32.63	35.31	35.31	35.31	35.31	35.31	35.31	35.31	34.81	35.31	33.17	32.63	21.5	7.26
SPP South - Energy Price - 1H2023	1897	3/11/2028	3/11/2028	7.67	7.73	7.54	8.05	7.04	6.91	9.8	9.23	8.76	8.5	1.26	1.16	1.33	1.21	1.39	1.35	8.62	8.31	30.04	30.04	30.04	30.04	21.5	21.49
SPP South - Energy Price - 1H2023	1898	3/12/2028	3/12/2028	21.49	13.46	9.03	9.03	23.36	21.49	33.94	34.8	36.88	36.41	34.58	34.49	33.37	31.19	33.37	30.7	33.37	33.37	31.65	33.37	30.7	30.04	21.5	21.5
SPP South - Energy Price - 1H2023	1899	3/13/2028	3/13/2028	22.61	22.61	22.61	22.61	22.67	23.04	33.3	33.14	33.97	33.97	33.67	33.74	32.65	33.67	33.75	33.35	33.14	32.45	32.64	33.14	13.6	9.78	8.13	7.26
SPP South - Energy Price - 1H2023	1900	3/14/2028	3/14/2028	7.67	7.64	7.42	7.2	7.32	9.62	31.99	11.85	7.57	7.35	6.62	6.65	6.8	7.13	7.32	7.18	7.45	7.18	8.38	31.99	32.63	31.99	22.2	22.2
SPP South - Energy Price - 1H2023	1901	3/15/2028	3/15/2028	22.05	22.05	8.47	22.05	8.73	22.05	32.45	32.45	26.81	7.35	6.62	1.01	1.15	7.13	1.2	6.15	7.8	7.18	32.3	33.36	34.17	32.98	24.51	23.95
SPP South - Energy Price - 1H2023	1902	3/16/2028	3/16/2028	24.78	26.49	25.75	26.49	26.49	26.95	39.62	40.92	39.62	41.87	39.62	39.62	38.51	37.98	36.22	35.65	35.8	35.23	35.85	35.29	34.83	33.9	24.2	24.2
SPP South - Energy Price - 1H2023	1903	3/17/2028	3/17/2028	23.1	23.1	21.71	23.1	23.1	23.1	31.99	31.99	1.1	1.04	1.09	1.01	0	1.05	19.72	26.28	32.55	32.55	32.85	33.02	32.93	32.55	23.1	23.1
SPP South - Energy Price - 1H2023	1904	3/18/2028	3/18/2028	23.1	25.7	25.7	25.7	25.7	25.7	35.91	35.91	34.12	35.91	32.28	32.28	32.28	32.28	32.28	29.21	32.28	32.28	32.28	32.28	32.28	32.28	23.1	23.1
SPP South - Energy Price - 1H2023	1905	3/19/2028	3/19/2028	23.1	25.7	25.7	25.7	25.7	25.7	35.91	35.91	34.27	33.6	33.51	32.92	33.46	32.28	32.28	32.28	32.28	32.92	32.28	32.28	33.27	32.28	24.81	23.1
SPP South - Energy Price - 1H2023	1906	3/20/2028	3/20/2028	23.27	25.3	23.27	23.27	23.27	26.49	40.79	36.68	34.66	34.5	33.48	35.08	35.2	34.71	33.97	34.19	34.62	36.48	36.66	36.69	36.78	35.07	25.93	25.3
SPP South - Energy Price - 1H2023	1907	3/21/2028	3/21/2028	22.75	24.64	24.64	22.75	22.75	25.3	33.72	32.83	32.12	32.12	32.12	32.12	34.14	34.04	33.45	34.04	33.21	32.67	33.81	34.79	34.5	33.92	25.3	25.3
SPP South - Energy Price - 1H2023	1908	3/22/2028	3/22/2028	24.35	24.16	24.16	23.15	23.45	24.16	35.51	31.42	33.57	32.59	32.63	32.6	30.88	30.88	30.88	30.88	30.88	30.88	31.99	31.99	30.88	30.88	21.75	23.83

SPP South - Energy Price - 1H2023	1909	3/23/2028	3/23/2028	20.56	22.82	22.82	22.82	22.82	22.82	29.43	31.06	29.43	29.43	29.43	29.81	29.43	29.43	29.43	29.43	29.43	29.43	30.26	33.17	31.99	31.99	20.56	20.56
SPP South - Energy Price - 1H2023	1910	3/24/2028	3/24/2028	19.01	19.01	19.01	19.01	19.01	19.01	27.51	27.51	27.51	27.51	27.51	27.51	27.51	27.51	27.51	30.63	31.64	31.71	31.71	31.99	31.99	31.99	21.05	19.93
SPP South - Energy Price - 1H2023	1911	3/25/2028	3/25/2028	19.01	19.01	21.05	21.05	21.05	21.05	29.42	29.42	27.78	27.78	28.03	28.03	27.78	29.42	29.42	29.42	30.2	30.2	30.2	30.2	29.42	29.42	21.05	21.05
SPP South - Energy Price - 1H2023	1912	3/26/2028	3/26/2028	21.05	19.01	19.01	19.01	19.01	19.01	28.87	28.87	26.56	10.98	6.84	1.75	1.42	1.36	1.48	1.36	1.39	7.46	11.93	12.12	14.17	14.04	9.78	8.72
SPP South - Energy Price - 1H2023	1913	3/27/2028	3/27/2028	9.96	1.48	1.27	8.21	8.92	8.79	10.77	9.91	1.51	1.37	1.55	28.21	28.21	28.21	28.21	28.21	28.31	28.64	31.99	32.61	31.99	31.99	19.59	19.58
SPP South - Energy Price - 1H2023	1914	3/28/2028	3/28/2028	20.62	20.62	20.62	20.62	22.89	22.89	31.99	29.5	29.5	29.5	29.5	9.51	1.23	25.7	11.26	10.72	29.5	29.5	29.5	29.5	29.5	29.5	20.62	20.62
SPP South - Energy Price - 1H2023	1915	3/29/2028	3/29/2028	21.26	21.26	21.26	10.32	21.26	21.26	31.09	30.29	30.29	29.99	30.17	9.51	9.88	10.04	15.36	15.36	15.89	16.9	30.29	30.29	26.9	12.14	9.78	8.72
SPP South - Energy Price - 1H2023	1916	3/30/2028	3/30/2028	9.78	9.58	8.73	8.78	20.35	21.35	30.4	30.4	30.4	30.4	30.4	29.54	30.4	30.4	30.13	10.72	30.4	30.4	30.4	30.4	12.25	12.14	9.78	8.72
SPP South - Energy Price - 1H2023	1917	3/31/2028	3/31/2028	9.96	9.58	8.73	9.58	9.07	20.07	28.82	28.82	28.82	28.82	28.82	28.82	13.5	10.04	15.86	21.38	11.09	16.9	28.82	28.82	29.22	29.15	20.07	20.07
SPP South - Energy Price - 1H2023	1918	4/1/2028	4/1/2028	10.86	10.86	11.32	10.86	11.47	10.86	21.49	23.36	21.49	21.49	23.41	21.49	21.49	21.49	10.6	10.09	21.49	21.49	21.49	21.49	21.49	21.49	10.86	10.86
SPP South - Energy Price - 1H2023	1919	4/2/2028	4/2/2028	10.86	10.86	10.86	10.86	10.86	10.86	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	23.41	23.41	23.41	24.03	23.41	23.41	11.84	11.32
SPP South - Energy Price - 1H2023	1920	4/3/2028	4/3/2028	11.69	11.69	11.69	11.69	11.69	12.76	27.52	25.39	27.51	25.39	25.39	8.19	25.39	11.93	8.63	9.23	9.54	9.17	25.39	25.39	25.39	12.05	5.62	5.01
SPP South - Energy Price - 1H2023	1921	4/4/2028	4/4/2028	5.72	5.51	5.01	5.21	5.21	5.67	24.35	8.81	8.48	8.16	8.1	8.19	8.5	14.24	25.86	25.86	25.86	25.86	27.52	27.52	28.54	25.86	11.95	11.95
SPP South - Energy Price - 1H2023	1922	4/5/2028	4/5/2028	5.72	5.51	5.01	5.56	12.56	12.56	27	27.52	27	27	27	26.7	27	25.6	26.53	27	26.03	25.85	27	27	27	27	12.56	5.01
SPP South - Energy Price - 1H2023	1923	4/6/2028	4/6/2028	7.69	12.19	12.19	12.19	12.19	12.19	26.08	26.08	26.08	26.08	26.08	26.08	26.11	26.08	26.08	26.08	26.08	26.08	26.08	26.99	26.08	26.08	12.19	12.19
SPP South - Energy Price - 1H2023	1924	4/7/2028	4/7/2028	11.98	11.98	11.98	13.08	13.08	13.08	27.52	25.7	8.48	1.33	1.33	1.3	1.06	1.01	1.33	1.33	2.23	9.17	8.69	25.7	21.66	25.7	11.98	11.98
SPP South - Energy Price - 1H2023	1925	4/8/2028	4/8/2028	5.72	5.51	5.01	5.05	5.21	5.05	10.14	9.63	1.43	0	0	1.42	0	1.11	1.11	1.11	1.13	10.03	9.5	23.7	23.7	23.7	11.98	11.98
SPP South - Energy Price - 1H2023	1926	4/9/2028	4/9/2028	11.98	11.98	11.98	11.98	11.98	11.98	23.7	23.7	21.47	8.93	23.7	23.7	12.02	12.89	18.18	21.8	23.7	25.87	29.49	26.57	25.87	25.87	12.31	11.98
SPP South - Energy Price - 1H2023	1927	4/10/2028	4/10/2028	11.9	11.9	11.9	11.9	11.9	11.9	25.55	25.55	25.55	25.55	19.21	25.55	8.5	8.64	8.63	9.85	9.54	13.24	25.55	25.55	25.55	25.55	11.9	11.9
SPP South - Energy Price - 1H2023	1928	4/11/2028	4/11/2028	6.64	5.51	5.01	5.05	5.21	13.21	28.54	25.92	25.92	18.74	17.21	12.34	8.5	8.64	13.42	9.76	9.54	25.92	27.52	27.52	27.08	25.92	12.1	12.1
SPP South - Energy Price - 1H2023	1929	4/12/2028	4/12/2028	12.28	12.28	12.28	12.28	12.28	12.58	26.25	10.17	8.48	8.16	1.33	12.36	1.06	8.64	10.17	26.24	26.24	26.25	26.25	26.24	26.24	26.24	11.79	11.79
SPP South - Energy Price - 1H2023	1930	4/13/2028	4/13/2028	12.03	12.03	12.03	12.03	12.03	12.03	25.79	22.35	8.48	8.16	8.1	8.19	8.5	8.64	8.63	9.23	9.54	9.17	8.69	25.79	25.69	25.79	12.03	12.03
SPP South - Energy Price - 1H2023	1931	4/14/2028	4/14/2028	11.79	11.79	12.87	12.87	13.22	13.88	29.09	28.81	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	27.52	12.87	12.87
SPP South - Energy Price - 1H2023	1932	4/15/2028	4/15/2028	12.87	12.87	12.43	12.43	12.87	12.87	26.7	25.46	25.46	25.46	25.46	23.33	23.33	9.45	10.6	14.53	23.33	23.33	11.52	10.8	11.52	11.42	5.62	11.79
SPP South - Energy Price - 1H2023	1933	4/16/2028	4/16/2028	11.79	11.79	11.79	11.79	11.79	11.79	21.46	23.33	21.46	19.39	8.86	23.33	23.52	23.33	25.46	25.71	25.46	25.66	25.87	24.12	25.46	23.33	11.79	11.79
SPP South - Energy Price - 1H2023	1934	4/17/2028	4/17/2028	11.62	11.62	11.62	11.62	12.68	12.68	27.52	28.46	28.46	28.35	27.61	27.52	28.3	28.45	28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	13.02	12.68
SPP South - Energy Price - 1H2023	1935	4/18/2028	4/18/2028	13.2	12.85	13.2	13.2	13.2	13.2	28.78	25.33	25.33	25.33	25.33	25.33	25.33	25.32	25.33	25.32	25.33	27.52	27.52	27.52	27.52	27.52	13.2	12.85
SPP South - Energy Price - 1H2023	1936	4/19/2028	4/19/2028	11.53	12.58	12.58	12.91	12.92	13.41	28.27	28.27	28.27	27.52	27.52	24.87	24.87	24.87	20.69	24.87	9.54	24.87	22.88	24.87	24.87	24.87	11.43	10.03
SPP South - Energy Price - 1H2023	1937	4/20/2028	4/20/2028	11.43	11.43	11.43	11.43	11.43	11.43	24.68	24.68	24.68	24.68	21.99	21.94	21.9	8.64	8.63	9.23	21.9	23.81	24.68	24.68	27.52	24.68	11.43	11.43
SPP South - Energy Price - 1H2023	1938	4/21/2028	4/21/2028	10.99	9.47	9.47	10.99	10.99	11.28	24.4	27.52	24.4	27.25	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	10.44	5.62	5.01
SPP South - Energy Price - 1H2023	1939	4/22/2028	4/22/2028	5.72	3.66	3.66	0.78	3.66	3.66	7.24	7.24	7.87	8.93	7.24	8.95	6.97	7.24	7.24	7.24	10.44	10.03	9.5	22.31	22.31	22.31	11.28	11.28
SPP South - Energy Price - 1H2023	1940	4/23/2028	4/23/2028	11.28	11.28	11.28	11.28	11.28	11.28	22.31	20.95	9.27	8.93	6.4	20.52	22.31	20.52	22.31	21.94	22.31	22.31	22.31	24.97	24.97	24.32	11.28	11.28
SPP South - Energy Price - 1H2023	1941	4/24/2028	4/24/2028	11.75	11.75	11.74	11.75	11.75	11.75	21.89	5.72	4.53	4.34	4.91	5.72	25.09	25.1	25.1	25.1	25.1	25.1	25.1	26.81	25.15	25.1	11.75	11.75
SPP South - Energy Price - 1H2023	1942	4/25/2028	4/25/2028	11.92	11.92	11.92	11.92	11.92	11.92	26.44	25.68	25.85	27.28	27.18	29.08	29.37	29.38	30.47	32.48	32.48	30.47	30.47	29.64	29.38	29.37	13.68	13.37
SPP South - Energy Price - 1H2023	1943	4/26/2028	4/26/2028	13.28	12.93	12.93	12.93	12.58	12.93	27.08	27.94	27.59	28.23	28.87	26.59	29.11	29.21	29.1	29.21	29.11	29.11	29.21	29.47	28.96	28.92	12.93	12.93
SPP South - Energy Price - 1H2023	1944	4/27/2028	4/27/2028	11.89	12.55	11.5	12.55	12.55	13.17	28.22	27.43	25.72	25.42	24.65	24.77	24.65	24.65	24.65	24.65	24	24.65	24.65	24.65	24.65	24.65	11.5	11.5
SPP South - Energy Price - 1H2023	1945	4/28/2028	4/28/2028	11.31	11.31	11.31	11.31	12.33	12.03	24.29	24.29	19.05	24.13	24.29	24.29	6.5	7.81	10.37	24.29	24.29	27.52	21.19	24.29	27.81	24.76	11.31	11.31
SPP South - Energy Price - 1H2023	1946	4/29/2028	4/29/2028	11.31	11.31	11.31	4.27	11.31	12.23	23.63	22.61	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	23.82	24.39	22.37	23.19	11.31	11.31
SPP South - Energy Price - 1H2023	1947	4/30/2028	4/30/2028	11.31	11.31	11.31	11.31	11.31	11.31	22.69	22.37	4.96	6.55	22.37	6.26	11.67	21.53	16.61	22.37	22.37	22.37	22.37	24.39	24.39	24.39	12.33	12.33
SPP South - Energy Price - 1H2023	1948	5/1/2028	5/1/2028	13.94	15.16	13.94	15.16	15.16	15.18	30.9	26.74	26.74	26.74	26.74	25.97	21.25	10.87	24.38	2.84	12.14	26.74	26.74	30.69	30.69	30.69	15.16	15.16
SPP South - Energy Price - 1H2023	1949	5/2/2028	5/2/2028	15.16	14.24	15.03	15.04	15.29	15.51	31.19	29.3	29.36	29.37	28.01	27.49	27.46	27.18	27.18	27.18	27.18	27.18	29.36	27.77	29.36	27.18	14.21	14.21
SPP South - Energy Price - 1H2023	1950	5/3/2028	5/3/2028	14.67	14.67	14.67	14.67	14.67	15.97	31.89	31.5	27.92	27.92	30.35	32.02	30.35	27.92	27.92	27.92	27.92	32.02	32.02	32.02	32.02	30.55	14.96	14.67
SPP South - Energy Price - 1H2023	1951	5/4/2028	5/4/2028	15.44	15.44	15.44	15.44	16.36	16.83	32.6	29.17	26.41	23.74	5.99	6.98	9.23	10.38	29.17	12.2	12.14	29.17	29.17	29.17	29.17	29.17	15.44	15.44
SPP South - Energy Price - 1H2023	1952	5/5/2028	5/5/2028	14.85	14.85	14.94	14.85	14.85	16.18	30.67	28.22	28.33	28.22	28.22	28.3	32.61	28.22	28.22	28.22	28.22	28.22	32.35	32.35	32.35	31.39	16.18	16.16
SPP South - Energy Price - 1H2023	1953	5/6/2028	5/6/2028	14.88	16.18	14.85	14.88	14.85	16.18	30.6	30.6	30.6	30.6	30.59	28.09	28.09	28.09	28.09	30.54	28.09	28.09	28.09	30.6	31.4	30.6	16.18	16.18
SPP South - Energy Price - 1H2023	1954	5/7/2028	5/7/2028	16.18	15.81	14.88	14.88	16.18	16.18	30.6	30.59	28.15	28.15	30.59	30.59	30.59	30.59	30.59	30.59	28.09	30.59	28.09	28.09	28.09	28.09	14.85	14.85
SPP South - Energy Price - 1H2023	1955	5/8/2028	5/8/2028	15.47	15.47	6.93	15.47	15.61	15.47	29.21	31.76	29.21	29.21	32.53	29.21	33.46	33.46	29.38	33.46	29.21	29.21	29.21	29.21	29.21	31.76	7.44	15.47
SPP South - Energy Price - 1H2023	1956	5/9/2028	5/9/2028	15.68	15.68	15.68	17.09	15.68	15.88	29.55	29.55	29.55	29.55	27.19	29.55	29.55	29.55	31.1	33.91	33.65	30.9	33.58	33.58	33.58	29.96	15.68	15.68
SPP South - Energy Price - 1H2023	1957	5/10/2028	5/10/2028	15.81	15.81	15.81	15.81	15.81	16.02	29.76	29.77	30.28	33.58	33.58	33.58	33.58	34.07	33.58	34.07	33.58	33.58	34.07	34.07	34.07	34.07	17.24	15.81
SPP South - Energy Price - 1H2023	1958	5/11/2028	5/11/2028	17.47	16.2	16.07	16.07	16.07	17.47	31.41	33.58	33.58	33.58	34.54	34.54	34.83	34.54	34.54	34.87	34.54	34.83	34.83	34.87	34.87	34.54	18	17.16
SPP South - Energy Price - 1H2023	1959	5/12/2028	5/12/2028	17.15	16.99	17.39	15.95	15.95	17.39	34.33	31.06	32.23	33.58	33.31	33.58	33.58	33.58	34.33	34.33	34.33	34.33	34.33	34.65	34.65	34.33	17.86	17.86
SPP South - Energy Price - 1H2023	1960	5/13/2028	5/13/2028	17.39	17.39	15.95	15.95	15.95	15.95	30.16	31.44	33.78	33.78	33.78	35.15	33.78	31.08	32.9	32.9	31.57	32.9	32.9	33.78	33.78	32.9	15.95	15.95
SPP South - Energy Price - 1H2023	1961	5/14/2028	5/14/2028	15.95	15.95	15.95	15.95	15.95	15.95	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.76	30.16	30.16	30.16	30.16	30.16	30.16	15.95	15.95
SPP South - Energy Price - 1H2023	1962	5/15/2028	5/15/2028	16.69	16.69	16.69	16.69	16.75	18.22	33.24	31.18	32.7	31.18	32.41	33.58	33.24	31.18	31.18	31.18	31.18	31.18	31.18	33.58	35.67	32.03	16.69	16.69
SPP South - Energy Price - 1H2023	1963	5/16/2028	5/16/2028	16.81	16.82	16.82	16.82	16.82	16.82	31.39	31.39	31.39	31.39	31.39	31.39	27.39	31.39	28.88	31.39	28.32	31.39	31.39	31.4	31.4	31.4	16.82	16.82
SPP South - Energy Price - 1H2023	1964	5/17/2028	5/17/2028	6.73	6.18	5.76	5.46	5.26	5.1	7.39	6.42	5.53	5.29	5.99	6.98	7.93	9.53	10.86	12.2	12.14	11.22	30.78	30.78	30.78	30.78	16.44	16.42
SPP South - Energy Price - 1H2023	1965	5/18/2028	5/18/2028	6.73	6.18	5.76	5.46	5.26	5.1	8.8	6.42	5.53	5.29	5.99	6.98	7.93	30.47	30.47	26.02	30.47	30.47	30.47	30.47	33.58	30.47	16.24	16.24
SPP South - Energy Price - 1H2023	1966	5/19/2028	5/19/2028	15.01	15.2	15.11	14.62	14.6	15.52	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	13.46	7.44	15.52
SPP South - Energy Price - 1H2023	1967	5/20/2028	5/20/2028	6.73	6.18	5.76	5.46	5.26	5.1	8.82	7.65	9.81	6.31	12.5	29.35	29.35	29.35	31.99	32.19	32.85	32.19	32.84	32.84	31.17	29.35	15.52	15.52
SPP South - Energy Price - 1H2023	1968	5/21/2028	5/21/2028	15.52	7.25	5.76	15.52	15.52	15.52	12.93	29.35	10.73	31.99	31.99	31.9	31.99	29.35	29.35	29.35	29.35	29.35	29.35	32.82	31.17	32.85	16.87	15.52
SPP South - Energy Price - 1H2023	1969	5/22/2028	5/22/2028	13.83	13.83	13.83	13.83	13.83	13.9	20.99	6.42	5.61	26.57	26.93	26.82	26.89	26.57	30.5	26.57	30.7	30.5	30.5	30.7	30.5	28.03	14.59	13.83
SPP South - Energy Price - 1H2023	1970	5/23/2028	5/23/2028	16.12	16.12	16.12	16.12	16.13	16.12	30.26	30.26	32.03	31.79	34.54	34.64	35.3	34.64	34.64	35.53	34.97	35.53	35.05	35.35	35.49	35.2	18.06	16.12
SPP South - Energy Price - 1H2023	1971	5/24/2028	5/24/2028	18.37	18.37	18.38	18.37	17.57	18.38	33.79	33.39	33.27	33.58	33.98	33.23	33.58	34.88	33.58	35.92	33.58	33.58	31.41	31.41	31.41	31.41	16.83	16.83
SPP South - Energy Price - 1H2023	1972	5/25/2028	5/25/2028	16.94	16.94	3.8	3.47	16.94	18.29	31.59	33.58	33.58	33.58	33.58	33.58	33.58	35.52	33.58	35.15	36.12	33.58	31.59	31.59	31.59	31.59	16.94	17.06
SPP South - Energy Price - 1H2023	1973	5/26/2028	5/26/2028	17.24	17.24	17.24	3.47	17.24	17.24	32.23	33.58	33.59	32.08	32.08	32.08	33.58	32.77	34.23	36.67	33.58	35.8	32.08	33.58	34.25	32.08	17.24	17.24
SPP South - Energy Price - 1H2023	1974	5/27/2028	5/27/2028	17.24	17.24	17.24	17.24	17.24	17.33	32.72	32.61	32.61	32.75	35.62	33.84	32.61	35.62	35.62	35.62	35.62	35.62	35.83	35.62	35.77	35.62	18.83	18.83
SPP South - Energy Price - 1H2023	1975	5/28/2028	5/28/2028	17.4	17.41	17.24	18.83	18.83	18.59	35.12	35.62	35.62	35.62	35.62	36.6	36.6	36.6	36.6	36.6	36.6	36.6	35.83	35.62	35.77	35.62	18.83	17.24
SPP South - Energy Price - 1H2023	1976	5/29/2028	5/29/2028	17.24	17.24	17.24	17.24	17.24	17.33	32.08	30.69	11.47	32.08	32.08	32.08	32.08	32.08	32.08	32.08	32.08	35.8	33.58	33.67	33.58	33.58	17.74	18.83
SPP South - Energy Price - 1H2023	1977	5/30/2028	5/30/2028	17.08	16.51	17.4	16.51	17.4	16.85	31.05	31.55	31.21	33.58	35.34	35.34	35.34	35.34	34.35	35.7	35.34	35.34	35.7	35.7	35.7	35.34	18.51	18.51
SPP South - Energy Price - 1H2023	1978	5/31/2028	5/31/2028	18.34	18.34	18.12	18.12	18.12	18.12	33.58	31.05	31.05	31.05	31.05	32.03	34.83	31.05	34.5	35.51	33.58	34.77	33.7	31.05	31.05	31.05	16.6	16.6
SPP South - Energy Price - 1H2023	1979	6/1/2028	6/1/2028	17.45	17.45	17.44	17.44	17.44	17.45	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	28.85	5.98	5.4
SPP South - Energy Price - 1H2023	1980	6/2/2028	6/2/2028	5.65	5.14	5.07	4.28	17.31	17.31	28.66	28.66	28.66	28.66	29.38	32.89	32.89	32.89	33.11	32.89	32.89	32.89	32.89	32.89	32.89	32.89	18.82	17.31
SPP South - Energy Price - 1H2023	1981	6/3/2028	6/3/2028	17.31	17.31	17.31	17.31	17.31	17.31	27.74	27.74	27.74	27.94	30.17	30.17	30.95	30.95	34.08	34.08	30.95	30.95	30.17	30.16	30.16	30.16	17.48	17.31
SPP South - Energy Price - 1H2023	1982	6/4/2028	6/4/2028	17.32	17.77	18.82	18.82	18.82	17.55	27.74	27.74	27.74	27.74	27.74	27.74	27.74	27.74	27.74	27.74	27.74	30.16	30.16	30.95	30.44	30.17	17.48	18.2
SPP South - Energy Price - 1H2023	1983	6/5/2028	6/5/2028	20.56	19.56	19.65	18.91	19.08	19.33	35.4	35.4	35.4	35.71	35.71	37.42	35.7	35.83	35.83	35.7	35.7	35.8	36.28	35.71	35.71	35.7	20.61	22
SPP South - Energy Price - 1H2023	1984	6/6/2028	6/6/2028	21.93	22.42	22.42	20.7	22.42	22.42	37.47	38.32	38.16	37.94	39.1	38.32	39.2	40.29	42.38	42.1	38.63	39.53	39.28	41.38	41.7	42.38	24.52	21.15
SPP South - Energy Price - 1H2023	1985	6/7/2028	6/7/2028	21.16	21.12	23.07	23.07	23.07	23.3	37.31	38.93	42.66	39.27	43.68	43.54	43.54	43.68	51.23	51.14	50.91	43.54	41.24	43.54	42.93	42.07	24.62	24.45
SPP South - Energy Price - 1H2023	1986	6/8/2028	6/8/2028	23.61	23.19	23.19	23.19	23.19	23.19	37.33	38.19	38.41	39.36	42.66	41.64	42.66	49.73	49.73	51.96	49.95	40.23	40.63	41.36	41.94	40.64	23.19	22.04
SPP South - Energy Price - 1H2023	1987	6/9/2028	6/9/2028	21.63	21.69	21.21	21.22	21.44	21.81	34.37	35.39	33.63	32.56	34.23	35.47	34.69	35.78	35.47	35.62	32.86	33.14	30.97	35.78	35.55	35.47	21.97	20.27
SPP South - Energy Price - 1H2023	1988	6/10/2028	6/10/2028	18.96	18.96	18.96	18.96	18.96	18.96	30.38	30.38	30.38	30.38	30.38	30.38	33.11	33.11	33.11	33.11	33.11	33.11	33.11	33.11	33.11	33.11	18.96	18.96
SPP South - Energy Price - 1H2023	1989	6/11/2028	6/11/2028	18.96	18.96	18.96	18.96	18.96	18.96	30.38	30.38	30.38	30.38	33.11	30.38	33.11	33.11	33.11	30.38	30.38	30.38	33.11	33.11	33.99	33.99	20.66	18.96
SPP South - Energy Price - 1H2023	1990	6/12/2028	6/12/2028	20.76	20.76	20.76	20.76	20.76	20.79	33.48	33.47	33.47	33.47	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	20.76	20.75
SPP South - Energy Price - 1H2023	1991	6/13/2028	6/13/2028	5.98	5.14	4.98	4.28	4.15	19.04	6.73	3.54	5.72	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	31.07	19.04	19.04

SPP South - Energy Price - 1H2023	1992	6/14/2028	6/14/2028	18.99	18.99	18.99	18.99	18.99	18.99	31.01	31.01	31.01	31.01	31.01	31.01	31.01	34.13	31.01	31.01	31.01	31.01	35.52	35.52	35.52	35.52	21.25	18.99
SPP South - Energy Price - 1H2023	1993	6/15/2028	6/15/2028	20.09	20.09	20.09	6.48	20.09	20.09	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	36.26	37.25	37.25	37.25	37.25	37.87	37.25	22.69	21.65
SPP South - Energy Price - 1H2023	1994	6/16/2028	6/16/2028	21.43	21.65	21.1	21.49	21.72	22.06	34.01	35.79	37.44	37.44	37.44	37.81	37.81	37.87	39.04	38.56	37.99	37.81	38.83	40.3	40.9	38.83	24.71	23.56
SPP South - Energy Price - 1H2023	1995	6/17/2028	6/17/2028	23.22	22.61	22.06	22.06	22.06	22.06	35.16	35.36	36.32	37.87	40.14	42.68	41.89	43.8	41.89	38.96	35.36	38.91	41.89	42.97	35.36	35.36	23.47	22.06
SPP South - Energy Price - 1H2023	1996	6/18/2028	6/18/2028	22.76	22.06	22.06	21.46	20.99	21.92	33.94	35.24	36.32	40.49	41.89	41.89	42.97	42.97	43.11	42.55	41.4	42.89	41.89	42.97	42.97	41.89	25.04	22.98
SPP South - Energy Price - 1H2023	1997	6/19/2028	6/19/2028	23.78	23.22	23.15	23.15	23.15	23.59	37.41	37.89	38.97	38.19	36.83	39.39	39.39	40.95	39.39	39.39	35.83	38.97	38.97	39.39	43.1	39.28	24.45	23.78
SPP South - Energy Price - 1H2023	1998	6/20/2028	6/20/2028	24.77	23.78	23.42	23.42	23.46	23.67	39.01	39.34	40.45	40.18	39.41	39.35	44.14	44.14	44.14	40.38	39.35	41.54	41.92	43	42.77	42.58	26.14	24.85
SPP South - Energy Price - 1H2023	1999	6/21/2028	6/21/2028	25.16	26.14	24.53	24.52	24.52	25.16	39.25	39.97	40.41	39.97	42.92	40.02	41.76	43.13	44.92	41.06	41.29	42.42	41.5	44.05	44.92	45.65	29.26	26.14
SPP South - Energy Price - 1H2023	2000	6/22/2028	6/22/2028	25.71	25.13	25.05	24.91	25.13	25	39.64	44.64	44.15	46.8	45.8	44.47	45.36	44.94	46.22	44.14	45.36	46.13	46.13	45.36	47.06	46.13	29.65	27.11
SPP South - Energy Price - 1H2023	2001	6/23/2028	6/23/2028	26.14	26.14	26.14	24.52	26.14	26.14	39.26	39.55	41.51	43.29	44.02	43.15	42.37	43.79	44.66	48.66	40.01	41.53	41.6	42.62	41.44	39.48	25.77	24.67
SPP South - Energy Price - 1H2023	2002	6/24/2028	6/24/2028	24.76	23.85	23.85	23.29	23.85	23.85	37.21	38.23	41	40.24	38.69	41.89	41.89	43.45	46.17	41.89	41.89	41.89	41.89	38.54	41.89	38.23	23.22	22.3
SPP South - Energy Price - 1H2023	2003	6/25/2028	6/25/2028	23.22	22.08	23.22	23.22	23.22	23.22	37.21	37.21	37.21	37.21	37.21	38.23	38.23	38.23	38.23	41.74	40.45	40.7	38.23	38.23	38.23	37.21	23.22	21.26
SPP South - Energy Price - 1H2023	2004	6/26/2028	6/26/2028	21.26	20.06	20.06	20.12	20.32	21.89	35.83	37.09	37.2	37.15	37.2	37.56	37.2	37.56	37.2	36.56	35.83	32.51	32.51	35.33	32.51	32.51	20.06	20.18
SPP South - Energy Price - 1H2023	2005	6/27/2028	6/27/2028	20.14	20.25	20.18	20.14	20.41	20.15	34.82	35.83	37.15	37.33	37.33	37.33	37.33	37.33	38.31	37.69	37.69	37.33	37.33	37.69	37.69	37.69	22.58	22.28
SPP South - Energy Price - 1H2023	2006	6/28/2028	6/28/2028	23.12	22.51	22.51	22.66	23.12	22.51	36.07	35.83	34.35	35.16	37.6	38.45	38.07	38.07	37.85	36.32	37.91	34.77	37.47	37.6	37.8	37.23	22.51	20.82
SPP South - Energy Price - 1H2023	2007	6/29/2028	6/29/2028	20.18	18.86	18.8	18.8	19.59	18.94	30.75	30.75	31.72	31.14	30.8	31.66	34.27	35.53	36.89	35.57	35.23	35.23	35.53	35.23	35.23	35.23	19.78	19.41
SPP South - Energy Price - 1H2023	2008	6/30/2028	6/30/2028	22.49	22.49	22.49	22.49	22.14	23.1	35.85	37.15	38.43	38.43	38.43	38.43	42.51	42.97	49.56	47.51	41.84	49.56	48.21	42.97	41.65	38.65	24.35	23.95
SPP South - Energy Price - 1H2023	2009	7/1/2028	7/1/2028	35.7	33.88	33.41	33.2	34.69	33.88	43.65	44.95	48.7	44.55	44.83	50.94	53.22	54.03	52.71	60.61	51.27	58.08	50.94	44.83	46.68	44.89	35.7	35.13
SPP South - Energy Price - 1H2023	2010	7/2/2028	7/2/2028	35.48	34.6	33.88	33.88	33.88	33.88	41.52	43.64	43.41	44.83	43.65	46.33	46.85	52.74	52.83	51.46	50.94	47.73	50.94	50.94	50.94	49.83	37.79	34.54
SPP South - Energy Price - 1H2023	2011	7/3/2028	7/3/2028	34.9	34.11	34.21	34.21	34.21	34.26	42.42	43.06	43.06	43.5	48.15	55.84	56.73	56.74	56.81	56.81	50.27	49.13	50.58	46.48	49.78	48.15	36.55	36.3
SPP South - Energy Price - 1H2023	2012	7/4/2028	7/4/2028	35.81	33.3	33.3	33.3	34.7	34.21	44.04	45.17	48.64	52.3	56.12	56.62	57.13	56.87	62.97	63.51	61.74	62.65	62.44	56.31	56.73	56.65	46.26	47.31
SPP South - Energy Price - 1H2023	2013	7/5/2028	7/5/2028	44.67	39.82	38.18	37.27	38.4	38.49	46.72	48.99	53.62	52.7	57.22	57.32	57.29	57.32	56.19	55.4	50.54	57.27	59.12	59.12	54.12	56.59	45.91	40.89
SPP South - Energy Price - 1H2023	2014	7/6/2028	7/6/2028	38.49	36.44	37.25	37.31	38.49	38.49	44.45	46.82	48.4	49.63	49.9	48.59	55.15	49.9	58.92	55.79	62.14	58.88	58.88	58.88	50.2	55.17	50.11	39.92
SPP South - Energy Price - 1H2023	2015	7/7/2028	7/7/2028	39.92	38.49	38.49	38.49	36.68	37.6	43.68	46.2	46.83	50.67	54.61	50.79	55.3	55.34	58.28	58.28	61.7	61.15	58.38	55.31	55.31	55.26	46.6	45.91
SPP South - Energy Price - 1H2023	2016	7/8/2028	7/8/2028	42.02	39.92	39.26	39.26	39.26	38.49	50.94	50.94	48.84	49.46	50.94	51.96	52.08	53.97	59.03	55.87	55.69	58.72	65.9	63.78	59.03	59.15	41.55	38.49
SPP South - Energy Price - 1H2023	2017	7/9/2028	7/9/2028	38.49	38.08	36.24	35.18	36.48	37.39	45	48.27	48.5	48.27	50.94	50.94	50.94	52.83	58.9	51.96	62.55	52.83	50.94	56.86	52.75	51.96	37.69	36.82
SPP South - Energy Price - 1H2023	2018	7/10/2028	7/10/2028	35.68	34.35	34.35	34.35	34.35	34.65	43.65	43.65	43.65	45.03	45.49	45.22	46.74	42.86	44.25	43.65	43.21	43.65	44.29	43.65	43.66	45.22	34.35	34.35
SPP South - Energy Price - 1H2023	2019	7/11/2028	7/11/2028	34.42	34.62	34.65	33.92	33.77	35.27	44.89	45.35	45.44	45.41	50.37	49.58	50.44	49.95	52.4	52.16	48.8	49.71	49.51	50.37	48.78	44.65	35.95	35.95
SPP South - Energy Price - 1H2023	2020	7/12/2028	7/12/2028	36.6	35	35	35	35.66	35.62	44.35	45.09	44.32	44.78	43.88	45.12	46.17	45.92	46.17	49.4	49.19	45.04	49.17	46.68	44.27	44.29	35	35
SPP South - Energy Price - 1H2023	2021	7/13/2028	7/13/2028	36.17	35.88	35.78	36.17	36.12	35.74	43.12	45.1	41.96	44.34	46.96	46.12	45.61	47.08	45.61	45.85	45.1	45.1	45.36	52.76	45.1	50.71	39.92	38.49
SPP South - Energy Price - 1H2023	2022	7/14/2028	7/14/2028	35.08	34.15	31.83	31.88	34.15	35.08	43.58	46.22	44.44	49.29	49.29	46.22	45.35	49.29	49.29	45.35	46.22	46.98	49.29	49.29	49.29	49.95	41.58	38.49
SPP South - Energy Price - 1H2023	2023	7/15/2028	7/15/2028	38.49	37.59	36.67	36.58	35.08	34.67	46.43	46.43	46.86	50.94	50.36	46.86	50.94	51.37	55.03	55.03	56.06	51.37	60.21	52.83	50.94	50.94	37.58	35.08
SPP South - Energy Price - 1H2023	2024	7/16/2028	7/16/2028	34.15	31.93	31.83	31.94	34.15	34.2	43.01	45.19	45.19	45.65	45.19	46.43	46.32	46.43	45.19	49.12	46.43	45.19	47.94	51.46	55.03	52.83	38.78	38.49
SPP South - Energy Price - 1H2023	2025	7/17/2028	7/17/2028	37.46	36.57	34.51	36.09	36.37	36.09	42.96	42.96	44.56	47.49	49.47	49.51	52.91	54.92	55.36	55.37	55.62	56.08	55.36	52.28	55.91	54.62	45.56	42.28
SPP South - Energy Price - 1H2023	2026	7/18/2028	7/18/2028	38.47	38.47	36.49	36.58	38.08	37.45	44.21	47.85	52.01	51.81	47.85	52.98	55.78	52.98	55.78	51.46	56.39	48.74	56.43	49.76	49.46	52.35	41.46	35.23
SPP South - Energy Price - 1H2023	2027	7/19/2028	7/19/2028	33.48	33.48	32.95	33.48	33.49	32.6	40.48	39.98	42.31	41.8	42.57	44.3	47.27	42.31	42.77	44.26	47.21	44.18	52.76	48.55	42.69	44.21	33.49	33.49
SPP South - Energy Price - 1H2023	2028	7/20/2028	7/20/2028	32.8	32.8	32.8	32.8	32.8	34.34	41.6	41.6	43.79	44.96	45.45	46.72	47.58	47.22	48.01	47.62	45.97	46.88	47.14	47.67	47.8	48.43	39.92	36.61
SPP South - Energy Price - 1H2023	2029	7/21/2028	7/21/2028	34.5	33.51	33.71	33.1	33.71	33.66	41.54	42.65	44.08	50.49	51.4	53.05	53.39	51.11	53.39	53.39	53.39	53.39	53.4	53.39	53.39	45.21	38.26	36.4
SPP South - Energy Price - 1H2023	2030	7/22/2028	7/22/2028	36.29	36.33	32.38	35.35	35.52	35.35	46.38	46.57	45.55	47.26	48.07	50.94	50.94	50.64	50.94	50.94	50.94	50.94	50.94	50.64	50.64	44.96	32.38	31.54
SPP South - Energy Price - 1H2023	2031	7/23/2028	7/23/2028	31.64	31.53	31.53	31.53	32.38	31.53	41.72	41.73	41.72	41.73	41.73	42.85	45.13	50.64	50.94	50.94	50.94	50.64	50.64	50.32	47.32	50.4	37.4	35.63
SPP South - Energy Price - 1H2023	2032	7/24/2028	7/24/2028	32.69	31.5	32.35	32.61	32.52	32.64	41.25	40.37	40.37	41.13	41.51	43.89	49.26	44.12	44.13	45.72	52.27	51.89	53.35	51.32	45.72	42.93	38.23	32.6
SPP South - Energy Price - 1H2023	2033	7/25/2028	7/25/2028	32.6	32.6	32.6	32.6	32.21	31.75	41.39	41.48	41.39	43.82	45.41	41.78	49.87	53.15	52.39	50.98	51.11	51.11	53.1	48.94	46.05	45.71	34.73	34.97
SPP South - Energy Price - 1H2023	2034	7/26/2028	7/26/2028	34.63	32.93	32.93	32.06	32.49	32.92	41.73	42.13	43.3	46.48	50.15	53.56	53.4	53.79	54.32	54.4	54.32	53.96	53.83	48.24	47.47	44.15	38.05	38.49
SPP South - Energy Price - 1H2023	2035	7/27/2028	7/27/2028	32.4	34.24	38.05	36.27	37.04	38.49	46.79	43.05	43.05	46.93	53.74	54.22	55.19	55.63	55.28	55.27	55.24	54.86	55.24	54.68	54.32	53.78	38.49	38.49
SPP South - Energy Price - 1H2023	2036	7/28/2028	7/28/2028	34.4	38.49	33.61	36.97	38.49	39	43.22	42.77	46.55	50.11	47.95	47.04	52.66	54.48	56.12	56.75	54.96	53.75	54.21	53.11	48.77	46.55	38.49	33.51
SPP South - Energy Price - 1H2023	2037	7/29/2028	7/29/2028	34.31	32.98	32.11	32.98	32.98	32.11	43.62	45.32	50.94	51.51	55.65	64.65	64.31	64.75	65.09	65.66	64.65	54.46	59.2	50.94	47.51	48.63	33.43	33.65
SPP South - Energy Price - 1H2023	2038	7/30/2028	7/30/2028	32.98	32.98	32.98	32.11	32.98	32.84	42.5	42.5	40.8	42.5	43.64	50.94	50.94	52.83	56.44	52.83	55.44	55.89	55.89	64.6	58.43	52.83	38.49	36.44
SPP South - Energy Price - 1H2023	2039	7/31/2028	7/31/2028	34.23	32.47	33.16	32.47	32.47	35.86	42.17	42.32	42.59	43.37	47.17	53.02	53.52	54.14	54.72	57.2	57.7	57.21	55.78	56.92	53.63	53.22	41.38	42.82
SPP South - Energy Price - 1H2023	2040	8/1/2028	8/1/2028	45.31	42.29	41.93	40.27	41.03	43.37	49.2	50.27	50.93	52.75	57.9	58.69	61.2	64.91	65.34	67.11	67.06	67.11	67.11	63.35	62.53	54.67	50.94	47.93
SPP South - Energy Price - 1H2023	2041	8/2/2028	8/2/2028	43.08	37.89	39.25	38.92	41.93	41.93	49.56	49.02	46.02	53.72	56.91	59.05	59.71	59.99	60.07	55.62	54.73	59.97	59.08	58.6	52.81	52.86	46.17	41.93
SPP South - Energy Price - 1H2023	2042	8/3/2028	8/3/2028	41.58	40.07	38.34	38.34	39.39	39.54	46.49	46.49	51.69	49.99	53.7	54.5	57.16	59.78	52.94	60.2	60.2	60	58.39	58.4	50.23	49.93	41.93	39.39
SPP South - Energy Price - 1H2023	2043	8/4/2028	8/4/2028	40.61	39.87	39.45	39.16	40.61	42.91	45.75	45.75	46.13	46.26	49.06	48.14	52.01	52.51	52.51	55.85	51.78	56.1	56.9	55.27	50.96	47.95	41.93	40.97
SPP South - Energy Price - 1H2023	2044	8/5/2028	8/5/2028	40.61	39.87	39.45	39.16	38.46	38.11	36.64	36.64	37.65	38.17	37.64	38.29	44.32	44.66	45.44	44.66	44.64	45.08	40.31	44.66	44.66	41.44	43.35	41.69
SPP South - Energy Price - 1H2023	2045	8/6/2028	8/6/2028	40.61	41.58	41.93	41.93	40.78	40.05	38.55	38.01	38.33	40.31	40.31	41.67	44.66	48.85	48.86	47.22	48.15	48.5	47.73	45.32	47.97	44.66	41.68	41.29
SPP South - Energy Price - 1H2023	2046	8/7/2028	8/7/2028	40.27	39.53	39.44	39.53	40.39	41.93	46.91	47.32	48.9	54.47	53.82	59.48	59.48	59.82	60.26	60.39	59.27	55.81	52.52	53.18	53.45	49.78	41.93	39.92
SPP South - Energy Price - 1H2023	2047	8/8/2028	8/8/2028	40.16	39.92	38.62	38.62	39.92	39.73	45.99	46.4	46.26	47.42	51.73	51.73	58.2	54.27	55.27	59.12	47.91	47.67	48.71	49.22	50.74	47.57	40.56	40.82
SPP South - Energy Price - 1H2023	2048	8/9/2028	8/9/2028	32.44	32.44	32.44	32.44	32.44	32.44	38.48	39.21	37.5	36.33	37.64	39.51	39.51	39.51	43.27	39.43	42.29	39.51	43.21	43.21	40.51	39.51	32.08	31.61
SPP South - Energy Price - 1H2023	2049	8/10/2028	8/10/2028	29.07	29.07	28.35	29.07	29.07	29.07	35.93	35.93	34.22	36.13	35.93	36.13	36.18	37.01	42.05	41.27	39.1	40.73	40.73	41.79	40.31	36.86	32.26	32.53
SPP South - Energy Price - 1H2023	2050	8/11/2028	8/11/2028	28.05	28.05	28.76	28.76	28.05	28.76	35.63	35.82	35.63	35.82	35.63	35.82	35.82	37	37.01	38.72	37.01	39.43	41.94	38.72	36.89	35.82	29.18	28.76
SPP South - Energy Price - 1H2023	2051	8/12/2028	8/12/2028	28.76	28.76	28.76	28.76	28.76	28.76	27.65	27.65	28.67	30.39	31.71	37.13	37.17	40.31	40.31	41.8	40.31	40.17	33.35	32.4	30.02	29.76	28.76	28.76
SPP South - Energy Price - 1H2023	2052	8/13/2028	8/13/2028	28.76	28.05	28.05	28.05	28.05	28.05	26.96	26.96	26.96	27.65	27.28	30.08	27.29	32.4	31.78	29.59	29.59	30.58	32.79	37.25	32.87	32.4	31.99	32.26
SPP South - Energy Price - 1H2023	2053	8/14/2028	8/14/2028	35.49	34.74	33.27	33.27	33.17	33.27	40.01	40.01	40.01	40.01	40.34	43.06	43.68	44.22	44.28	43.4	43.52	41.56	44.22	44.22	44.22	43.09	36.07	34.35
SPP South - Energy Price - 1H2023	2054	8/15/2028	8/15/2028	40.51	39.04	39.04	38.78	38.19	39.04	45.63	44	44.86	45.79	46.14	49.28	51.84	52.34	52.34	59.34	51.29	52.1	52.28	52.53	52.77	49.49	40.93	39.2
SPP South - Energy Price - 1H2023	2055	8/16/2028	8/16/2028	41.44	40.11	40.11	39.71	39.11	40.11	46.68	45.52	44.97	46.7	50.4	50.58	52.83	52.76	54.3	53.55	53.22	53.63	60.25	59.34	54.31	51.28	41.85	40.38
SPP South - Energy Price - 1H2023	2056	8/17/2028	8/17/2028	41.13	40.38	39.97	39.76	40.38	40.38	46.86	46.33	45.61	48.74	50.86	53.28	52.71	54.09	53.25	53.06	61.09	54.38	62.3	59.69	55.46	55.67	50.12	45.21
SPP South - Energy Price - 1H2023	2057	8/18/2028	8/18/2028	41.93	41.93	43.48	41.93	41.93	41.93	50.5	46.08	46.06	45.52	52.34	51.71	57.18	58.03	59.4	59.48	58.84	58.84	58.84	54.05	53.43	52.26	45.55	41.93
SPP South - Energy Price - 1H2023	2058	8/19/2028	8/19/2028	41.64	41.1	40.32	39.79	39.92	40.12	38.56	40.31	38.56	41.8	46.14	47.86	47.4	55.14	54.01	55.14	55.14	60.98	58.28	54.93	53.75	54.66	45.55	43.48
SPP South - Energy Price - 1H2023	2059	8/20/2028	8/20/2028	42.51	41.93	39.79	39.1	38.42	39.73	38.25	37.75	40.87	44.75	48.76	48.12	49.59	55.14	55.14	55.14	57.88	59.41	55.14	55.14	51.3	48.66	45.55	43.42
SPP South - Energy Price - 1H2023	2060	8/21/2028	8/21/2028	41.93	41.93	41.25	41.93	41.93	43.48	50.88	54.6	54.62	58.37	59.71	59.82	63.25	63.19	67.37	65.93	65.57	66.03	65.54	64.92	59.71	57.55	51.64	43.48
SPP South - Energy Price - 1H2023	2061	8/22/2028	8/22/2028	41.93	40.29	40.29	39.87	39.21	41.93	51.64	52.38	47.95	52.79	56.75	54.28	54.83	54.24	61.45	53.8	54.97	54.97	61.96	61.02	52.79	54.87	45.85	43.48
SPP South - Energy Price - 1H2023	2062	8/23/2028	8/23/2028	41.79	40.42	40.42	40.43	39.8	40.43	46.98	47.99	47.91	55.79	57.1	61.64	65.52	69.76	70.1	71.29	76.48	70.05	70.05	69.06	65.56	61.64	59.99	50.24
SPP South - Energy Price - 1H2023	2063	8/24/2028	8/24/2028	47	43.34	41.93	43.37	43.48	47	55.02	53.58	57.72	57.02	57.38	62.97	68	70.36	70.76	70.8	70.56	70.56	66.33	70.76	66.27	57.16	54.67	49.72
SPP South - Energy Price - 1H2023	2064	8/25/2028	8/25/2028	45.75	48.1	44.22	46.54	48.74	48.78	57.58	57.98	58.21	63.91	70.08	70.41	70.36	68.15	70.19	70.44	70.36	70.41	68.58	64.66	55.89	55.21	49.55	50.08
SPP South - Energy Price - 1H2023	2065	8/26/2028	8/26/2028	45.03	43.09	44.26	43.43	43.2	44.36	41.8	40.31	40.31	46.99	51.66	51.68	58.08	58.09	59.48	61.89	62.7	58.09	61.1	58.09	50.34	47.86	45.12	44.7
SPP South - Energy Price - 1H2023	2066	8/27/2028	8/27/2028	43.48	43.99	42.37	41.93	40.65	41.93	40.31	40.31	40.31	40.31	41.84	46.41	48.62	48.14	49.78	47.02	47.83	44.36	46.41	47.47	47.45	44.9	41.93	41.93
SPP South - Energy Price - 1H2023	2067	8/28/2028	8/28/2028	37.93	37.93	36.78	34.45	35.5	35.5	40.36	39.28	38.98	39.28	42.6	42.89	42.92	43.04	43.26	43.32	43.32	49.85	48.03	46.89	49.18	50.15	41.93	41.93
SPP South - Energy Price - 1H2023	2068	8/29/2028	8/29/2028	41.93	41.93	41.93	41.93	41.93	43.48	49.21	45.27	45.27	47.07	49.85	50.47	50.2	50.2	58.52	58.69	57.48	55.05	53.23	51.83	54.38	51.52	43.48	42.24
SPP South - Energy Price - 1H2023	2069	8/30/2028	8/30/2028	41.93	40.18	38.38	40.08	40.18	40.08	43.5	42.93	42.93	42.93	42.92	42.93	43.35	43.51	44.49	44.57	45.39	53.39	48.04	48.68	48.1	47.49	40.14	40.34
SPP South - Energy Price - 1H2023	2070	8/31/2028	8/31/2028	35.67	36.21	36.99	35.83	36.89	39.34	43.1	40.1	40.1	40.4	40.11	40.1	40.1	41.65	43.38	42.16	43.56	48.04	52.49	47.9	44.98	44.93	42.82	41.93
SPP South - Energy Price - 1H2023	2071	9/1/2028	9/1/2028	41.01	41.01	38.35	39.17	41.18	41.45	46.54	43.83	44.9	49.95	48.43	47.18	46.88	54.22	58.4	60.43	54.89	57.85	54.22	48.43	50.55	48.14	38.35	38.35
SPP South - Energy Price - 1H2023	2072	9/2/2028	9/2/2028	38.35	38.69	38.35	38.35	34.97	38.35	47.99	48.21	51.42	51.42	62.13	69.44	68.48	70.02	70.02	70.02	70.02	57.33	70.02	70.02	70	63.15	39.74	34.97
SPP South - Energy Price - 1H2023	2073	9/3/2028	9/3/2028	36.22	34.97	34.97	34.04	34.97	34.97	46.89	45.64	46.89	46.89	51.42	51.42	55.8	57.64	69.5	70.02	61.56	61.11	59.61	61.11	60.46	60.24	38.35	36.82
SPP South - Energy Price - 1H2023	2074	9/4/2028	9/4/2028	36.3	38.35	38.35	34.97	38.35	38.35	41.96	41.96	41.52	43.18	43.31	47.04	45.7	45.52	46.54	46.54	44.91	46.54	49.48	47.76	46.54	45.11	38.35	36.21

SPP South - Energy Price - 1H2023	2075	9/5/2028	9/5/2028	36.21	34.62	35.57	35.57	34.62	36.21	42.11	42.11	39.92	42.11	41.56	44.1	46.43	46.12	45.34	45.97	47.03	42.57	47.08	44.93	46.72	42.57	35.57	34.62
SPP South - Energy Price - 1H2023	2076	9/6/2028	9/6/2028	35.06	35.06	35.06	35.06	35.06	36.02	43.03	44.14	44.65	47.73	49.69	48.67	48.14	48.32	48.69	46.84	47.84	46.36	47.84	48.1	48.63	46.51	39.04	38.35
SPP South - Energy Price - 1H2023	2077	9/7/2028	9/7/2028	38.35	38.35	35.4	35.4	38.35	38.35	43.51	43.78	42.39	42.01	43.53	46.08	41.94	42.39	42.39	41.94	41.94	45.48	42.39	42.39	44.12	41.94	36.02	35.4
SPP South - Energy Price - 1H2023	2078	9/8/2028	9/8/2028	34.82	32.73	33.9	33.9	33.9	34.82	40.31	39.51	38.78	38.1	38.22	38.1	38.1	38.1	38.1	38.1	38.1	38.1	41.37	41.37	41.37	38.1	33.9	31.03
SPP South - Energy Price - 1H2023	2079	9/9/2028	9/9/2028	31.03	31.03	31.03	31.03	33.9	33.9	45.45	42.98	42.58	45.45	45.45	42.58	45.45	45.45	45.45	45.49	46.69	51.42	51.42	51.42	47.52	46.83	33.9	31.03
SPP South - Energy Price - 1H2023	2080	9/10/2028	9/10/2028	31.03	31.03	31.03	31.03	31.03	31.51	42.62	42.98	42.9	41.93	45.45	46.69	46.69	51.42	46.69	51.42	46.69	47.52	53.32	53.32	49.49	48.04	35.56	36.06
SPP South - Energy Price - 1H2023	2081	9/11/2028	9/11/2028	33.52	33.52	34.43	34.43	34.43	34.91	41.41	41.41	41.41	41.26	41.39	40.99	44.36	44.31	44.36	45.87	44.05	44.36	45.11	45.68	43.03	43.58	35.31	34.43
SPP South - Energy Price - 1H2023	2082	9/12/2028	9/12/2028	32.71	32.71	32.71	33.6	33.6	33.6	40.57	40.57	39.51	38.59	37.13	40.03	40.16	40.56	40.57	38.1	40.16	42.41	42.61	40.57	38.1	36.7	29.97	29.97
SPP South - Energy Price - 1H2023	2083	9/13/2028	9/13/2028	30.22	30.22	30.22	30.22	30.22	30.7	39.03	38.44	38.1	38.1	36.95	35.91	35.36	35.36	35.36	35.36	38.1	40.45	44.44	40.45	40.86	38.82	33.88	33.71
SPP South - Energy Price - 1H2023	2084	9/14/2028	9/14/2028	33.71	32.9	33.71	33.71	33.71	32.24	39.85	38.1	36.02	37.9	37.66	36.02	36.02	36.02	36.02	36.02	38.1	43.3	45.41	45.95	41.77	41.62	36.35	35.87
SPP South - Energy Price - 1H2023	2085	9/15/2028	9/15/2028	33.61	33.62	32.73	33.62	34.58	33.95	40.18	40.18	40.18	38.26	38.1	35.18	38.1	38.1	35.13	38.1	38.1	39.51	38.25	38.1	38.1	35.23	29.98	29.98
SPP South - Energy Price - 1H2023	2086	9/16/2028	9/16/2028	29.98	29.98	29.98	29.98	29.98	29.98	40.2	12.38	5.6	11.03	7.05	12.67	15.48	30.07	35.29	23.67	40.2	40.2	40.2	43.88	43.88	40.2	29.98	29.98
SPP South - Energy Price - 1H2023	2087	9/17/2028	9/17/2028	29.98	29.98	29.98	29.98	29.98	29.61	40.2	5.83	5.6	2.19	11.51	12.67	17.48	17.53	20.09	40.2	40.2	40.2	43.88	40.2	40.2	40.2	24.15	16.93
SPP South - Energy Price - 1H2023	2088	9/18/2028	9/18/2028	15.95	15.07	14.3	13.58	13.5	26.15	23.9	31.25	31.25	32.72	35.84	35.84	35.84	36.11	36.11	38.1	37.08	39.43	39.68	39.43	36.11	35.84	29.93	28.47
SPP South - Energy Price - 1H2023	2089	9/19/2028	9/19/2028	32.51	32.51	31.73	32.51	32.51	33.39	39.96	39.52	39.96	39.96	39.96	40.35	41.35	42.82	41.84	44.59	44.59	44.59	43.61	41.84	40.39	39.96	32.51	32.51
SPP South - Energy Price - 1H2023	2090	9/20/2028	9/20/2028	30.71	28.17	30.71	28.34	30.71	30.71	38.13	38.13	38.1	38.1	38.13	38.13	38.46	39.58	38.46	38.53	38.46	42.29	42.29	41.57	38.46	38.13	30.71	30.71
SPP South - Energy Price - 1H2023	2091	9/21/2028	9/21/2028	29.87	32.56	30.35	32.56	32.56	32.56	40.01	37.89	38.1	38.77	40.01	40.01	40.01	40.4	40.23	40.41	40.29	44.65	44.65	44.65	41.71	40.01	33.44	33.34
SPP South - Energy Price - 1H2023	2092	9/22/2028	9/22/2028	30.65	30.65	30.65	30.65	31.46	31.46	38.4	38.06	38.06	36.48	35.08	33.7	33.7	34.29	34.55	35.32	33.38	39.82	40.27	38.4	35.87	35.59	28.11	28.11
SPP South - Energy Price - 1H2023	2093	9/23/2028	9/23/2028	28.11	28.11	28.11	28.11	28.11	28.11	37.69	21.3	10.83	10.03	11.51	12.67	12.67	17.53	20.09	37.69	23.08	37.69	37.69	37.69	37.69	37.69	28.11	16.54
SPP South - Energy Price - 1H2023	2094	9/24/2028	9/24/2028	15.81	13.44	11.35	12.39	13.01	12.79	14.65	3.62	0	0	0	0	0	18.99	16.4	23.28	22.47	37.69	37.69	37.69	37.69	37.69	13.27	12.47
SPP South - Energy Price - 1H2023	2095	9/25/2028	9/25/2028	2.96	2.88	13.3	2.69	2.96	13.55	16.79	12.34	12.11	12.64	12.57	33.11	33.11	33.11	33.11	33.74	37.92	38.1	39.77	39.42	38.25	38.1	30.46	27.99
SPP South - Energy Price - 1H2023	2096	9/26/2028	9/26/2028	29.91	29.91	29.91	29.91	29.91	29.91	35.46	35.05	35.05	35.05	35.05	38.1	35.05	35.05	40.09	38.1	40.1	42.58	43.81	41.72	41.71	40.49	33.53	33.53
SPP South - Energy Price - 1H2023	2097	9/27/2028	9/27/2028	32.77	31.48	30.02	30.02	30.88	33.66	40.08	40.23	40.3	41.85	41.74	41.98	41.72	41.74	42.05	41.98	42.16	42.85	42.15	41.98	40.63	40.63	33.66	32.77
SPP South - Energy Price - 1H2023	2098	9/28/2028	9/28/2028	33.15	31.19	30.37	33.15	33.15	35.17	40.61	40.62	38.1	35.51	35.51	36.43	35.51	38.1	38.1	38.1	38.95	41.03	40.61	40.01	37.94	35.51	30.37	30.37
SPP South - Energy Price - 1H2023	2099	9/29/2028	9/29/2028	30.47	30.47	30.47	30.47	30.47	30.47	36.25	36.08	35.62	35.62	35.62	35.62	35.62	39.32	36.52	35.62	38.1	40.01	39.78	39.8	37.96	35.62	32.74	30.47
SPP South - Energy Price - 1H2023	2100	9/30/2028	9/30/2028	30.47	30.47	30.47	30.47	30.47	30.47	40.85	40.85	37.38	37.49	13.79	15.36	8.1	8.35	6.87	15.36	22.47	29.51	40.85	40.85	22.41	22.41	16.71	16.13
SPP South - Energy Price - 1H2023	2101	10/1/2028	10/1/2028	11.97	10.84	19.13	19.13	19.13	19.13	27.56	19.56	9.75	8.66	9.41	10.48	12.2	12.95	15.31	15.89	27.56	30.59	31.64	30.59	30.59	27.56	20.05	21.24
SPP South - Energy Price - 1H2023	2102	10/2/2028	10/2/2028	20.56	19.46	19.46	19.46	19.46	19.46	32.34	30.37	30.02	30.02	30.02	30.02	30.02	32.34	32.34	32.48	35.22	35.22	35.6	35.22	35.22	32.34	19.46	19.46
SPP South - Energy Price - 1H2023	2103	10/3/2028	10/3/2028	20.48	19.45	19.45	18.47	19.45	18.47	32.73	31.77	29.97	28.68	28.68	28.68	29.4	29.56	31.41	31.83	31.48	32.16	28.68	28.68	28.68	28.68	18.47	18.47
SPP South - Energy Price - 1H2023	2104	10/4/2028	10/4/2028	18.29	18.29	18.29	18.29	18.29	18.29	28.44	28.44	28.44	28.21	28.44	28.44	28.44	28.44	28.44	28.44	30.11	31.69	31.65	29.1	29.25	32.34	20.28	20.28
SPP South - Energy Price - 1H2023	2105	10/5/2028	10/5/2028	19.04	19.04	11.35	19.04	9.51	19.04	29.45	29.45	7.86	9.46	8.68	29.45	29.45	29.45	29.45	29.45	32.34	31.25	34.93	33.8	32.34	32.34	21.06	19.97
SPP South - Energy Price - 1H2023	2106	10/6/2028	10/6/2028	19.97	19.97	19.16	19.16	19.97	20.08	32.34	30.85	29.75	30.86	30.78	32.78	33.69	34.76	34.23	33.69	34.19	35.12	35.12	35.12	35.12	34.05	21.84	21.45
SPP South - Energy Price - 1H2023	2107	10/7/2028	10/7/2028	21.26	21.26	21.26	21.26	21.26	21.88	31.55	30.91	30.63	31.22	30.76	31.47	31.47	30.9	30.63	29.45	32.94	34.16	34.57	34.79	30.63	29.37	19.92	19.16
SPP South - Energy Price - 1H2023	2108	10/8/2028	10/8/2028	19.16	19.16	20.06	21.26	21.26	21.26	27.6	27.6	30.63	29.21	29.83	28.46	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	19.16	19.16
SPP South - Energy Price - 1H2023	2109	10/9/2028	10/9/2028	21.26	21.26	21.26	21.26	21.44	22.28	35.6	35.19	34.33	35.56	34.33	32.72	34.33	32.34	34.33	35.6	39.53	40.08	39.53	35.7	35.6	32.34	23.5	24.35
SPP South - Energy Price - 1H2023	2110	10/10/2028	10/10/2028	23.75	21.66	23.15	22.99	24.35	24.35	35.42	35.24	34.88	34.88	34.88	33.54	31.36	31.36	31.36	31.36	31.36	33.27	34.58	34.09	33.13	32.34	20.49	19
SPP South - Energy Price - 1H2023	2111	10/11/2028	10/11/2028	18.59	18.59	20.59	18.59	19.36	21.18	31.5	32.34	32.34	34.22	33.54	34.22	32.34	32.34	32.34	32.34	33.36	34.72	36.44	35.58	35.72	35.9	24.35	23.99
SPP South - Energy Price - 1H2023	2112	10/12/2028	10/12/2028	23.99	24.35	24.35	24.35	24.35	24.41	34.88	34.62	32.38	31.06	31.06	31.06	32.34	31.06	31.06	31.06	31.06	39.77	38.47	39.77	39.77	35.84	22.66	21.4
SPP South - Energy Price - 1H2023	2113	10/13/2028	10/13/2028	20.71	20.71	21.58	21.22	20.78	23.68	35.31	33.58	30.9	30.98	32.34	32.34	30.9	31.1	32.34	32.34	33.54	35.12	38.62	38.62	38.62	32.34	23.34	20.71
SPP South - Energy Price - 1H2023	2114	10/14/2028	10/14/2028	18.19	20.43	19.06	20.71	20.71	22.21	31.94	29.84	26.21	26.85	29.84	29.84	29.84	29.84	29.84	29.84	29.84	35.08	35.08	35.08	32.43	29.84	20.71	20.71
SPP South - Energy Price - 1H2023	2115	10/15/2028	10/15/2028	20.71	20.71	20.71	20.71	20.71	20.71	34.36	32.43	26.21	26.21	26.21	28.49	26.21	26.21	26.21	28.49	26.21	30.4	34.24	35.08	29.83	32.85	21.86	22.1
SPP South - Energy Price - 1H2023	2116	10/16/2028	10/16/2028	24.35	22.99	22.65	22.6	24.35	24.35	36.92	34.79	33.54	33.54	34.42	34.42	33.03	32.15	34.42	32.34	33.36	39.63	39.63	39.38	35.32	34.79	24.35	23.83
SPP South - Energy Price - 1H2023	2117	10/17/2028	10/17/2028	23.8	23.67	23.67	23.54	23.67	23.79	38.11	35.41	33.94	32.65	32.49	31.26	31.43	32.15	31.41	31.83	32.34	34.89	37.08	36.14	33.82	32.34	21.52	18.89
SPP South - Energy Price - 1H2023	2118	10/18/2028	10/18/2028	19.24	19.24	21.24	19.24	19.24	21.87	35.25	31.69	31.68	31.69	31.69	31.68	31.69	31.69	31.69	31.69	31.69	32.34	31.69	32.34	31.69	31.68	19.24	19.24
SPP South - Energy Price - 1H2023	2119	10/19/2028	10/19/2028	19.53	19.53	21.31	22.28	21.38	23.14	35.72	34.2	32.08	32.08	32.08	32.08	32.34	32.08	32.34	32.34	33.77	35.46	34.21	34.2	33.99	32.84	21.4	19.53
SPP South - Energy Price - 1H2023	2120	10/20/2028	10/20/2028	19.29	20.64	19.29	20.64	22	19.29	34.2	31.76	34	31.76	31.76	32.34	31.76	32.37	32.34	31.76	31.76	31.76	31.76	32.34	35.34	32.34	23.1	22.77
SPP South - Energy Price - 1H2023	2121	10/21/2028	10/21/2028	22.8	23.19	22.01	22.99	19.29	22.4	27.8	33.21	27.79	27.54	27.79	27.8	27.8	27.79	27.8	27.8	34.03	37.56	36.38	35.08	35.08	35.08	24.35	22.06
SPP South - Energy Price - 1H2023	2122	10/22/2028	10/22/2028	21.52	22.01	23.39	22.01	22.01	22.01	33.04	32.41	27.8	27.8	7.73	9.49	9.49	9.49	3.42	4.94	27.8	35.08	36.38	35.08	35.08	35.08	22.4	23.36
SPP South - Energy Price - 1H2023	2123	10/23/2028	10/23/2028	22.13	22.13	22.13	22.13	22.94	24.35	35.51	35.51	32.61	32.35	32.34	32.35	33.54	35.51	35.51	36.92	44.54	45.87	45.88	40.97	37.15	40.39	23.34	22.13
SPP South - Energy Price - 1H2023	2124	10/24/2028	10/24/2028	22.59	19.79	19.79	19.79	19.79	19.79	32.43	32.34	8.99	7.98	8.68	9.66	11.25	11.94	11.52	14.64	32.34	32.34	32.43	32.43	25.93	13.59	10.61	10.24
SPP South - Energy Price - 1H2023	2125	10/25/2028	10/25/2028	7.76	7.89	7.57	7.85	8.55	19.68	32.29	32.29	32.29	32.29	32.34	35.96	35.96	35.96	35.96	35.96	32.73	34.22	34.22	32.73	32.29	32.29	19.68	19.68
SPP South - Energy Price - 1H2023	2126	10/26/2028	10/26/2028	18.8	18.8	18.8	18.8	18.8	18.8	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	29.13	13.93	8.77	7.68
SPP South - Energy Price - 1H2023	2127	10/27/2028	10/27/2028	8.77	8.77	8.77	8.77	8.92	18.24	29.97	32.34	32.34	33.34	33.34	33.34	33.34	33.54	34.84	34.85	34.84	38.36	38.36	34.18	34.11	33.34	20.31	20.22
SPP South - Energy Price - 1H2023	2128	10/28/2028	10/28/2028	21.4	20.22	20.22	20.22	21.4	20.22	33.31	33.31	35.08	33.05	35.08	33.57	30.92	33.05	31.18	33.05	33.17	33.57	35.02	33.57	33.06	29.13	20.22	20.22
SPP South - Energy Price - 1H2023	2129	10/29/2028	10/29/2028	20.22	19.22	18.24	18.24	18.24	18.24	26.27	26.27	9.87	3.56	4.27	1.84	2	1.78	2.76	1.75	8.54	26.27	26.27	26.27	26.27	26.27	18.24	18.24
SPP South - Energy Price - 1H2023	2130	10/30/2028	10/30/2028	20.07	20.07	20.07	20.07	21.93	22.3	36.17	35.44	32.47	32.47	33.8	36.17	33.54	33.54	36.17	36.17	36.17	41.92	41.92	36.17	36.17	36.17	24.35	24.35
SPP South - Energy Price - 1H2023	2131	10/31/2028	10/31/2028	24.35	24.35	24.35	24.35	22.59	24.35	34.31	35.51	35.23	36.56	36.56	36.56	36.56	36.56	36.56	36.56	36.56	40.07	39.42	36.95	36.56	36.56	25.26	24.35
SPP South - Energy Price - 1H2023	2132	11/1/2028	11/1/2028	24.17	24.91	21.03	24.91	21.36	24.92	32.62	32.62	32.64	36.75	32.62	32.62	31.32	31.47	29.01	29.01	29.01	29.01	29.01	29.01	29.01	29.01	18.99	18.99
SPP South - Energy Price - 1H2023	2133	11/2/2028	11/2/2028	14.51	8.56	7.96	8.02	15.76	19.46	29.59	29.59	29.59	29.59	29.59	29.59	29.59	29.59	29.59	29.59	31.47	31.98	33.38	37.58	33.38	33.62	26.43	26.43
SPP South - Energy Price - 1H2023	2134	11/3/2028	11/3/2028	26.43	26.31	24.59	25.6	22.72	25.49	32.12	32.15	29.71	29.71	29.71	29.71	29.71	29.71	29.71	28.74	29.71	31.47	31.47	31.47	29.71	29.71	19.56	8.34
SPP South - Energy Price - 1H2023	2135	11/4/2028	11/4/2028	19.56	19.56	19.56	19.56	19.56	19.56	35.7	35.7	35.7	12.6	11.12	10.02	10.9	10.77	10.9	35.7	39.57	41.37	43.86	42.64	38.34	38.8	19.56	19.56
SPP South - Energy Price - 1H2023	2136	11/5/2028	11/5/2028	21.26	19.56	19.56	19.56	21.26	21.68	39.56	39.57	35.7	35.7	35.7	35.7	31.88	10.77	10.9	10.68	35.7	35.7	35.7	35.7	35.7	32.84	19.56	8.34
SPP South - Energy Price - 1H2023	2137	11/6/2028	11/6/2028	8.23	7.89	8.23	8.23	8.94	11.06	11.74	10.19	8.86	8.22	3.83	1.65	1.8	1.6	2.48	6.97	7.66	31.48	31.16	31.16	16.69	16.69	6.87	7.32
SPP South - Energy Price - 1H2023	2138	11/7/2028	11/7/2028	7.15	1.69	1.28	8.02	9.29	22.68	38.36	38.94	36.44	34.83	34.83	34.83	34.83	33.53	34.83	34.83	34.83	36.44	36.44	36.44	34.83	34.83	25.22	22.68
SPP South - Energy Price - 1H2023	2139	11/8/2028	11/8/2028	26.43	26.43	26.43	26.43	26.43	26.43	46.22	49.52	49.82	46.22	46.84	43.51	37.8	37.8	37.8	40.09	42.64	49.7	49.82	46.35	37.8	40.09	28.55	29
SPP South - Energy Price - 1H2023	2140	11/9/2028	11/9/2028	28.11	26.43	26.43	26.43	26.43	26.43	36.79	36.79	35.14	35.14	9.99	6.54	6.54	7.03	7.11	7.11	28.12	32.64	35.14	31.47	31.47	31.47	22.93	21.72
SPP South - Energy Price - 1H2023	2141	11/10/2028	11/10/2028	18.4	18.4	18.4	18.4	20	20	31.53	31.53	31.53	10.41	7.25	6.54	6.54	7.03	24.95	30.62	31.53	32.73	32.73	31.53	31.53	31.53	20.96	20
SPP South - Energy Price - 1H2023	2142	11/11/2028	11/11/2028	20	20	20	16.53	20	20	38.25	36.5	26.14	21.65	21.65	23.53	9.91	10.77	9.91	10.68	11.74	9.27	11.76	10.55	10.67	6.83	1.28	1.43
SPP South - Energy Price - 1H2023	2143	11/12/2028	11/12/2028	1.48	1.69	1.28	1.45	1.56	1.88	3.35	3.16	3.85	8.8	9.78	2.53	2.75	3.8	3.8	10.91	36.5	36.5	36.5	33.63	36.5	36.5	20	20
SPP South - Energy Price - 1H2023	2144	11/13/2028	11/13/2028	6.91	6.91	6.91	6.91	18.45	18.45	27.62	27.62	27.62	12.47	27.62	27.62	7.11	27.62	27.62	27.62	27.62	30.58	27.62	27.62	27.62	27.62	18.45	18.45
SPP South - Energy Price - 1H2023	2145	11/14/2028	11/14/2028	21.12	21.34	23.45	23.45	23.45	23.45	34.29	34.29	31.54	31.47	32.64	34.29	34.29	32.64	34.29	34.29	34.29	34.29	34.29	34.13	34.21	31.47	21.39	23.45
SPP South - Energy Price - 1H2023	2146	11/15/2028	11/15/2028	22.32	22.32	22.89	22.32	22.32	22.38	32.89	35.94	35.94	35.94	35.94	35.24	35.94	35.94	33.43	35.94	35.94	36.36	36.36	36.36	36.36	36.36	26.43	24.81
SPP South - Energy Price - 1H2023	2147	11/16/2028	11/16/2028	24.67	24.67	22.19	22.19	22.19	22.95	32.19	32.19	32.19	32.19	7.25	6.54	7.11	7.03	7.11	7.11	32.19	33.01	35.77	35.42	34.05	32.19	24.67	24.67
SPP South - Energy Price - 1H2023	2148	11/17/2028	11/17/2028	24.54	23.88	23.88	23.88	24.54	24.54	34.81	35.69	34.81	34.81	34.81	34.24	34.81	34.73	31.47	31.47	34.81	35.19	35.19	34.48	32.32	31.86	21.97	23.88
SPP South - Energy Price - 1H2023	2149	11/18/2028	11/18/2028	23.88	23.88	23.88	24.54	24.54	24.54	48.25	48.25	44.79	44.79	44.79	44.79	44.39	44.39	44.79	44.79	44.79	50.04	47.4	46.19	46.32	48.02	26.4	26.43
SPP South - Energy Price - 1H2023	2150	11/19/2028	11/19/2028	26.43	26.43	26.43	24.54	23.88	23.88	43.59	45.83	44.84	44.79	43.59	43.59	39.24	39.24	39.24	39.24	40.35	44.79	43.59	39.24	39.24	39.24	21.5	23.88
SPP South - Energy Price - 1H2023	2151	11/20/2028	11/20/2028	24.65	24.65	24.65	24.65	26.8	27.47	39.19	39.7	39.7	39.19	39.19	39.19	39.19	39.7	39.7	39.7	40.44	45.9	45.9	41.69	45.9	40.44	28.24	28.24
SPP South - Energy Price - 1H2023	2152	11/21/2028	11/21/2028	27.68	26.97	26.92	26.92	27.41	28.42	40.76	41.06	40.63	41.93	41.46	40.2	40.93	39.44	39.43	39.36	39.45	42.93	42.34	41.46	40.39	40.2	27.68	26.92
SPP South - Energy Price - 1H2023	2153	11/22/2028	11/22/2028	26.52	26.52	26.52	26.52	26.52	26.52	38.51	40.25	39.99	41.08	40.05	39.24	38.35	38.51	38.15	38.03	38.8	38.89	41.44	38.35	38.03	38.51	26.65	26.52
SPP South - Energy Price - 1H2023	2154	11/23/2028	11/23/2028	26.52	26.43	26.43	26.43	26.43	26.43	33.54	33.57	33.5	33.5	33.5	32.39	33.5	32.64	31.47	33.5	33.5	33.5	33.5	33.5	33.5	33.5	23.82	25.89
SPP South - Energy Price - 1H2023	2155	11/24/2028	11/24/2028	21.63	21.63	21.63	21.63	21.63	17.41	29.83	30.83	28.96	22.75	22.03	22.9	22.51	7.17	7.54	7.23	6.67	25.56	30.83	30.83	30.83	23.95	9.84	9.9
SPP South - Energy Price - 1H2023	2156	11/25/2028	11/25/2028	9.48	19.68	19.68	20.9	19.68	19.68	35.91	39.47	32.07	16.12	33.72	35.91	14.66	39.47	39.47	16.56	39.47	39.47	43.86	39.47	39.47	39.47	21.63	18.69
SPP South - Energy Price - 1H2023	2157	11/26/2028	11/26/2028	21.63	20.59	21.63	20.9	16.44	21.46	39.47	39.47	39.47	39.47	14.35	39.47	37.45	39.47	35.52	3.1	39.47	39.47	39.47	39.47	39.47	39.47	24.03	21.63

SPP South - Energy Price - 1H2023	2158	11/27/2028	11/27/2028	21.6	22.03	21.6	21.6	21.6	23.96	31.47	34.95	32.42	32.78	31.61	31.47	34.95	32.64	34.95	31.47	32.64	34.95	31.95	30.94	31.47	31.47	23.53	24
SPP South - Energy Price - 1H2023	2159	11/28/2028	11/28/2028	21.63	21.63	21.63	21.63	21.63	21.63	32.11	31.47	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	31.07	33.09	33.09	33.16	32.69	33.16	21.63	24.03
SPP South - Energy Price - 1H2023	2160	11/29/2028	11/29/2028	21.69	21.69	21.69	22.11	22.24	21.69	31.47	32.97	32.31	30.33	30.33	30.33	30.33	30.33	30.33	30.33	31.66	34.28	34.26	35.08	35.08	35.08	24.76	24.76
SPP South - Energy Price - 1H2023	2161	11/30/2028	11/30/2028	26.43	26.43	26.22	26.22	26.22	26.22	37.39	37.39	34.4	34.4	34.42	37.66	37.66	37.66	33.75	37.44	36.87	37.66	37.66	38.14	37.66	38.13	26.95	26.43
SPP South - Energy Price - 1H2023	2162	12/1/2028	12/1/2028	32.64	32.64	32.64	32.64	31.56	31.07	35.82	38.26	38.26	35.49	35.01	36.33	38.26	36.31	35.19	35.19	38.71	43.41	43.5	43.15	42.26	41.89	40.17	36.04
SPP South - Energy Price - 1H2023	2163	12/2/2028	12/2/2028	33.86	34.77	34.81	34.63	34.12	35.16	43.68	44.21	38.86	38.12	35.77	35.77	36.77	35.77	36.77	36.77	36.99	43.68	43.68	38.89	36.86	36.77	32.64	31.76
SPP South - Energy Price - 1H2023	2164	12/3/2028	12/3/2028	31.76	31.76	28.56	28.56	28.56	28.56	32.16	34.96	32.16	32.16	32.16	30.53	32.16	32.16	32.16	32.16	35.77	37.47	38.86	37.47	36.77	36.77	28.56	28.56
SPP South - Energy Price - 1H2023	2165	12/4/2028	12/4/2028	31.15	31.15	31.15	31.15	31.15	31.15	35.27	35.27	34.6	33.02	35.13	34.6	35.27	35.27	35.27	35.27	41.25	43.91	46.55	41.8	41.8	41.8	35.69	35.69
SPP South - Energy Price - 1H2023	2166	12/5/2028	12/5/2028	36.19	35.87	36.19	36.19	36.19	40.17	44.48	46.56	46.34	46.76	44.48	41.96	37.22	36.43	37.92	37.33	41.96	42.31	42.31	42.31	42.31	42.31	36.19	35.19
SPP South - Energy Price - 1H2023	2167	12/6/2028	12/6/2028	36.14	36.19	36.24	36.14	36.14	37.17	47.4	47.68	47.83	43.31	44.75	43.31	43.31	40.63	42.71	42.71	43.31	45.74	48.38	48.38	48.38	48.28	40.5	36.31
SPP South - Energy Price - 1H2023	2168	12/7/2028	12/7/2028	37.73	38.81	38.35	40.02	38.81	37.73	44.97	44.97	44.97	44.97	44.97	40.04	37.96	39.45	40.1	39.59	44.97	44.97	44.97	44.97	44.97	44.97	37.92	36.96
SPP South - Energy Price - 1H2023	2169	12/8/2028	12/8/2028	33.8	34.24	34.36	33.8	33.59	33.27	40.9	41.44	36.7	35.5	34.96	34.96	33.02	33.02	34.24	34.96	35.04	35.72	34.96	34.96	34.96	34.96	30.84	30.84
SPP South - Energy Price - 1H2023	2170	12/9/2028	12/9/2028	30.84	30.84	30.84	30.84	30.84	30.84	34.74	37.47	36.55	34.74	34.74	34.74	34.74	34.74	34.74	37.47	37.47	38.7	37.76	38.7	38.7	34.74	30.84	30.84
SPP South - Energy Price - 1H2023	2171	12/10/2028	12/10/2028	30.84	30.84	30.84	30.84	30.84	30.84	34.74	34.74	34.74	34.74	34.74	34.74	34.74	34.74	34.74	34.74	37.47	38.7	38.7	38.7	38.7	37.47	34.18	33.27
SPP South - Energy Price - 1H2023	2172	12/11/2028	12/11/2028	30.62	31.61	30.62	33.49	33.27	33.27	37.68	38.81	36.47	34.93	34.93	34.93	34.93	34.93	34.49	34.93	34.93	36.02	35.89	34.93	34.93	34.93	30.62	30.62
SPP South - Energy Price - 1H2023	2173	12/12/2028	12/12/2028	29.97	29.97	29.97	28.3	29.97	29.97	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	36.38	39.89	40.39	39.89	39.89	33.36	33.36
SPP South - Energy Price - 1H2023	2174	12/13/2028	12/13/2028	32.61	33.08	33.13	32.94	32.73	32.61	39.12	36.52	35.74	34.12	33.6	34.24	33.6	33.85	33.89	33.65	34.69	39.26	42.34	41.5	42.1	39.89	34.5	32.61
SPP South - Energy Price - 1H2023	2175	12/14/2028	12/14/2028	31.1	31.69	30.55	27.91	27.91	27.91	32.19	33.02	32.19	32.19	32.19	32.19	32.19	32.19	32.19	32.19	32.19	33.05	33.02	33.7	32.19	33.25	31.02	31.06
SPP South - Energy Price - 1H2023	2176	12/15/2028	12/15/2028	29.09	29.09	29.09	29.09	29.09	29.09	34.24	35.9	35.53	35.9	35.53	35.53	35.53	33.03	33.02	35.53	35.9	39.08	36.71	39.18	36.25	36.25	34.5	34.14
SPP South - Energy Price - 1H2023	2177	12/16/2028	12/16/2028	33.86	33.27	33.27	33.27	33.01	32.77	37.47	37.73	37.47	39.16	38.33	37.26	36.74	36.74	37.18	38.12	39.86	41.22	41.16	40.12	39.9	38.05	34.32	33.43
SPP South - Energy Price - 1H2023	2178	12/17/2028	12/17/2028	32.74	32.21	31.8	29.88	32.38	30.94	36.99	37.47	37.47	39.35	38.04	38.62	36.63	36.2	36.57	35.5	37.47	39.86	39.86	39.86	39.14	39.19	34.5	34.14
SPP South - Energy Price - 1H2023	2179	12/18/2028	12/18/2028	33.86	34.25	33.98	33.79	33.27	33.27	36.45	37.74	38.69	36.19	36.18	34.24	33.02	31.9	33.02	32.24	34.72	36.18	36.26	36.18	36.18	38.37	34.78	33.27
SPP South - Energy Price - 1H2023	2180	12/19/2028	12/19/2028	30.43	30.43	30.43	29.62	26.67	26.67	30.93	30.93	30.93	30.93	30.93	25.82	7.81	7.53	7.91	30.88	30.93	31.73	32.8	34.58	32.46	33.02	29.62	30.37
SPP South - Energy Price - 1H2023	2181	12/20/2028	12/20/2028	30.08	31.77	28.78	28.78	28.78	29.73	34.24	35.61	34.45	34.45	34.24	34.24	33.02	31.02	31.02	29.52	31.17	33.02	33.42	34.45	33.53	34.45	31.08	28.78
SPP South - Energy Price - 1H2023	2182	12/21/2028	12/21/2028	32.86	30.19	31.08	30.19	32.38	31.54	35.84	36.22	36.22	33.54	32.62	30.73	30.73	30.73	30.73	30.73	31.1	34.24	32.49	31.04	32.26	33.31	29.09	26.47
SPP South - Energy Price - 1H2023	2183	12/22/2028	12/22/2028	26.47	26.34	26.47	26.34	26.34	29.24	33.02	33.12	35.69	35.46	33.02	33.02	33.02	33.02	33.02	33.02	33.02	33.83	33.02	35.69	34.69	33.53	30.04	30.04
SPP South - Energy Price - 1H2023	2184	12/23/2028	12/23/2028	30.04	30.04	30.04	30.04	30.52	30.97	37.47	37.73	36.6	35.24	32.93	32.93	29.95	29.66	29.66	29.66	31.76	33.83	34.13	31.39	33.83	33.83	30.04	29.24
SPP South - Energy Price - 1H2023	2185	12/24/2028	12/24/2028	29.24	29.24	29.24	29.24	29.47	28.85	33.01	33.83	32.93	32.93	32.34	32.02	31.39	31.59	32.18	29.66	32.93	37.47	37.47	37.47	37.47	37.47	34.5	33.27
SPP South - Energy Price - 1H2023	2186	12/25/2028	12/25/2028	26.34	26.34	26.34	26.34	26.34	26.34	34.69	34.98	34.96	34.96	31.78	30.6	34.69	31.39	34.55	33.02	35.27	36.06	37.11	36.06	35.69	34.35	30.04	29.24
SPP South - Energy Price - 1H2023	2187	12/26/2028	12/26/2028	30.75	30.75	30.75	30.75	31.6	31.6	37.23	37.65	37.65	38.17	38.08	37.82	37.23	37.23	37.22	37.23	34.11	37.21	37.23	37.22	34.78	34.01	28.29	30.75
SPP South - Energy Price - 1H2023	2188	12/27/2028	12/27/2028	24.37	24.37	24.37	24.37	24.37	27	33.02	31.09	31.86	30.08	28.61	28.61	28.61	28.61	28.61	28.61	33.02	33.41	33.19	33.02	33.41	33.02	27.72	27
SPP South - Energy Price - 1H2023	2189	12/28/2028	12/28/2028	30.41	30.41	30.41	33.27	33.87	33.87	35.18	36.43	35.21	34.52	34.52	34.88	34.52	34.81	35.75	35.65	40.39	40.92	44.19	43.81	40.92	40.39	33.87	33.87
SPP South - Energy Price - 1H2023	2190	12/29/2028	12/29/2028	33.27	33.27	33.27	33.27	33.27	32.74	39.25	39.25	39.25	35.16	33.52	33.52	33.52	33.52	34.83	36.06	36.06	39.25	39.25	37.43	33.52	33.52	29.42	29.42
SPP South - Energy Price - 1H2023	2191	12/30/2028	12/30/2028	29.42	29.42	29.42	29.42	29.42	29.42	33.14	33.14	36.88	36.34	36.34	33.14	33.14	33.46	36.34	36.34	36.34	36.88	36.88	36.88	36.34	33.14	29.42	29.42
SPP South - Energy Price - 1H2023	2192	12/31/2028	12/31/2028	29.42	29.42	29.42	29.42	29.42	29.42	33.13	33.14	33.14	33.13	11.04	9.88	9.04	8.44	7.97	10.13	12.66	33.14	33.14	33.14	33.14	33.14	29.42	29.42
SPP South - Energy Price - 1H2023	2193	1/1/2029	1/1/2029	30.15	30.15	30.15	30.15	30.15	30.15	35.1	35.11	35.11	35.11	35.11	35.11	8.07	7.54	7.12	7.24	6.96	34.49	35.11	35.11	35.1	35.11	30.15	30.15
SPP South - Energy Price - 1H2023	2194	1/2/2029	1/2/2029	28.41	28.41	28.41	28.41	28.41	28.41	39.04	39.04	34.49	33.31	33.31	33.31	33.31	33.31	33.31	33.31	35.67	39.04	39.04	39.04	39.04	39.04	32.46	31.59
SPP South - Energy Price - 1H2023	2195	1/3/2029	1/3/2029	30.51	30.51	30.51	30.51	30.51	30.51	35.1	36.56	32.33	32.33	35.1	32.33	32.51	33.03	32.33	35.22	35.99	37.83	37.92	36.54	36.54	35.1	30.51	30.51
SPP South - Energy Price - 1H2023	2196	1/4/2029	1/4/2029	30.21	27.2	27.2	27.2	27.2	27.2	34.83	36.6	32.06	32.06	32.06	32.06	32.23	32.75	32.06	32.06	32.36	37.61	37.61	37.66	37.61	37.61	30.21	30.21
SPP South - Energy Price - 1H2023	2197	1/5/2029	1/5/2029	27.71	28.45	28.45	28.45	28.45	28.45	35	36.01	36.4	35.33	35.33	35	35	35	34.49	34.49	34.49	35	35	35	34.81	34.6	28.45	25
SPP South - Energy Price - 1H2023	2198	1/6/2029	1/6/2029	25	27.71	27.71	27.71	27.71	27.71	34.48	35.4	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	38.16	41.43	40.67	36.96	36.05	28.45	28.45
SPP South - Energy Price - 1H2023	2199	1/7/2029	1/7/2029	28.45	28.45	28.45	27.71	26.17	27.71	34.48	35.4	35.4	34.48	31.11	31.11	31.11	9.24	9.31	31.11	31.11	34.48	34.48	34.92	31.11	31.11	25	25
SPP South - Energy Price - 1H2023	2200	1/8/2029	1/8/2029	31.67	31.67	28.48	31.67	31.67	31.67	36.62	39.13	39.3	37.94	39.13	39.13	39.12	37.82	36.55	36.17	39.12	39.58	42.62	42.61	39.59	39.3	33.96	33.96
SPP South - Energy Price - 1H2023	2201	1/9/2029	1/9/2029	34.76	34.76	34.76	34.76	33.96	35.74	42.9	43.13	44.34	45	46.47	47.64	47.74	46.32	47.74	46.32	42.35	42.35	42.35	42.34	36.83	36.2	31.21	31.21
SPP South - Energy Price - 1H2023	2202	1/10/2029	1/10/2029	30.38	31.21	30.38	31.21	33.82	33.82	39.9	40.8	41.37	37.76	41.37	36.66	36.71	36.71	36.71	36.7	38.44	41.37	41.89	41.37	41.37	40.72	33.82	32.87
SPP South - Energy Price - 1H2023	2203	1/11/2029	1/11/2029	32.87	32.87	32.87	32.87	32.87	31.72	39.95	40.38	40.38	38.73	35.66	34.53	36.35	37.1	37.75	36.35	37.88	40.87	41.69	40.87	40.38	38	32.87	32.87
SPP South - Energy Price - 1H2023	2204	1/12/2029	1/12/2029	32.87	31.59	30.28	32.04	31.43	32.87	41.11	41.11	41.63	41.12	41.63	41.63	41.11	36.65	36.34	36.15	35.86	38.05	39.71	37.92	35.12	35.12	30.17	30.17
SPP South - Energy Price - 1H2023	2205	1/13/2029	1/13/2029	30.17	30.17	30.17	30.17	30.17	30.17	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	41.79	41.79	37.54	41.79	33.58	33.58
SPP South - Energy Price - 1H2023	2206	1/14/2029	1/14/2029	33.58	33.58	33.58	33.58	33.58	33.58	41.79	41.79	37.54	37.54	37.54	37.54	37.54	37.54	37.54	37.54	41.79	41.79	42.65	42.96	42.25	41.79	33.58	30.17
SPP South - Energy Price - 1H2023	2207	1/15/2029	1/15/2029	34.35	34.35	34.35	34.35	35.2	38.45	49.44	54.44	49.44	41.46	41.46	38.43	38.43	38.43	34.49	34.67	36.24	36.69	38.43	38.43	38.43	38.43	30.02	30.02
SPP South - Energy Price - 1H2023	2208	1/16/2029	1/16/2029	34.62	34.62	34.62	34.62	34.62	34.62	43.24	43.24	43.24	43.24	43.24	38.23	35.76	38.21	38.23	36.11	43.24	43.24	43.24	43.24	47.06	47.06	39.75	39.75
SPP South - Energy Price - 1H2023	2209	1/17/2029	1/17/2029	41.8	41.8	41.8	38.67	36.36	41.57	45.07	49.19	45.07	45.07	36.96	34.49	34.49	32.66	31.81	34.49	34.49	45.07	45.07	45.07	45.07	45.07	36.36	35.45
SPP South - Energy Price - 1H2023	2210	1/18/2029	1/18/2029	32.61	32.61	32.61	32.61	32.61	32.61	38.55	42.37	41.14	41.14	41.14	41.14	41.14	41.14	41.14	34.49	41.14	41.14	44.61	44.07	41.14	41.14	32.61	32.61
SPP South - Energy Price - 1H2023	2211	1/19/2029	1/19/2029	32.38	31.33	19.24	13.37	13.46	32.38	35.76	35.76	33.09	10.64	8.9	8.82	8.07	6.68	7.12	7.24	6.96	44.33	52.62	50.19	53.27	48.55	37.12	37.12
SPP South - Energy Price - 1H2023	2212	1/20/2029	1/20/2029	35.2	34.47	37.12	37.12	35.2	37.12	46.19	46.19	42.25	42.25	40.29	40.29	40.29	11.42	10.82	8.87	42.25	42.25	47.72	46.19	46.19	46.19	37.12	33.96
SPP South - Energy Price - 1H2023	2213	1/21/2029	1/21/2029	34.15	35.2	35.2	37.12	37.12	37.12	46.19	46.19	46.19	43.81	42.25	40.29	43.81	43.81	40.29	39.58	37.73	46.19	46.19	46.19	43.81	42.25	33.96	33.96
SPP South - Energy Price - 1H2023	2214	1/22/2029	1/22/2029	31.76	31.76	31.76	31.76	31.59	28.63	38.77	38.77	36.12	36.12	36.12	36.12	35.76	35.76	36.12	36.14	36.25	38.77	38.77	38.77	38.76	37.57	29.53	30.48
SPP South - Energy Price - 1H2023	2215	1/23/2029	1/23/2029	28.01	27.09	28.71	30.48	30.91	30.91	37.55	39.12	39.87	37.88	37.88	37.55	35.51	35.35	34.7	35.35	35.35	37.55	36.54	35.35	35.35	35.35	30.91	30.58
SPP South - Energy Price - 1H2023	2216	1/24/2029	1/24/2029	27.67	28.97	29.36	31	33.65	33.96	37.16	37.74	38.79	36.82	35.87	37.59	35.87	35.87	34.49	35.87	35.39	38.9	42.59	41.61	40.31	45.24	40.78	35.23
SPP South - Energy Price - 1H2023	2217	1/25/2029	1/25/2029	38.36	37.71	42.64	42.64	38.05	40.93	50.35	51.6	50.5	46.28	39.34	39.34	39.34	39.34	39.34	39.34	39.34	46.84	49.81	50.38	50.15	49.32	41.6	39.33
SPP South - Energy Price - 1H2023	2218	1/26/2029	1/26/2029	41.8	40.94	40.51	39.1	40.59	41.45	50.42	56.75	46.42	44.08	40.68	42.37	40.68	40.68	40.68	38.64	33.57	42.05	43.34	40.68	40.68	42.05	36.83	32.17
SPP South - Energy Price - 1H2023	2219	1/27/2029	1/27/2029	32.17	32.17	33.96	36.11	36.18	36.11	42.25	40.03	42.34	40.03	40.05	40.03	8.29	8.2	8.12	8.12	7.81	40.03	43.91	42.25	42.25	42.25	36.87	36.72
SPP South - Energy Price - 1H2023	2220	1/28/2029	1/28/2029	36.87	39.42	36.87	39.49	39.85	36.87	49.15	50.94	54.21	53.44	49.41	45.93	45.55	42.25	42.25	42.25	42.25	42.25	44.83	42.25	42.25	42.25	32.17	32.17
SPP South - Energy Price - 1H2023	2221	1/29/2029	1/29/2029	32.85	32.85	32.23	32.85	32.85	32.85	39.37	39.37	38.05	34.49	29.56	6.94	6.77	28.84	6.59	1.38	4.11	24.67	29.35	30.87	32.73	34.49	28.74	11.37
SPP South - Energy Price - 1H2023	2222	1/30/2029	1/30/2029	10.48	27.96	27.96	27.96	27.96	27.96	38.54	38.54	38.54	37.9	37.9	37.9	35.76	34.49	32.01	34.49	34.49	38.45	37.4	40.49	38.94	38.54	31.19	31.26
SPP South - Energy Price - 1H2023	2223	1/31/2029	1/31/2029	30.8	31.17	31.59	31.19	31.26	31.31	38.61	48.23	40.64	41.1	39.62	38.61	38.61	38.61	38.61	38.25	38.25	39.25	44.87	49.24	49.09	49.08	38.98	37.51
SPP South - Energy Price - 1H2023	2224	2/1/2029	2/1/2029	25.17	24.49	24.49	24.49	22.01	24.49	35.8	36.35	36.9	37.61	37.38	37.27	34.72	34.72	34.72	34.72	34.72	37.71	36.42	36.42	37.61	39.91	25.18	25.21
SPP South - Energy Price - 1H2023	2225	2/2/2029	2/2/2029	25.25	24.33	24.33	25.01	25.01	25.01	44.95	45.69	40.17	40.17	40.17	39.69	38.33	36.13	35.8	34.53	34.53	39.69	39.69	40.17	40.17	40.17	26.65	25.21
SPP South - Energy Price - 1H2023	2226	2/3/2029	2/3/2029	25.25	24.33	24.33	24.33	22.36	23.24	38.39	38.39	38.39	33.58	33.58	33.58	33.65	33.58	33.58	33.58	33.57	33.58	37.35	37.35	36.5	33.58	21.87	11.87
SPP South - Energy Price - 1H2023	2227	2/4/2029	2/4/2029	21.87	7.82	21.87	21.87	21.87	21.87	33.58	37.35	37.35	37.35	37.35	37.54	37.35	33.58	33.58	33.6	37.35	37.35	39.08	40.11	38.39	37.35	21.87	21.87
SPP South - Energy Price - 1H2023	2228	2/5/2029	2/5/2029	22.66	22.66	22.66	22.66	22.66	24.28	37.79	42.2	37.79	36.7	35.78	33.61	32.5	32.5	32.5	32.5	32.5	35.81	37.79	37.79	37.79	36.77	23.28	22.95
SPP South - Energy Price - 1H2023	2229	2/6/2029	2/6/2029	22.58	22.14	22.14	22.31	22.5	23.19	37.27	37.67	36.18	32.4	33.17	33.17	32.4	9.11	6.59	6.59	6.34	32.4	34.89	32.45	33.87	32.4	20.33	20.33
SPP South - Energy Price - 1H2023	2230	2/7/2029	2/7/2029	20.97	20.85	20.97	7.88	12.23	20.97	33.29	34.33	33.29	8.32	1.21	1.29	1.28	1.26	1.2	1.37	1.26	5.85	34.27	36.33	37.05	38.28	23.95	23.95
SPP South - Energy Price - 1H2023	2231	2/8/2029	2/8/2029	23.21	22.72	21.95	23.85	23.85	23.85	38.15	38.15	33.17	33.98	33.92	33.17	33.17	33.17	33.17	33.17	33.17	33.17	35.67	36.24	35.62	34.11	20.89	20.89
SPP South - Energy Price - 1H2023	2232	2/9/2029	2/9/2029	20.13	20.13	20.13	20.13	20.13	22.35	34.32	36.35	33.33	32.13	32.13	32.13	32.13	29.56	32.13	29.56	28.07	32.13	34.46	32.79	32.13	32.13	20.13	20.13
SPP South - Energy Price - 1H2023	2233	2/10/2029	2/10/2029	20.13	20.13	20.13	20.13	20.89	20.71	34.32	38.15	34.32	33.59	31.2	31.64	30.9	30.9	30.9	30.9	30.9	30.9	30.44	30.9	30.9	30.9	20.13	20.13
SPP South - Energy Price - 1H2023	2234	2/11/2029	2/11/2029	20.13	20.13	20.13	20.13	20.13	20.13	30.9	35.25	32.53	33.59	30.9	30.9	30.9	30.9	30.9	30.9	30.9	31.73	34.32	35.25	37.61	37.06	22.97	22.96
SPP South - Energy Price - 1H2023	2235	2/12/2029	2/12/2029	25.46	26.39	25.46	25.46	26.39	26.39	42.59	42.6	43.16	43.16	43.16	42.78	42.59	41.17	41.79	40.26	40.85	42.6	42.59	42.6	42.59	40.67	25.46	23.72
SPP South - Energy Price - 1H2023	2236	2/13/2029	2/13/2029	23.68	23.68	23.68	23.68	23.68	25.46	39.84	40.96	39.3	37.01	37.01	32.85	32.55	34.04	1.2	26.67	34.27	35.97	37.01	37.87	37.01	37.01	25.28	23.68
SPP South - Energy Price - 1H2023	2237	2/14/2029	2/14/2029	30.96	29.27	29.27	26.93	26.39	29.42	47.01	47.01	38.85	36.26	47.01	38.71	36.46	33.55	32.6	34.27	34.27	41.46	47.01	47.01	47.01	47.01	28.96	28.18
SPP South - Energy Price - 1H2023	2238	2/15/2029	2/15/2029	24.92	24.92	24.92	24.92	24.92	24.92	38.71	38.71	35.53	37.89	37.05	28.43	34.17	28.64	37.79	37.98	37.64	38.71	40.46	40.95	41.49	40.25	26.39	25.46
SPP South - Energy Price - 1H2023	2239	2/16/2029	2/16/2029	25.46	25.46	24.33	25.46	25.46	25.46	41.59	39.59	38.31	37.6	35.53	29.1	9.68	6.65	6.59	6.59	28.13	32.3	36.19	36.19	36.19	37.29	23.67	23.43
SPP South - Energy Price - 1H2023	2240	2/17/2029	2/17/2029	23.36	23.09	23.09	23.09	23.09	23.09	36.28	39.08	37.85	36.05	35.44	35.44	35.44	31.07	35.44	35.44	35.44	35.75	37.68	37	38.52	36.95	24.07	23.64

SPP South - Energy Price - 1H2023	2241	2/18/2029	2/18/2029	23.42	23.24	23.09	23.09	23.09	23.09	36.98	38.6	37.93	35.79	35.44	35.74	35.44	7.59	5.01	7.51	1.44	35.44	35.44	35.44	35.44	35.44	23.09	23.53
SPP South - Energy Price - 1H2023	2242	2/19/2029	2/19/2029	22.9	23.44	23.27	23.44	23.44	23.44	38.46	38.9	38.46	38.46	38.46	38.46	38.46	38.46	37.61	37.49	38.46	38.9	42.26	41.22	38.9	38.46	24.87	23.59
SPP South - Energy Price - 1H2023	2243	2/20/2029	2/20/2029	25.46	24.84	25.46	24.84	24.84	25.46	40.39	40.89	37.65	35.81	36.08	35.23	34.27	35.23	32.45	30.14	34.27	33.33	35.23	35.23	34.27	35.23	22.32	22.32
SPP South - Energy Price - 1H2023	2244	2/21/2029	2/21/2029	20.8	20.8	20.8	20.8	20.8	20.8	38	38	34.93	33.14	33.14	33.14	29.48	30.43	29.39	26.48	30.49	33.14	33.14	33.14	33.14	33.14	20.79	20.79
SPP South - Energy Price - 1H2023	2245	2/22/2029	2/22/2029	21.78	21.78	21.78	21.78	21.78	21.78	35.31	34.49	34.49	34.49	34.49	34.49	34.27	34.49	34.49	34.49	34.49	34.49	36.14	37.73	39.55	39.55	25.46	24.23
SPP South - Energy Price - 1H2023	2246	2/23/2029	2/23/2029	24.13	23.62	23.62	23.62	23.62	24.94	39.16	42.25	39.16	39.16	39.16	38.71	38.01	37.79	37.65	35.61	35.39	36.35	38.71	38.71	35.53	35.42	23.01	23.13
SPP South - Energy Price - 1H2023	2247	2/24/2029	2/24/2029	21.25	21.25	21.25	21.25	21.25	21.91	34.64	32.62	32.62	8.71	4.71	1.19	1.37	1.24	1.42	1.38	1.34	8.51	32.62	32.62	32.62	32.62	21.25	21.25
SPP South - Energy Price - 1H2023	2248	2/25/2029	2/25/2029	21.25	21.25	21.25	21.25	21.25	21.25	34.39	33.13	32.62	8.71	7.85	1.19	1.37	1.24	8.67	9.01	8.84	8.51	8.16	10.28	8.29	9.08	6.78	6.38
SPP South - Energy Price - 1H2023	2249	2/26/2029	2/26/2029	17.02	17.48	19.29	6.71	17.69	21.01	30.16	28.22	1.15	23.02	1.13	29.66	28.6	35.93	35.93	34.27	33.73	35.93	35.93	35.93	35.93	35.93	22.55	22.55
SPP South - Energy Price - 1H2023	2250	2/27/2029	2/27/2029	20.59	8.24	7.9	7.97	20.59	6.45	31.54	33.24	21.5	7.64	6.88	1.05	7.07	7.41	7.6	7.91	7.46	7.46	33.24	33.24	33.24	33.24	22.71	22.26
SPP South - Energy Price - 1H2023	2251	2/28/2029	2/28/2029	23.17	22.73	22.73	23.43	22.73	25.3	37.57	37.75	36.5	36.17	36.17	36.48	36.53	36.26	36.17	36.17	36.88	37.44	41.55	41.55	38.87	38.27	25.46	25.3
SPP South - Energy Price - 1H2023	2252	3/1/2029	3/1/2029	22.91	22.42	22.23	22.23	22.23	22.42	39.35	42.78	42.38	40.16	39.07	38.39	38.39	37.9	38.36	7.42	7.61	32.15	38.95	39.68	39.51	43.56	24.81	24.81
SPP South - Energy Price - 1H2023	2253	3/2/2029	3/2/2029	20.3	20.3	20.3	20.3	20.86	20.86	36.68	36.68	33.85	32.35	32.35	32.35	32.35	31.1	28.03	28.03	32.15	32.35	33.43	33.85	32.35	32.35	18.26	18.26
SPP South - Energy Price - 1H2023	2254	3/3/2029	3/3/2029	18.26	18.26	18.26	18.26	18.26	18.26	31.49	31.49	31.49	31.49	27.2	5.57	31.49	31.49	31.49	31.49	31.49	35.02	35.99	35.99	35.99	35.02	18.26	18.26
SPP South - Energy Price - 1H2023	2255	3/4/2029	3/4/2029	18.26	18.26	19.85	18.26	19.85	20.3	35.02	35.02	31.49	31.49	31.49	31.49	31.49	31.49	8.27	31.49	31.49	35.02	35.02	34.23	32.81	34.23	18.26	18.26
SPP South - Energy Price - 1H2023	2256	3/5/2029	3/5/2029	17.03	17.03	17.03	17.03	17.03	17.03	30.65	30.48	30.48	30.48	30.48	30.48	30.46	30.48	30.48	30.48	29.89	29.34	30.48	30.48	30.48	30.48	17.03	17.03
SPP South - Energy Price - 1H2023	2257	3/6/2029	3/6/2029	17.6	17.6	17.6	17.6	17.6	19.56	35.55	31.42	31.62	31.36	32.05	31.4	32.52	31.36	32.39	32.15	31.74	32.15	32.44	33.69	33.22	32.15	19.56	19.56
SPP South - Energy Price - 1H2023	2258	3/7/2029	3/7/2029	20.01	20.01	18	18	18	18.56	32.76	31.96	31.96	31.96	31.96	32.37	32.11	31.96	31.96	32.15	32.15	33.33	36.24	36.24	36.24	34.67	20.3	20.01
SPP South - Energy Price - 1H2023	2259	3/8/2029	3/8/2029	20.83	19.18	20.22	20.83	20.83	21.62	37.49	37.47	34.55	35.27	33.05	33.05	33.76	33.88	34.1	33.65	33.68	33.05	33.24	33.05	33.05	33.05	18.72	18.72
SPP South - Energy Price - 1H2023	2260	3/9/2029	3/9/2029	17.96	17.96	17.96	17.96	17.96	17.96	31.89	31.89	32.53	31.89	31.93	34.43	33.45	33.25	33.12	34.43	34.43	35.01	33.87	33.66	32.37	31.89	17.96	17.96
SPP South - Energy Price - 1H2023	2261	3/10/2029	3/10/2029	6.96	6.12	8.87	9.43	5.8	5.47	9.58	9.02	8.56	8.31	1.23	1.14	1.3	1.18	1.35	1.32	8.43	8.12	30.97	30.97	30.97	30.97	17.96	17.96
SPP South - Energy Price - 1H2023	2262	3/11/2029	3/11/2029	17.96	16.52	6.66	11.47	18.37	17.96	34.43	34.43	37.29	36.18	34.43	34.43	30.97	30.97	34.43	30.97	30.97	30.97	30.97	31.58	30.97	30.97	17.96	17.96
SPP South - Energy Price - 1H2023	2263	3/12/2029	3/12/2029	18.83	18.83	18.83	18.83	18.83	18.83	33.64	32.43	34.69	34.46	33.39	33.74	32.43	33.56	34.29	33.74	32.43	32.43	32.43	32.43	32.15	9.54	6.44	5.75
SPP South - Energy Price - 1H2023	2264	3/13/2029	3/13/2029	6.07	6.05	5.88	5.85	5.8	18.46	31.87	28.3	8.92	7.16	6.46	6.49	6.63	6.96	7.13	7.42	7.27	7	27.3	31.87	31.87	31.87	18.46	18.46
SPP South - Energy Price - 1H2023	2265	3/14/2029	3/14/2029	18.38	18.38	6.71	18.38	10.16	18.38	31.75	31.75	31.75	7.16	6.46	0.98	1.12	6.96	6.46	5.99	7.61	7	31.75	33.24	33.7	33.26	19.87	18.45
SPP South - Energy Price - 1H2023	2266	3/15/2029	3/15/2029	20.54	21.62	20.56	21.31	21.71	21.62	40.65	42.57	43.64	43.08	40.65	40.24	38.02	37.76	37.65	37.08	37.23	36.2	37.46	36.76	36.25	34.83	20.54	20.54
SPP South - Energy Price - 1H2023	2267	3/16/2029	3/16/2029	19.26	19.26	18.28	19.26	19.26	19.26	32.89	32.15	1.08	1.01	1.06	0.98	0	1.06	20.01	26.82	32.89	32.89	33.37	33.57	33.83	32.89	19.26	19.26
SPP South - Energy Price - 1H2023	2268	3/17/2029	3/17/2029	19.26	19.73	19.76	21.44	21.44	21.44	36.99	36.99	33.68	33.22	33.22	33.22	33.22	33.22	33.22	30.26	33.22	30.31	33.22	33.22	33.22	33.22	19.26	19.26
SPP South - Energy Price - 1H2023	2269	3/18/2029	3/18/2029	19.26	19.26	20.04	20.94	20.94	19.76	36.99	34.52	33.45	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	19.26	19.26
SPP South - Energy Price - 1H2023	2270	3/19/2029	3/19/2029	20.03	21.3	20.03	20.03	20.03	22.31	46.08	35.96	34.9	36.07	34.23	37.04	35.53	35.08	34.74	35.33	36.52	38.63	38.81	39.75	39.33	37.52	21.63	21.63
SPP South - Energy Price - 1H2023	2271	3/20/2029	3/20/2029	19.12	19.74	19.12	19.12	19.12	21.28	34.27	33.91	32.67	32.67	32.67	32.67	34.07	34.88	34.77	34.8	34.54	33.66	35	36.07	35.2	35.22	21.28	21.28
SPP South - Energy Price - 1H2023	2272	3/21/2029	3/21/2029	20.16	20.16	20.16	18.93	19.34	19.72	36.46	32.32	33.32	33.32	33.32	33.05	31.17	31.17	31.17	31.17	31.17	31.17	32.15	32.15	31.17	31.17	18.13	18.96
SPP South - Energy Price - 1H2023	2273	3/22/2029	3/22/2029	17.08	18.96	18.96	18.96	18.96	18.96	30.19	32.15	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	31.95	34.64	33.33	33.33	18.96	17.08
SPP South - Energy Price - 1H2023	2274	3/23/2029	3/23/2029	15.91	15.91	16.22	15.91	15.91	15.91	28.42	28.42	28.42	28.42	28.42	28.42	28.42	28.42	28.42	29.98	31.26	32.15	32.15	32.62	32.62	32.62	17.9	17.64
SPP South - Energy Price - 1H2023	2275	3/24/2029	3/24/2029	15.95	16.73	17.64	17.64	17.64	17.64	31.24	30.42	30.42	30.42	30.42	30.42	30.42	30.42	30.42	30.88	31.24	31.24	34.41	31.37	31.24	30.42	17.64	17.64
SPP South - Energy Price - 1H2023	2276	3/25/2029	3/25/2029	17.64	17.36	15.91	16.15	17.64	17.64	30.42	30.42	27.45	10.73	1.8	1.71	1.39	1.33	1.44	1.33	1.36	1.43	11.66	11.84	13.85	13.73	7.75	6.87
SPP South - Energy Price - 1H2023	2277	3/26/2029	3/26/2029	7.89	1.17	6.91	6.96	7.19	6.96	23.63	9.98	1.48	1.34	1.51	29.1	29.1	29.1	29.1	29.1	29.2	29.38	33.4	33.4	33.4	32.15	18.14	18.14
SPP South - Energy Price - 1H2023	2278	3/27/2029	3/27/2029	18.15	17.59	17.49	17.49	19.43	19.43	33.79	32.35	30.81	30.81	30.81	9.28	1.2	14.53	9.78	10.46	30.81	30.81	30.81	30.81	30.81	30.81	17.49	17.49
SPP South - Energy Price - 1H2023	2279	3/28/2029	3/28/2029	17.68	17.68	17.68	16.95	17.68	17.68	32.08	31.1	31.1	25.82	27.98	9.28	9.63	9.79	9.78	11.52	11.52	15	31.1	31.1	30.7	11.84	7.75	6.91
SPP South - Energy Price - 1H2023	2280	3/29/2029	3/29/2029	7.75	7.59	6.91	6.96	17.79	17.79	31.28	31.28	31.28	31.28	31.28	29.02	31.28	31.28	31.28	10.46	31.28	31.28	31.28	31.28	11.94	11.84	7.75	6.91
SPP South - Energy Price - 1H2023	2281	3/30/2029	3/30/2029	7.89	7.59	6.91	7.75	7.19	16.74	29.68	29.68	29.68	29.68	29.68	29.68	9.63	14.81	17.41	18.93	10.82	16.48	29.68	29.68	30.06	30	16.74	16.74
SPP South - Energy Price - 1H2023	2282	3/31/2029	3/31/2029	16.74	16.74	18.57	16.74	17.97	17.32	28.87	28.87	28.87	28.87	32.04	28.87	28.87	11.36	12.74	12.13	23.76	28.87	28.87	28.87	28.87	28.87	16.74	16.74
SPP South - Energy Price - 1H2023	2283	4/1/2029	4/1/2029	8.65	8.65	8.65	8.65	8.65	8.65	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	21.95	21.95	21.95	22.53	21.95	21.95	9.42	9.42
SPP South - Energy Price - 1H2023	2284	4/2/2029	4/2/2029	9.24	9.24	9.5	10.08	9.5	10.08	25.37	23.81	25.37	23.81	23.81	7.32	23.81	7.73	8.53	8.25	8.53	8.2	23.81	23.81	23.81	9.34	4.26	3.8
SPP South - Energy Price - 1H2023	2285	4/3/2029	4/3/2029	4.34	4.18	3.8	4.34	3.95	9.44	24.24	7.88	7.58	7.3	7.25	7.32	7.6	23.33	9.09	24.25	24.24	24.25	26.3	25.37	26.3	24.25	9.44	9.44
SPP South - Energy Price - 1H2023	2286	4/4/2029	4/4/2029	4.34	4.18	3.8	4.22	9.92	10.79	25.37	25.37	25.3	25.3	25.3	24.72	25.16	23.68	24.42	25.3	24.09	23.95	25.3	25.3	25.3	25.3	9.92	3.8
SPP South - Energy Price - 1H2023	2287	4/5/2029	4/5/2029	5.93	9.62	9.62	9.62	9.62	9.62	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	25.37	24.59	24.59	9.62	9.62
SPP South - Energy Price - 1H2023	2288	4/6/2029	4/6/2029	9.46	9.87	9.68	10.33	10.33	10.46	27.05	24.23	9.57	2.27	1.19	1.16	0.95	0.91	0.98	1.16	0.93	8.2	7.77	24.23	20.18	24.23	9.46	9.46
SPP South - Energy Price - 1H2023	2289	4/7/2029	4/7/2029	4.34	4.18	3.8	3.83	3.95	3.83	9.05	8.6	1.27	1.01	0	1.27	0	0.99	1.01	0.99	1.01	8.96	8.48	22.03	22.03	24.06	9.46	9.46
SPP South - Energy Price - 1H2023	2290	4/8/2029	4/8/2029	9.46	9.46	9.46	9.46	9.46	9.46	22.03	22.03	20.03	7.97	22.03	22.03	8.3	17.04	17.15	20.27	22.03	24.06	27.2	24.72	24.72	24.06	10.33	9.7
SPP South - Energy Price - 1H2023	2291	4/9/2029	4/9/2029	9.66	9.66	9.42	9.42	9.42	9.66	24.84	24.14	24.14	24.14	16.35	24.14	7.6	7.73	7.72	8.76	8.76	18.47	24.14	24.14	24.14	24.14	9.42	9.42
SPP South - Energy Price - 1H2023	2292	4/10/2029	4/10/2029	5.03	4.68	3.8	3.96	4.26	10.44	27.36	24.44	24.44	20.88	15.29	8.72	7.6	7.73	8.67	8.72	8.53	24.44	25.37	25.4	25.37	25.05	9.56	9.56
SPP South - Energy Price - 1H2023	2293	4/11/2029	4/11/2029	9.69	9.69	9.69	9.69	9.71	10.59	24.74	12.21	7.58	7.3	1.19	8.76	7.6	7.73	8.06	21.33	21.33	25.37	24.74	24.74	24.74	24.74	9.69	9.69
SPP South - Energy Price - 1H2023	2294	4/12/2029	4/12/2029	9.5	9.5	9.5	9.5	9.5	9.5	23.81	22.03	7.6	7.3	7.25	7.32	7.6	7.73	7.72	8.25	8.53	8.2	7.77	23.81	23.81	23.81	9.5	9.5
SPP South - Energy Price - 1H2023	2295	4/13/2029	4/13/2029	9.31	9.31	10.04	10.17	10.45	10.84	27.04	26.47	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.74	25.37	10.17	10.17
SPP South - Energy Price - 1H2023	2296	4/14/2029	4/14/2029	10.17	9.9	9.76	9.8	10.17	10.17	24.51	23.68	22.28	23.68	23.68	21.69	21.69	11.51	9.46	12.97	21.69	21.69	10.44	10.44	10.29	10.19	4.26	9.31
SPP South - Energy Price - 1H2023	2297	4/15/2029	4/15/2029	9.31	9.31	9.31	9.31	9.31	9.31	20.84	21.69	20.97	18.85	8.56	21.69	21.69	21.69	23.63	23.87	23.63	23.68	24.01	23.49	23.63	21.69	9.31	9.31
SPP South - Energy Price - 1H2023	2298	4/16/2029	4/16/2029	9.18	9.18	9.18	9.18	10.02	10.02	25.37	26.3	26.3	25.59	25.34	25.35	25.37	26.15	26.44	26.44	26.44	26.44	26.44	26.44	26.44	26.44	10.29	10.02
SPP South - Energy Price - 1H2023	2299	4/17/2029	4/17/2029	10.43	10.16	10.43	10.43	10.43	10.43	26.74	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	25.37	25.37	25.37	25.72	25.37	10.43	10.16
SPP South - Energy Price - 1H2023	2300	4/18/2029	4/18/2029	9.11	9.94	9.94	10.21	10.21	10.49	26.26	26.26	26.26	25.37	25.37	22.95	22.95	22.95	19.16	22.95	8.53	22.95	21.57	22.95	22.95	22.95	9.03	8.84
SPP South - Energy Price - 1H2023	2301	4/19/2029	4/19/2029	9.03	9.03	9.03	9.03	9.03	9.03	22.78	22.78	22.78	22.78	20.36	20.36	20.36	7.73	7.72	20.36	20.36	22.13	22.78	22.78	25.37	22.78	9.03	9.03
SPP South - Energy Price - 1H2023	2302	4/20/2029	4/20/2029	8.93	7.77	7.74	8.93	8.93	8.93	22.58	25.37	22.58	24.62	22.58	22.58	22.57	22.57	22.57	22.58	22.57	22.57	22.57	22.57	22.57	9.34	4.26	3.8
SPP South - Energy Price - 1H2023	2303	4/21/2029	4/21/2029	4.34	3.55	3.55	3.55	3.55	3.83	8.28	8.6	8.28	7.97	7.91	7.99	8.3	8.43	8.42	8.84	9.32	8.96	8.48	20.81	20.81	20.81	8.93	8.93
SPP South - Energy Price - 1H2023	2304	4/22/2029	4/22/2029	8.93	8.93	8.93	8.93	8.93	8.93	20.81	20.81	8.28	7.97	7.91	20.81	20.81	19.62	20.81	20.81	20.81	20.81	20.81	23.31	23.31	22.7	8.93	8.93
SPP South - Energy Price - 1H2023	2305	4/23/2029	4/23/2029	9.28	9.28	9.28	9.28	9.28	9.28	21.52	6.96	4.05	3.88	4.39	7.01	23.32	23.32	23.32	23.32	23.32	23.32	23.32	25.37	23.37	23.32	9.54	9.28
SPP South - Energy Price - 1H2023	2306	4/24/2029	4/24/2029	9.4	9.4	9.4	9.4	9.4	9.4	24.49	23.82	23.96	25.15	25.26	26.97	27.08	27.73	28.3	30.17	30.17	28.3	28.3	27.81	27.25	27.25	10.74	10.54
SPP South - Energy Price - 1H2023	2307	4/25/2029	4/25/2029	10.49	10.22	10.22	10.22	9.89	10.22	25.12	25.89	25.56	26.54	26.62	24.78	26.87	26.96	26.87	26.99	26.96	26.96	27.14	27.39	26.87	26.87	10.22	10.22
SPP South - Energy Price - 1H2023	2308	4/26/2029	4/26/2029	9.92	9.92	9.09	9.92	9.92	10.27	26.21	25.3	23.78	23.28	22.91	23.01	22.91	22.91	22.91	22.91	22.86	22.91	22.91	22.91	22.91	22.91	9.09	9.09
SPP South - Energy Price - 1H2023	2309	4/27/2029	4/27/2029	8.91	8.91	8.91	8.91	9.72	9.45	22.52	22.52	4.05	22.14	19.09	19.49	5.81	6.99	7.96	22.52	22.52	25.37	20.72	22.52	25.78	23.29	8.91	8.91
SPP South - Energy Price - 1H2023	2310	4/28/2029	4/28/2029	8.91	8.91	8.91	3.47	8.91	9.68	22.55	21.01	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	22.55	22.63	20.75	21.48	8.91	8.91
SPP South - Energy Price - 1H2023	2311	4/29/2029	4/29/2029	8.91	8.91	8.91	8.91	8.91	8.91	21.08	18.79	4.42	5.85	15	5.58	13.8	12.26	13.96	20.75	20.75	20.75	20.75	22.63	22.63	22.63	9.72	9.72
SPP South - Energy Price - 1H2023	2312	4/30/2029	4/30/2029	8.87	9.67	8.87	9.67	9.67	9.93	25.68	23.74	22.43	22.43	22.43	18.54	14.86	7.97	18.82	2.08	8.9	22.43	22.43	25.37	25.68	25.37	9.67	9.67
SPP South - Energy Price - 1H2023	2313	5/1/2029	5/1/2029	18.73	17.28	18.25	18.73	18.73	18.81	24.42	23.03	23.06	23.05	21.73	21.39	21.28	21.28	21.28	21.28	21.28	21.28	23.23	21.83	23.05	21.28	17.22	17.22
SPP South - Energy Price - 1H2023	2314	5/2/2029	5/2/2029	18.03	18.03	18.03	18.03	18.03	19.64	25.11	24.47	22.13	22.13	24.06	25.37	24.06	22.13	22.13	22.13	22.13	25.37	25.37	25.37	25.57	24.14	18.41	18.34
SPP South - Energy Price - 1H2023	2315	5/3/2029	5/3/2029	18.34	18.34	18.34	18.34	19.42	19.98	25.15	22.45	20.38	9.33	4.58	5.33	6.06	7.29	20.31	9.33	9.28	22.45	22.45	22.45	22.45	22.45	18.34	18.34
SPP South - Energy Price - 1H2023	2316	5/4/2029	5/4/2029	18.12	18.12	18.25	18.12	18.12	19.73	24.15	22.22	22.32	22.22	22.22	22.33	25.68	22.22	22.22	22.22	22.22	22.22	25.47	25.47	25.47	24.72	19.73	19.73
SPP South - Energy Price - 1H2023	2317	5/5/2029	5/5/2029	18.15	19.73	18.27	18.2	18.29	19.73	22.85	22.85	22.85	22.85	22.85	20.98	20.98	20.98	20.98	22.8	20.98	20.98	20.98	22.85	23.45	22.85	19.73	19.73
SPP South - Energy Price - 1H2023	2318	5/6/2029	5/6/2029	19.73	19.28	19.23	18.15	19.73	19.73	22.85	22.85	21.02	21.02	22.85	22.85	22.85	22.85	22.85	22.85	20.98	22.85	20.98	20.98	20.98	20.98	18.12	18.12
SPP South - Energy Price - 1H2023	2319	5/7/2029	5/7/2029	19.06	19.06	19.06	19.06	19.28	19.12	23.21	25.23	23.21	23.21	25.65	25.23	26.46	26.46	23.73	26.46	23.21	23.21	23.31	23.21	23.21	25.22	10.6	19.06
SPP South - Energy Price - 1H2023	2320	5/8/2029	5/8/2029	19.15	19.15	19.15	20.89	19.15	19.43	23.31	23.3	23.31	23.3	21.04	23.3	23.3	23.31	24.58	26.76	26.68	25.11	26.46	26.46	26.46	23.68	19.15	19.15
SPP South - Energy Price - 1H2023	2321	5/9/2029	5/9/2029	19.4	19.4	19.4	19.4	19.43	19.69	23.56	23.56	23.96	26.46	26.46	26.46	26.46	26.97	26.46	26.97	26.46	26.47	26.97	26.97	26.97	26.97	21.16	19.4
SPP South - Energy Price - 1H2023	2322	5/10/2029	5/10/2029	21.48	20.02	19.68	19.68	19.94	21.48	24.8	26.46	26.46	26.46	27.3	27.3	27.43	27.3	27.3	27.57	27.3	27.56	27.56	27.56	27.73	27.3	22.06	21.28
SPP South - Energy Price - 1H2023	2323	5/11/2029	5/11/2029	21.28	21.28	21.28	19.51	20.02	21.28	27.1	24.7	24.71	26.46	26.12	26.46	26.46	26.46	27.1	27.1	27.1	27.1	27.19	27.36	27.36	27.1	21.86	21.86

SPP South - Energy Price - 1H2023	2324	5/12/2029	5/12/2029	21.86	21.28	19.51	20.11	19.76	19.51	22.6	23.51	25.31	25.74	25.31	26.23	25.31	24.64	24.64	24.64	23.56	24.64	24.64	25.31	25.31	24.64	19.51	19.51
SPP South - Energy Price - 1H2023	2325	5/13/2029	5/13/2029	19.51	19.51	19.51	19.51	19.51	19.51	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	23.14	22.59	22.59	22.59	22.59	22.59	22.59	19.51	19.51
SPP South - Energy Price - 1H2023	2326	5/14/2029	5/14/2029	20.59	20.59	20.59	20.59	20.71	22.49	26.46	24.81	26.05	24.81	25.58	26.46	26.46	24.81	24.81	24.81	24.81	24.81	24.81	26.46	28.36	25.34	20.59	20.59
SPP South - Energy Price - 1H2023	2327	5/15/2029	5/15/2029	20.75	20.75	20.75	20.75	20.75	20.75	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.98	24.98	24.98	20.75	20.75
SPP South - Energy Price - 1H2023	2328	5/16/2029	5/16/2029	7.96	7.31	6.8	6.45	6.22	6.03	5.65	4.9	4.23	4.04	4.58	5.33	6.06	7.29	8.3	9.33	9.28	8.58	24.49	24.49	24.49	24.49	20.29	20.29
SPP South - Energy Price - 1H2023	2329	5/17/2029	5/17/2029	7.96	7.31	6.8	6.45	6.22	6.22	6.93	4.9	4.23	4.04	4.58	5.33	6.06	24.24	24.24	21.15	24.24	24.24	24.24	24.24	26.46	24.24	20.05	20.05
SPP South - Energy Price - 1H2023	2330	5/18/2029	5/18/2029	18.6	18.84	18.73	18.6	18.6	19.09	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	11.03	10.6	19.09
SPP South - Energy Price - 1H2023	2331	5/19/2029	5/19/2029	7.96	7.31	6.8	7.02	6.22	6.28	7.91	5.54	7.2	4.57	9.37	22.11	22.11	22.11	24.11	24.75	24.76	24.75	24.76	24.75	23.43	22.11	19.09	19.09
SPP South - Energy Price - 1H2023	2332	5/20/2029	5/20/2029	19.09	19.09	6.8	19.09	19.09	19.09	9.49	22.11	10.69	24.11	24.11	24.03	24.03	22.89	22.11	22.11	22.11	22.11	22.11	24.75	23.43	24.76	20.76	19.09
SPP South - Energy Price - 1H2023	2333	5/21/2029	5/21/2029	17.09	17.09	17.09	17.09	17.09	17.21	17.53	4.9	4.23	21.15	21.15	21.42	21.3	21.15	24.27	21.15	24.44	24.27	24.27	24.44	24.26	22.37	18.3	17.64
SPP South - Energy Price - 1H2023	2334	5/22/2029	5/22/2029	19.83	19.83	19.83	19.83	20.48	19.83	24.01	24.11	25.2	25.1	27.44	27.47	27.82	27.47	27.47	27.87	27.58	28	27.76	28	28.17	27.87	22.22	21.64
SPP South - Energy Price - 1H2023	2335	5/23/2029	5/23/2029	22.68	22.68	22.68	22.68	22	22.78	26.86	26.46	26.26	26.46	27	26.46	26.61	28.31	26.46	28.57	26.86	26.46	24.99	24.99	26.46	24.99	20.76	20.76
SPP South - Energy Price - 1H2023	2336	5/24/2029	5/24/2029	20.9	20.9	4.5	6.19	20.9	22.4	25.13	26.46	26.46	26.46	26.95	26.46	26.46	28.14	26.95	28.73	28.73	26.95	25.13	25.13	25.13	25.13	21.27	21.18
SPP South - Energy Price - 1H2023	2337	5/25/2029	5/25/2029	21.27	21.27	21.27	4.33	21.27	21.27	26.11	26.46	26.67	25.52	25.9	25.52	26.98	25.94	25.82	28.17	26.46	28.26	25.52	26.64	27.4	25.52	22.24	21.27
SPP South - Energy Price - 1H2023	2338	5/26/2029	5/26/2029	21.27	21.27	21.27	21.27	21.62	21.43	24.63	24.63	24.63	24.63	26.91	25.41	24.63	26.91	26.91	26.91	26.91	26.91	26.91	26.91	26.91	26.91	23.24	23.24
SPP South - Energy Price - 1H2023	2339	5/27/2029	5/27/2029	22.46	21.56	21.38	23.24	23.08	22.77	26.91	26.91	26.91	26.91	26.91	27.65	27.65	27.65	27.65	27.65	27.65	27.65	26.91	26.91	26.91	26.91	23.24	21.27
SPP South - Energy Price - 1H2023	2340	5/28/2029	5/28/2029	21.27	21.27	21.27	21.27	21.27	21.43	25.52	23.82	9.79	21.91	25.52	25.52	25.52	25.52	25.52	25.52	25.52	28.26	26.46	26.64	26.46	26.46	22.84	23.24
SPP South - Energy Price - 1H2023	2341	5/29/2029	5/29/2029	21.12	20.48	22.14	20.48	22.14	20.89	24.75	25.1	24.7	26.46	28.24	28.24	28.24	28.24	27.24	28.53	28.24	28.24	28.54	28.54	28.54	28.24	22.98	22.98
SPP South - Energy Price - 1H2023	2342	5/30/2029	5/30/2029	22.85	22.85	22.24	22.24	22.24	22.24	26.46	24.58	24.58	24.58	24.58	25.23	27.43	24.58	27.12	28.11	26.46	27.32	26.51	26.46	24.59	24.58	20.37	20.37
SPP South - Energy Price - 1H2023	2343	5/31/2029	5/31/2029	19.89	19.89	19.89	19.89	19.89	19.95	24.08	24.08	24.08	24.08	24.08	24.08	24.08	22.15	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	5.5	5.17
SPP South - Energy Price - 1H2023	2344	6/1/2029	6/1/2029	5.86	5.33	5.17	4.44	18.68	18.68	26.57	26.57	26.57	26.57	27.09	30.48	30.49	30.49	30.7	30.49	30.49	30.49	30.48	30.49	30.49	30.49	20.33	18.68
SPP South - Energy Price - 1H2023	2345	6/2/2029	6/2/2029	18.68	18.68	18.68	18.68	18.68	18.68	26.2	26.2	26.2	26.24	28.5	28.5	29.25	29.25	32.22	32.22	29.25	29.25	28.5	28.5	28.5	28.5	18.86	18.68
SPP South - Energy Price - 1H2023	2346	6/3/2029	6/3/2029	18.7	19.74	20.33	20.33	20.33	19.5	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	28.5	28.5	29.05	28.5	28.5	18.86	20.33
SPP South - Energy Price - 1H2023	2347	6/4/2029	6/4/2029	22.17	22.17	22.17	21.62	21.58	21.99	32.56	32.71	32.71	32.99	33	34.74	33.11	33	33	33.18	32.99	33.11	33.8	33	33	33	22.17	23.66
SPP South - Energy Price - 1H2023	2348	6/5/2029	6/5/2029	23.73	24.18	24.18	23.03	24.18	24.18	34.62	35.51	35.15	35.15	35.51	35.51	36.42	37.62	39.33	37.62	36.17	36.89	36.17	39.31	38.93	39.54	26.2	22.78
SPP South - Energy Price - 1H2023	2349	6/6/2029	6/6/2029	22.99	22.77	24.88	24.88	24.88	25.17	34.59	36.12	39.23	36.39	40.57	40.4	40.4	40.57	47.42	47.41	47.2	40.4	38.5	40.57	40.04	39.04	26.66	26.2
SPP South - Energy Price - 1H2023	2350	6/7/2029	6/7/2029	25.29	25.02	25.02	25.02	25.02	25.02	34.63	35.36	35.36	35.73	38.77	37.47	39.59	46.14	46.14	48.2	46.3	37.44	37.73	38.6	39.12	37.79	25	23.84
SPP South - Energy Price - 1H2023	2351	6/8/2029	6/8/2029	23.27	23.33	22.84	22.84	23.15	23.33	31.61	32.8	31.15	30.2	30.75	31.44	31.03	32.88	32.8	32.95	30.18	30.75	28.64	33.1	32.82	32.8	23.67	21.88
SPP South - Energy Price - 1H2023	2352	6/9/2029	6/9/2029	20.4	20.4	20.4	20.42	20.4	20.4	28.61	28.61	28.61	28.61	28.61	28.61	31.19	31.19	31.19	31.19	31.19	31.19	31.19	31.19	31.19	31.19	20.4	20.4
SPP South - Energy Price - 1H2023	2353	6/10/2029	6/10/2029	20.4	20.4	20.4	20.4	20.4	20.4	28.61	28.61	28.61	28.61	31.19	28.61	31.19	31.19	31.19	28.61	28.61	28.61	31.19	31.19	32.02	31.19	22.24	20.4
SPP South - Energy Price - 1H2023	2354	6/11/2029	6/11/2029	22.38	22.38	22.38	22.38	22.38	22.46	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	22.38	22.38
SPP South - Energy Price - 1H2023	2355	6/12/2029	6/12/2029	6.2	5.33	5.17	4.44	5.02	20.49	5.79	3.16	5.11	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	20.49	20.49
SPP South - Energy Price - 1H2023	2356	6/13/2029	6/13/2029	20.45	20.45	20.45	20.45	20.45	20.45	28.7	28.7	28.7	28.7	28.7	28.7	28.7	31.36	28.7	28.7	28.7	28.7	31.2	32.87	32.87	32.87	22.89	20.45
SPP South - Energy Price - 1H2023	2357	6/14/2029	6/14/2029	21.67	21.67	21.67	21.67	21.67	21.67	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	33.58	34.35	34.51	34.51	34.51	34.93	34.68	24.48	23.65
SPP South - Energy Price - 1H2023	2358	6/15/2029	6/15/2029	23.8	23.8	22.58	23.8	23.8	23.8	32.04	33.21	34.63	34.69	34.69	34.89	34.89	35.04	36.18	36.07	35.27	34.97	36.15	37.62	38.16	36.15	27.03	25.17
SPP South - Energy Price - 1H2023	2359	6/16/2029	6/16/2029	25.07	24.36	23.8	23.8	23.8	23.8	32.85	33.38	34.26	35.44	35.78	39.18	39.18	39.18	37.64	34.28	33.38	34.28	39.18	39.89	33.38	33.38	25.07	24.02
SPP South - Energy Price - 1H2023	2360	6/17/2029	6/17/2029	24.45	23.8	23.8	23.09	22.61	23.46	31.93	32.42	34.28	38.06	39.18	39.18	40.59	40.59	40.59	39.88	38.83	40.59	39.18	40.59	40.59	39.07	26.66	24.51
SPP South - Energy Price - 1H2023	2361	6/18/2029	6/18/2029	25.65	25.65	24.97	24.97	24.85	25.65	34.64	35	36.1	35.11	33.89	36.5	36.1	36.5	36.5	36.1	32.99	36.1	36.17	36.5	40.19	36.22	26.12	25.65
SPP South - Energy Price - 1H2023	2362	6/19/2029	6/19/2029	26.46	25.65	25.25	25.25	25.25	25.56	36.08	36.17	37.42	36.85	36.45	36.45	40.96	40.96	40.96	37.51	36.85	38.81	39.17	40.11	40.21	39.56	28	26.61
SPP South - Energy Price - 1H2023	2363	6/20/2029	6/20/2029	27.21	27.94	26.94	26.44	26.44	26.94	36.19	37.02	37.05	37.02	39.52	37.02	38.55	39.65	41.68	37.86	39.05	39.62	39.05	41.09	41.68	42.51	31.56	28.14
SPP South - Energy Price - 1H2023	2364	6/21/2029	6/21/2029	27.46	26.92	26.79	26.8	26.83	26.72	36.64	41.44	39.33	42.1	42.65	40.77	42.09	42.09	42.95	40.97	42.09	42.95	43.48	42.09	43.43	42.96	31.9	28.97
SPP South - Energy Price - 1H2023	2365	6/22/2029	6/22/2029	27.94	27.94	27.94	26.2	27.94	27.94	36.19	36.59	37.21	39.75	41.01	40.23	39.32	40.64	42.31	47.33	37.4	38.81	38.83	39.77	40.23	37.98	27.67	26.63
SPP South - Energy Price - 1H2023	2366	6/23/2029	6/23/2029	26.45	25.73	25.73	25.04	25.69	25.71	35.11	36.08	38.37	37.5	36.18	39.18	39.18	40.62	43.06	39.18	39.18	39.18	39.18	36.08	39.18	36.08	25.04	25.03
SPP South - Energy Price - 1H2023	2367	6/24/2029	6/24/2029	25.04	23.71	25.04	25.03	25.04	25.03	35.11	35.11	35.11	35.11	35.11	36.08	36.08	36.08	36.08	39.1	38.94	38.16	36.08	36.08	36.08	35.11	25.04	23.23
SPP South - Energy Price - 1H2023	2368	6/25/2029	6/25/2029	23.45	21.48	21.55	21.59	21.79	23.45	32.99	34.12	34.26	34.2	34.26	34.26	34.26	34.6	34.26	33.17	32.99	29.95	29.95	32.55	29.95	29.95	21.48	21.69
SPP South - Energy Price - 1H2023	2369	6/26/2029	6/26/2029	21.72	21.88	21.81	21.72	22.05	21.78	32.29	32.99	34.2	34.58	34.58	34.58	34.58	34.58	35.07	34.93	34.87	34.58	34.58	34.87	34.87	34.83	24.36	24.25
SPP South - Energy Price - 1H2023	2370	6/27/2029	6/27/2029	24.94	24.28	24.28	24.28	24.94	24.28	33.48	33.11	31.72	32.61	34.65	35.64	35.27	35.27	34.9	33.43	34.9	32.1	34.65	34.65	34.89	34.63	24.28	22.5
SPP South - Energy Price - 1H2023	2371	6/28/2029	6/28/2029	21.36	19.81	19.74	19.74	20.56	19.89	27.85	27.85	28.47	28.19	27.85	28.63	30.92	32.18	33.16	32.18	31.91	31.91	32.18	31.91	31.91	31.91	20.95	20.62
SPP South - Energy Price - 1H2023	2372	6/29/2029	6/29/2029	24.26	24.26	24.26	24.22	23.7	24.92	33.24	34.2	35.61	35.61	35.61	35.61	39.45	40.23	45.98	44.08	39.02	45.98	44.97	40.23	39.43	35.83	26.08	25.8
SPP South - Energy Price - 1H2023	2373	6/30/2029	6/30/2029	25.36	24.44	24.26	24.26	24.26	24.26	34.02	34.95	36.18	34.02	34.95	36.18	40.62	39.18	39.18	42.72	39.18	40.7	39.18	34.95	34.95	34.95	25.15	24.92
SPP South - Energy Price - 1H2023	2374	7/1/2029	7/1/2029	36.16	35.34	34.59	34.59	34.59	34.36	38.26	40.18	39.08	41.28	40.19	41.28	42.67	46.28	46.57	45.66	45.63	43.09	45.66	45.66	46.2	45.57	38.09	35
SPP South - Energy Price - 1H2023	2375	7/2/2029	7/2/2029	36.5	34.93	34.93	35.63	34.93	35.49	41.36	41.36	41.36	41.8	45.36	53.65	54.52	54.5	54.57	54	48.07	47.49	48.88	44.85	48.1	47.28	36.63	37.32
SPP South - Energy Price - 1H2023	2376	7/3/2029	7/3/2029	37.68	34.66	34.66	34.66	35.94	35.24	42.49	44.32	47.19	51.38	54.96	55.23	55.87	55.6	60.71	62.16	61.32	62.2	62.02	55.29	55.47	55.46	48.22	49.25
SPP South - Energy Price - 1H2023	2377	7/4/2029	7/4/2029	46.54	41.98	39.07	38.78	38.78	39.41	46.16	47.58	52.18	52.53	55.69	55.64	55.8	55.64	55.08	53.99	49.1	55.55	55.64	57.4	52.13	54.97	47.43	42.3
SPP South - Energy Price - 1H2023	2378	7/5/2029	7/5/2029	39.08	38.18	37.54	38.78	38.78	40.2	44.59	45.43	46.07	47.6	50.87	46.8	53.07	47.3	56.59	53.63	59.25	55.45	55.45	56.64	48.52	53.53	51.02	41.8
SPP South - Energy Price - 1H2023	2379	7/6/2029	7/6/2029	40.8	39.87	38.78	38.78	37.25	38.78	41.68	43.79	44.81	48.52	52.24	48.06	52.85	52.91	54.6	54.94	60.15	58.46	54.74	52.91	52.95	52.87	50.21	47.77
SPP South - Energy Price - 1H2023	2380	7/7/2029	7/7/2029	44.38	40.98	39.87	39.87	39.87	39.87	46.28	46.28	44.44	46.28	46.28	47.57	47.57	47.98	53.85	51.31	51.15	53.85	60.22	59.22	53.85	53.86	44.67	39.87
SPP South - Energy Price - 1H2023	2381	7/8/2029	7/8/2029	38.78	38.28	36.83	35.19	36.54	38.44	43.61	43.51	43.61	43.37	44.8	46.04	46.61	47.98	52.96	47.57	55.27	47.98	47.57	54.82	47.98	47.57	37.9	37.06
SPP South - Energy Price - 1H2023	2382	7/9/2029	7/9/2029	37.89	35.83	35.07	35.07	35.07	35.97	41.94	41.94	41.94	42.8	43.2	42.87	43.54	41.23	42.04	41.94	41.5	41.94	42.87	41.94	41.94	43.04	35.15	35.07
SPP South - Energy Price - 1H2023	2383	7/10/2029	7/10/2029	35.42	35.42	35.42	34.48	34.48	36.23	43.15	43.54	43.66	43.6	46.95	47.9	48.71	48.24	51.76	51.75	47.2	48.04	47.86	48.65	46.95	44.02	38.07	37
SPP South - Energy Price - 1H2023	2384	7/11/2029	7/11/2029	37.68	35.73	35.73	35.73	36.53	36.63	42.61	42.73	42.18	42.61	41.57	44.35	45.26	44.37	45.2	47.77	47.33	44.37	48.25	45.26	42.17	42.18	35.73	35.73
SPP South - Energy Price - 1H2023	2385	7/12/2029	7/12/2029	36.68	36.68	36.58	36.82	36.91	36.34	41.15	43.32	39.85	42.18	45.72	46.7	45.11	45.72	43.82	45.72	43.82	43.32	43.32	51.06	43.32	48.8	39.33	36.92
SPP South - Energy Price - 1H2023	2386	7/13/2029	7/13/2029	35.82	34.86	32.54	32.59	34.86	35.82	41.76	44.31	42.7	47.44	47.44	44.47	45.33	47.44	47.44	44.07	47.44	47.44	48.85	49.39	47.44	50.01	42.48	38.78
SPP South - Energy Price - 1H2023	2387	7/14/2029	7/14/2029	38.78	38.63	37.36	36.82	35.82	35.82	42.74	42.74	42.74	46.28	46.01	42.74	46.28	47.98	50.7	50.7	51.94	47.34	55.92	50.7	46.28	46.28	38.47	35.82
SPP South - Energy Price - 1H2023	2388	7/15/2029	7/15/2029	34.86	32.64	32.54	32.59	34.86	34.86	39.33	41.25	41.6	41.25	41.6	42.74	42.74	42.74	41.6	44.85	42.74	41.6	43.79	47.52	53.57	47.98	38.78	38.78
SPP South - Energy Price - 1H2023	2389	7/16/2029	7/16/2029	37.82	37.23	35.21	36.82	36.91	36.34	41.28	41.28	45.72	45.72	48.26	46.88	52.82	52.84	53.28	53.41	53.41	53.89	53.84	53.28	53.83	53.28	46.58	44.33
SPP South - Energy Price - 1H2023	2390	7/17/2029	7/17/2029	39.08	39.04	36.91	36.82	38.78	38.38	42.05	46.05	50.06	49.94	46.05	51.32	53.67	51.32	51.55	49.72	54.13	47.11	54.25	48.07	47.78	51.32	42.88	37.34
SPP South - Energy Price - 1H2023	2391	7/18/2029	7/18/2029	34.19	34.04	33.29	34.19	34.19	33.29	38.76	38.16	40.64	40.17	40.87	42.63	44.45	40.62	41.06	41.95	45.44	41.38	50.37	46.91	40.64	42.06	36.09	34.19
SPP South - Energy Price - 1H2023	2392	7/19/2029	7/19/2029	33.29	33.29	33.29	33.29	33.29	35.45	39.75	40.13	41.43	41.6	42.75	44.89	45.68	45.3	47.05	45.84	44.2	45.04	45.29	45.78	45.94	46.48	40.6	36.8
SPP South - Energy Price - 1H2023	2393	7/20/2029	7/20/2029	34.69	34.19	34.29	33.75	34.29	34.29	39.89	40.96	41.97	48.34	49.53	50.96	51.34	48.53	51.34	51.34	51.34	51.34	51.34	51.34	51.34	43.64	38.78	38.78
SPP South - Energy Price - 1H2023	2394	7/21/2029	7/21/2029	36.55	36.52	35.74	35.93	36.89	35.89	42.08	42.65	40.79	42.58	42.76	46.28	46.64	46.28	46.64	46.64	46.64	46.28	46.64	46.28	46.28	41.53	33.04	33.04
SPP South - Energy Price - 1H2023	2395	7/22/2029	7/22/2029	33.04	32.17	32.17	32.17	33.04	32.17	38.39	38.39	38.39	38.39	38.39	39.43	41.06	45.99	46.64	46.64	46.64	46.28	46.28	46.28	43.57	45.54	37.77	36.25
SPP South - Energy Price - 1H2023	2396	7/23/2029	7/23/2029	33.68	31.99	32.85	33.14	33.05	33.17	39.69	39	38.4	39.32	39.69	41.74	46.92	41.97	41.97	43.79	48.14	49.18	51.08	49.14	43.79	41.08	38.78	33.06
SPP South - Energy Price - 1H2023	2397	7/24/2029	7/24/2029	33.16	33.16	33.16	33.16	32.75	33.16	39.62	39.78	39.62	43.07	43.26	40.01	47.91	50.92	50.2	48.89	48.89	48.89	50.88	48.89	45.66	44.17	35.56	35.74
SPP South - Energy Price - 1H2023	2398	7/25/2029	7/25/2029	34.86	33.5	33.5	32.61	32.77	33.5	39.95	40.35	41.39	44.58	47.92	51.3	51.11	51.53	52.05	52.16	52.09	51.66	51.53	46.41	46.87	42.92	38.78	38.78
SPP South - Energy Price - 1H2023	2399	7/26/2029	7/26/2029	33	34.53	38.66	37.48	37.8	38.78	45.08	42	41.66	45.08	51.53	52.02	52.94	53.45	52.81	53.06	53.03	52.31	52.95	52.45	52.05	51.92	38.99	38.78
SPP South - Energy Price - 1H2023	2400	7/27/2029	7/27/2029	34.6	38.78	34.36	37.9	38.78	39.8	41.98	40.89	44.74	48.53	46.24	45.41	50.6	52.42	53.79	52.96	52.77	51.57	51.94	50.97	47.03	46.1	38.78	34.98
SPP South - Energy Price - 1H2023	2401	7/28/2029	7/28/2029	34.31	34.25	32.74	33.41	33.63	32.74	40.13	42.73	46.28	46.68	49.89	55.36	59	59.38	59	60.19	59.3	49.54	54.47	46.28	44.36	46.28	33.84	34.06
SPP South - Energy Price - 1H2023	2402	7/29/2029	7/29/2029	33.62	33.62	33.62	32.74	33.63	32.74	39.07	39.07	39.07	39.07	40.13	46.28	46.28	47.49	51.34	47.98	50.78	51.34	51.34	57.96	54.76	47.98	38.78	37.17
SPP South - Energy Price - 1H2023	2403	7/30/2029	7/30/2029	36.54	33.81	33.44	32.93	33.07	36.72	40.12	40.29	40.52	41.98	48.56	50.85	51.38	51.9	51.97	53.71	55.02	54.65	52.43	54.89	51.63	51.04	43.73	43.97
SPP South - Energy Price - 1H2023	2404	7/31/2029	7/31/2029	40.23	40.2	38.78	37.57	37.57	40.23	44.42	44.87	44.31	47.28	51.89	52.14	53.77	55.81	58.25	60.32	59.27	60.56	58.79	57.95	56.18	48.96	45.29	43.23
SPP South - Energy Price - 1H2023	2405	8/1/2029	8/1/2029	42.48	36.32	37.32	37.32	39.69	41.15	50.1	49.39	45.77	53.64	57.07	58.76	59.58	60.52	59.78	59.78	59.58	59.69	59.18	59.3	52.89	52.65	45.11	41.15
SPP South - Energy Price - 1H2023	2406	8/2/2029	8/2/2029	39.69	39.46	36.75	36.96	37.76	38.2	46.24	46.24	51.49	49.63	53.67	54.78	57.79	59.48	52.87	59.95	60.06	59.69	59.3	58.14	51.49	50.18	39.95	37.76

SPP South - Energy Price - 1H2023	2407	8/3/2029	8/3/2029	38.53	37.85	38.53	37.54	39.69	41.08	45.49	45.49	45.49	46	46.59	46.94	52.01	55.84	55.84	57.58	51.78	57.42	57.67	55.84	52.04	48.95	39.69	39.16
SPP South - Energy Price - 1H2023	2408	8/4/2029	8/4/2029	38.53	37.85	37.54	37.54	37.54	37.54	37.07	36.68	37.07	37.49	37.07	37.07	42.96	42.96	44.01	44.01	42.62	44.63	39.46	44.03	44.01	41.93	41.15	39.69
SPP South - Energy Price - 1H2023	2409	8/5/2029	8/5/2029	38.53	39.37	40.5	39.69	38.28	37.61	37.19	37.69	37.47	39.2	39.2	40.64	41.52	48.25	48.26	46.71	47.59	47.93	47.68	47.41	48.26	44.01	39.69	39.29
SPP South - Energy Price - 1H2023	2410	8/6/2029	8/6/2029	38.47	37.9	37.78	39.01	39.18	40.47	46.66	47.06	46.93	54.42	52.51	59.42	59.19	59.52	59.95	60.14	59	58.12	52.58	53.19	53.44	49.99	39.07	38.36
SPP South - Energy Price - 1H2023	2411	8/7/2029	8/7/2029	38.36	38.28	37.02	37.02	38.36	38.72	45.75	46.14	45.91	46	51.32	51.72	57.92	58.25	58.51	58.91	50.55	47.39	49.02	49.57	50.55	47.38	38.47	38.71
SPP South - Energy Price - 1H2023	2412	8/8/2029	8/8/2029	32.96	31.13	32.96	31.13	31.13	31.13	38.27	38.99	37.36	36.24	37.09	39.31	39.31	38.99	42.7	38.99	42.11	39.31	42.73	42.72	40.64	39.23	31.13	31.12
SPP South - Energy Price - 1H2023	2413	8/9/2029	8/9/2029	27.92	27.92	27.92	27.92	27.92	27.92	35.74	35.74	33.95	35.74	35.74	35.96	35.96	36.49	41.78	41.35	39	41.03	41.03	41.61	40.07	36.32	30.56	30.8
SPP South - Energy Price - 1H2023	2414	8/10/2029	8/10/2029	27.62	27.62	27.62	27.62	27.62	27.62	35.44	35.65	35.44	36.38	35.44	35.64	35.65	36.49	36.68	38.62	38.62	38.84	41.99	38.65	36.37	36.05	28.8	28.1
SPP South - Energy Price - 1H2023	2415	8/11/2029	8/11/2029	27.62	27.62	27.62	27.62	27.62	27.62	27.28	27.28	29.07	30.28	30.38	36.06	36.26	39.2	39.2	40.64	39.2	39.2	32.44	31.94	30.04	28.99	27.62	27.62
SPP South - Energy Price - 1H2023	2416	8/12/2029	8/12/2029	27.62	27.62	27.62	27.62	27.62	27.24	27.08	27.28	27.28	27.28	27.28	29.65	26.65	32	30.84	28.65	27.84	30.29	32	36.09	32	30.88	30.3	30.54
SPP South - Energy Price - 1H2023	2417	8/13/2029	8/13/2029	33.73	33.73	32.66	32.01	32.01	33.73	40.23	40.23	39.88	39.88	40.23	42.46	42.75	43.75	44.47	43.75	43.75	42.74	44.19	44.19	44.87	42.74	35.01	33.9
SPP South - Energy Price - 1H2023	2418	8/14/2029	8/14/2029	38.44	37.67	37.37	36.85	37.23	37.43	45.37	44.26	44.36	45.88	45.88	48.99	51.83	52.34	52.32	59.57	51.66	52.12	52.34	52.53	52.75	49.79	38.82	37.48
SPP South - Energy Price - 1H2023	2419	8/15/2029	8/15/2029	39.32	38.63	38.44	38.07	37.64	38.83	46.95	45.31	44.66	46.4	50.3	50.2	53.31	53.27	54.51	53.96	53.54	53.64	60.76	60.94	54.39	52.35	39.69	39.69
SPP South - Energy Price - 1H2023	2420	8/16/2029	8/16/2029	39.03	38.47	38.11	38.11	39.69	39.69	46.6	46.06	46.06	47.08	50.31	53.27	52.88	53.9	53.5	53.34	60.83	54.37	64.54	60.93	55.68	55.65	50.87	44.5
SPP South - Energy Price - 1H2023	2421	8/17/2029	8/17/2029	39.9	39.69	41.84	39.69	39.69	41.15	50.31	46.11	45.81	45.27	52.34	57.89	57.8	58.14	59.14	59.19	59.19	59.11	59.11	54.34	53.37	52.28	44.66	40.78
SPP South - Energy Price - 1H2023	2422	8/18/2029	8/18/2029	39.55	39.55	38.12	38.07	39.55	39.55	39.06	39.2	36.86	40.51	44.83	47.28	46.85	54.13	50.95	54.22	57.29	59.66	58.24	53.99	52.84	53.69	43.7	41.98
SPP South - Energy Price - 1H2023	2423	8/19/2029	8/19/2029	40.78	39.69	38.54	37.63	36.88	37.58	39.2	36.69	40.27	43.16	48.13	47.52	47.99	53.58	51.24	54.22	54.22	54.22	54.22	53.58	50.56	48.03	44.66	43.41
SPP South - Energy Price - 1H2023	2424	8/20/2029	8/20/2029	41.11	39.69	39.69	41.15	40.84	43.25	50.69	54.49	54.49	58.1	59.45	59.52	65.36	64.3	67.32	67.28	67.28	67.28	66.4	65.54	61.63	57.32	49.59	43.77
SPP South - Energy Price - 1H2023	2425	8/21/2029	8/21/2029	40.13	39.69	38.62	37.89	37.58	39.69	51.64	52.26	47.85	52.58	56.63	54.2	56.14	54.23	61.41	53.56	54.86	56.14	63.42	61.37	52.58	54.84	42.79	41.93
SPP South - Energy Price - 1H2023	2426	8/22/2029	8/22/2029	41.08	38.75	38.75	38.75	37.75	39.69	46.71	47.95	47.7	55.71	56.93	61.38	65.02	69.61	69.85	72.39	79.02	69.61	69.61	69.61	65.53	61.58	57.35	48.42
SPP South - Energy Price - 1H2023	2427	8/23/2029	8/23/2029	45.89	42.29	39.69	41.92	43.03	45.89	56.79	53.36	57.59	56.63	57.29	62.58	65.93	70.31	70.38	71.89	70.31	70.31	70.12	70.31	67.62	57.21	52.49	49.1
SPP South - Energy Price - 1H2023	2428	8/24/2029	8/24/2029	44.61	46.13	42.97	45.52	46.31	47.11	57.51	57.85	58.05	63.68	69.88	71.52	70.11	67.99	70.11	75.55	70.11	71.31	69.87	66.1	55.85	55.17	47.11	48.89
SPP South - Energy Price - 1H2023	2429	8/25/2029	8/25/2029	44.43	41.44	42.97	42.32	41.99	43.06	42.37	39.46	39.2	45.73	50.97	51.33	57.1	58.66	60.29	63.81	64.49	60.02	64.49	59.27	51.17	47.38	44.03	43.93
SPP South - Energy Price - 1H2023	2430	8/26/2029	8/26/2029	41.81	41.77	40.34	39.69	38.96	39.69	39.2	39.2	39.2	39.2	40.34	45.73	48.1	47.65	48.23	46.6	47.36	43.79	46.51	47.36	46.77	43.75	39.69	39.69
SPP South - Energy Price - 1H2023	2431	8/27/2029	8/27/2029	36.43	36.43	35.87	34.09	36.43	36.43	40.54	39.08	38.77	39.08	41.39	42.46	42.41	42.79	42.79	42.79	44.25	49.58	47.09	46	48.19	49.98	39.69	39.69
SPP South - Energy Price - 1H2023	2432	8/28/2029	8/28/2029	39.69	40.57	40.57	40.57	40.57	43.32	48.47	45.08	45.08	46.36	49.18	50.59	50.08	57.83	58.53	58.6	56.36	58.33	57.83	51.21	53.4	51.66	42.22	40.57
SPP South - Energy Price - 1H2023	2433	8/29/2029	8/29/2029	39.69	39.69	37.47	39.69	39.69	39.69	45.28	44.53	44.2	44.24	42.86	44.24	44.53	44.73	45.02	47.43	48.19	58.53	51.05	51.3	50.82	50.01	39.49	38.21
SPP South - Energy Price - 1H2023	2434	8/30/2029	8/30/2029	35.5	35.99	37.34	36.26	37.85	39.69	45.12	42.09	42.14	42.14	42.14	42.14	42.14	44.42	44.42	44.14	46.5	51.85	55.46	49.02	47.38	48.2	43.81	40.52
SPP South - Energy Price - 1H2023	2435	8/31/2029	8/31/2029	39.69	39.69	39.69	39.69	39.69	39.69	45.36	44.07	44.3	46.8	45.25	51.45	47.33	56.49	59.94	61.13	59.89	59.94	53.78	52.21	49.11	45.7	39.1	38.21
SPP South - Energy Price - 1H2023	2436	9/1/2029	9/1/2029	32.95	34.99	34.83	32.95	29.71	32.95	46.49	46.81	47.84	50.04	56.01	63.34	63.92	64.01	64.01	64.01	64.01	58.89	64.01	65.11	63.9	59.53	34.99	29.37
SPP South - Energy Price - 1H2023	2437	9/2/2029	9/2/2029	30.19	27.93	29.14	27.93	27.93	28.05	42.6	42.41	43.39	43.8	50.04	50.04	53.14	55.1	64.01	64.01	60.12	64.01	54.8	64.01	58.11	59.15	34.27	32.37
SPP South - Energy Price - 1H2023	2438	9/3/2029	9/3/2029	30.89	32.95	32.95	29.11	32.95	34.52	41.49	38.99	38.77	40.52	40.52	41.49	41.49	40.74	42.05	42.01	41.49	42.17	48.45	42.78	41.58	41.59	33.54	30.99
SPP South - Energy Price - 1H2023	2439	9/4/2029	9/4/2029	33.7	32.3	33.19	33.19	32.3	33.62	43.23	43.23	40.96	43.23	42.58	45.61	48.13	47.82	47	47.94	48.89	43.73	48.88	48.68	48.47	43.73	33.75	32.3
SPP South - Energy Price - 1H2023	2440	9/5/2029	9/5/2029	32.71	32.71	32.71	32.71	32.71	33.61	45.11	46.52	45.98	49.47	51.59	50.68	50.07	51.14	51.91	48.87	49.26	49.26	50.39	50.12	50.39	48.94	36.86	35.63
SPP South - Energy Price - 1H2023	2441	9/6/2029	9/6/2029	34.99	34.99	33.03	33.73	34.99	34.99	45.24	45.4	44.63	43.12	44.48	46.75	43.06	45.4	43.55	43.55	42.95	47.21	43.86	43.55	48.46	43.55	33.21	33.5
SPP South - Energy Price - 1H2023	2442	9/7/2029	9/7/2029	32.64	31.76	31.76	31.76	31.76	32.64	41.58	41.43	40.01	38.44	39.48	38.44	38.44	38.44	38.44	38.44	38.44	38.56	43.1	42.63	42.62	38.44	31.76	29.36
SPP South - Energy Price - 1H2023	2443	9/8/2029	9/8/2029	29.06	29.06	29.06	29.36	31.76	31.76	48.24	45.67	44.59	48.24	48.24	48.24	48.24	48.24	48.24	49.56	49.74	54.87	55.1	53.49	53.14	49.63	32.64	29.06
SPP South - Energy Price - 1H2023	2444	9/9/2029	9/9/2029	29.06	29.06	29.06	29.06	29.06	29.49	45.32	45.67	45.59	44.58	48.24	49.56	49.56	53.14	52.97	53.14	49.56	53.14	55.1	55.1	53.14	51.55	33.14	33.5
SPP South - Energy Price - 1H2023	2445	9/10/2029	9/10/2029	32.25	32.25	32.25	32.25	32.25	33.02	42.67	42.67	42.67	42.59	42.67	42.21	45.96	46.18	47.4	47.4	47.4	47.4	47.4	47.55	47.4	47.4	34.99	32.25
SPP South - Energy Price - 1H2023	2446	9/11/2029	9/11/2029	31.21	31.38	30.54	31.38	31.38	31.38	42.08	42.34	40.68	39.71	38.44	41.25	41.25	41.69	42.08	39.85	41.69	44.52	45.51	42.08	40.88	37.86	27.97	28.36
SPP South - Energy Price - 1H2023	2447	9/12/2029	9/12/2029	28.32	28.56	28.98	28.32	28.32	29.06	40.62	39.65	38.44	38.44	38.23	37.26	36.48	36.48	38.44	36.48	39.77	41.7	46.28	42.14	42.15	40.95	32.68	31.79
SPP South - Energy Price - 1H2023	2448	9/13/2029	9/13/2029	32.3	31.02	31.68	31.68	31.63	31.52	41.43	39.71	37.17	38.44	37.99	37.17	37.17	37.17	37.17	38.44	40.43	45.39	47.36	47.9	44.74	42.95	33.14	33.5
SPP South - Energy Price - 1H2023	2449	9/14/2029	9/14/2029	31.85	32.29	31.42	31.89	31.61	31.85	41.3	41.3	41.3	39.57	38.44	36.4	38.44	38.44	36.12	38.44	38.44	40.65	39.85	38.44	38.44	36.22	28	28
SPP South - Energy Price - 1H2023	2450	9/15/2029	9/15/2029	28	28	28	28	28	28	42.53	12.42	10.86	11.06	11.54	12.7	15.53	30.15	35.38	22.32	42.53	42.53	42.53	46.45	46.45	42.53	28	28
SPP South - Energy Price - 1H2023	2451	9/16/2029	9/16/2029	28	28	28	28	28	28	42.53	12.42	5.62	2.2	11.54	12.7	15.53	17.58	20.15	42.53	42.53	42.53	46.45	46.45	42.53	42.53	28	28
SPP South - Energy Price - 1H2023	2452	9/17/2029	9/17/2029	14.12	13.34	12.66	12.02	13.59	26.12	32.34	34.38	34.01	38.07	38.44	38.44	38.44	38.93	39.3	39.85	39.87	41.7	43.3	42.02	39.91	38.93	29.8	28.48
SPP South - Energy Price - 1H2023	2453	9/18/2029	9/18/2029	30.39	30.39	30.39	30.39	30.39	31.21	41.08	40.53	40.81	41.08	41.08	41.51	43.13	44.56	45.98	45.98	45.98	45.98	45.98	45.98	42.11	41.08	30.39	30.39
SPP South - Energy Price - 1H2023	2454	9/19/2029	9/19/2029	30.34	28.27	30.34	28.24	30.34	31.17	41.03	41.03	38.44	40.22	41.03	41.03	41.03	44.27	41.45	43.07	42.22	45.92	45.92	45.92	41.45	41.03	30.34	30.34
SPP South - Energy Price - 1H2023	2455	9/20/2029	9/20/2029	30.46	30.46	30.46	30.46	30.46	30.47	41.17	39.02	40.03	39.73	41.17	41.17	41.6	41.6	41.6	41.6	41.6	46.09	46.09	46.09	45.35	41.48	31.3	31.3
SPP South - Energy Price - 1H2023	2456	9/21/2029	9/21/2029	28.67	28.67	28.67	28.67	29.01	29.44	39.51	39.14	38.6	36.51	37.17	34.2	34.2	34.2	34.2	36.36	34.2	39.51	40.55	39.14	35.53	35.9	26.28	26.28
SPP South - Energy Price - 1H2023	2457	9/22/2029	9/22/2029	26.28	26.28	26.28	26.28	24.18	24.18	39.91	12.42	10.86	10.06	11.54	12.7	15.53	17.58	20.15	36.24	33.34	39.91	39.91	39.91	39.91	39.91	15.63	14.65
SPP South - Energy Price - 1H2023	2458	9/23/2029	9/23/2029	14	11.9	10.43	10.97	10.62	11.32	14.69	3.63	3.32	3.02	0	0	3.63	14.4	5.02	23.35	22.53	39.91	39.91	39.91	25.64	39.91	10.97	11.92
SPP South - Energy Price - 1H2023	2459	9/24/2029	9/24/2029	8.86	10.61	11.77	9.09	9.09	11.54	13.15	10.83	10.37	10.95	11.66	18.76	34.14	34.14	34.14	34.14	38.44	38.99	40.17	39.44	39.07	38.44	28.61	26.23
SPP South - Energy Price - 1H2023	2460	9/25/2029	9/25/2029	27.95	27.95	27.95	27.95	27.95	27.95	38.04	36.07	36.07	36.07	36.07	39.2	36.07	36.07	39.85	38.44	41.24	44.25	45.43	43.31	42.14	41.23	31.44	30.53
SPP South - Energy Price - 1H2023	2461	9/26/2029	9/26/2029	30.78	30.78	28.18	30.78	30.78	31.63	41.52	41.52	41.53	41.97	41.97	41.8	42.15	43.65	43.94	43.65	43.63	44.7	45.81	43.65	42.2	41.53	31.63	30.79
SPP South - Energy Price - 1H2023	2462	9/27/2029	9/27/2029	31.05	31.05	31.05	31.05	31.05	31.9	41.82	41.82	38.44	36.59	36.59	36.72	36.59	38.13	38.07	38.44	40.72	42.27	41.24	39.44	37.57	36.59	28.42	28.42
SPP South - Energy Price - 1H2023	2463	9/28/2029	9/28/2029	28.54	28.54	28.54	28.54	28.54	28.54	36.92	36.72	36.72	36.72	36.72	36.72	36.72	38.44	36.72	36.72	37.36	38.02	38.48	38.16	38.02	36.8	30.22	28.54
SPP South - Energy Price - 1H2023	2464	9/29/2029	9/29/2029	28.54	28.54	28.54	28.54	28.54	28.54	43.34	43.34	37.93	12.73	2.93	13.84	4.49	12.73	0	5.4	18.68	23.18	43.34	25.1	19.46	21.67	14.79	14.28
SPP South - Energy Price - 1H2023	2465	9/30/2029	9/30/2029	14	13.66	13.26	13.45	14.62	28.54	43.34	22.2	12.53	12.73	13.83	15.4	17.94	19.04	22.51	23.35	43.34	47.36	48.65	47.36	47.36	43.34	28.54	28.54
SPP South - Energy Price - 1H2023	2466	10/1/2029	10/1/2029	18.35	18.35	18.35	18.35	18.35	18.35	28.35	26.85	26.85	26.85	26.85	26.85	26.85	28.35	27.75	28.35	31.48	31.48	31.84	31.48	29.39	28.35	19.14	18.35
SPP South - Energy Price - 1H2023	2467	10/2/2029	10/2/2029	19.14	18	19.14	19.14	19.14	17.25	28.35	26.71	25.8	25.43	25.43	25.43	25.43	26.1	26.52	26.88	26.4	26.39	26.4	25.43	25.43	25.43	17.25	17.25
SPP South - Energy Price - 1H2023	2468	10/3/2029	10/3/2029	17.2	17.2	17.2	17.2	17.2	17.2	25.37	25.37	25.37	8.07	25.37	16.22	25.37	25.37	25.37	25.37	25.37	26.7	26.67	25.37	25.37	28.35	19.09	17.2
SPP South - Energy Price - 1H2023	2469	10/4/2029	10/4/2029	17.92	17.92	9.43	8.99	7.8	8.99	22.36	11.36	6.68	6.79	7.38	26.3	26.3	26.3	26.3	26.3	27.45	27.23	30.83	28.08	28.35	28.35	17.92	17.92
SPP South - Energy Price - 1H2023	2470	10/5/2029	10/5/2029	17.96	17.96	17.96	17.96	17.96	17.96	28.35	26.74	26.34	26.34	26.9	26.99	27.45	28.35	28.35	27.79	28.35	31	31.24	31.24	30.13	28.35	19.94	19.94
SPP South - Energy Price - 1H2023	2471	10/6/2029	10/6/2029	19.05	19.94	18.85	18.92	19.94	19.95	27.35	27.35	27.35	27.35	27.35	28.1	28.1	27.35	27.35	24.62	28.1	28.1	29.33	28.1	27.35	24.62	17.96	17.96
SPP South - Energy Price - 1H2023	2472	10/7/2029	10/7/2029	17.96	17.96	17.96	19.52	19.94	18.13	24.62	24.62	27.35	24.62	24.62	24.62	24.62	24.62	24.62	24.62	24.62	24.62	26.77	24.62	24.62	24.62	17.96	17.96
SPP South - Energy Price - 1H2023	2473	10/8/2029	10/8/2029	20	21.02	21.05	22.12	22.12	22.12	30.6	30.6	30.6	31.49	31.49	30.6	30.6	28.69	30.6	31.8	37.98	39.45	39.39	34.63	30.6	28.69	22.42	22.42
SPP South - Energy Price - 1H2023	2474	10/9/2029	10/9/2029	22.42	20.32	20.32	22.42	23.25	23.25	34.4	32.13	31.74	31.02	31.02	31.02	29.05	29.05	29.05	29.05	29.05	29.39	31.02	31.02	31.02	29.39	17.81	17.81
SPP South - Energy Price - 1H2023	2475	10/10/2029	10/10/2029	17.42	17.42	17.81	17.42	17.81	20.19	28.53	28.53	29.39	30.93	30.42	30.42	28.53	29.39	28.53	28.53	29.39	30.42	30.42	31.03	30.93	30.93	22.42	22.42
SPP South - Energy Price - 1H2023	2476	10/11/2029	10/11/2029	22.42	23.25	22.42	23.25	23.86	23.76	32.68	31.93	30.78	28.84	28.84	28.35	29.39	16.17	28.84	28.84	28.84	34.77	33.92	39.06	37.71	31.99	20.95	20.13
SPP South - Energy Price - 1H2023	2477	10/12/2029	10/12/2029	19.86	20.95	20.95	20.59	20.95	22.03	29.69	28.35	28.35	28.35	28.35	28.85	28.35	27.34	28.35	28.35	28.85	34.32	36.73	35.5	33.69	28.35	22.03	17.87
SPP South - Energy Price - 1H2023	2478	10/13/2029	10/13/2029	18.64	18.64	18.64	18.64	18.64	19.98	29.25	25.56	12.14	22.46	26.02	25.78	25.56	27.78	25.56	25.56	27.82	30.75	30.75	30.75	30.21	29.66	18.64	20.59
SPP South - Energy Price - 1H2023	2479	10/14/2029	10/14/2029	21.29	18.64	21.63	20.59	19.59	21.29	29.77	28.57	22.46	22.46	22.46	22.46	22.46	22.46	22.46	25.56	22.46	27.29	30.21	30.57	25.56	25.56	18.64	20.86
SPP South - Energy Price - 1H2023	2480	10/15/2029	10/15/2029	23.25	22.42	22.42	22.42	23.79	23.25	32.62	31.94	30.7	30.7	30.7	30.7	30.7	28.77	30.7	29.39	30.7	39.52	36.59	34.72	35.17	34.72	22.64	22.42
SPP South - Energy Price - 1H2023	2481	10/16/2029	10/16/2029	22.42	22.42	22.42	22.42	22.42	22.42	31.85	30.87	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	30.87	31.38	30.88	30.87	28.92	20.21	20.21
SPP South - Energy Price - 1H2023	2482	10/17/2029	10/17/2029	18.07	18.07	18.84	18.07	18.07	20.62	30.83	29.38	28.35	29.38	29.38	28.08	29.38	29.38	28.35	29.38	29.38	29.39	29.38	29.38	29.38	28.35	9.48	18.07
SPP South - Energy Price - 1H2023	2483	10/18/2029	10/18/2029	8.97	8.76	19.24	21.51	21.3	22.3	31.95	31.95	29.84	29.16	28.35	28.35	29.84	29.84	29.84	29.84	30.81	31.95	31.95	30.81	29.84	29.84	21.04	21.04
SPP South - Energy Price - 1H2023	2484	10/19/2029	10/19/2029	18.2	20.78	19.13	19.04	21.42	20.78	29.55	29.55	30.21	29.55	29.55	29.55	29.39	29.55	29.55	28.35	29.55	29.55	29.55	29.55	31.61	29.55	21.69	21.39
SPP South - Energy Price - 1H2023	2485	10/20/2029	10/20/2029	21.42	22.42	20.78	20.78	20.08	20.78	27.54	29.93	24.96	7.36	24.96	24.96	24.96	23.12	18.38	24.96	30.75	34.86	33.23	33.8	31.54	31.54	22.42	21.57
SPP South - Energy Price - 1H2023	2486	10/21/2029	10/21/2029	20.78	21.14	22.42	22.42	20.78	20.78	30.75	28.49	24.96	8.42	6.58	8.07	8.42	9.15	2.9	8.42	28.49	31.88	33.23	33.8	31.54	31.54	22.42	22.42
SPP South - Energy Price - 1H2023	2487	10/22/2029	10/22/2029	20.89	20.89	22.03	20.89	22.42	22.42	31.76	31.76	29.68	29.68	29.68	31.76	29.68	31.76	37.12	37.89	39.33	41.12	41.12	41.12	36.07	36.12	22.42	20.89
SPP South - Energy Price - 1H2023	2488	10/23/2029	10/23/2029	21.33	19.48	18.67	18.67	18.67	18.67	30.16	28.35	6.68	6.79	7.38	8.22	9.57	10.16	9.8	12.45	27.4	24.84	30.16	30.16	17.51	11.56	9.48	9.15
SPP South - Energy Price - 1H2023	2489	10/24/2029	10/24/2029	6.93	7.05	6.77	7.02	7.64	18.57	30.03	30.03	30.03	30.03	32.17	33.41	33.55	32.17	35.63	32.17	32.17	32.17	31.11	30.03	30.03	30.03	18.57	18.57

SPP South - Energy Price - 1H2023	2490	10/25/2029	10/25/2029	17.73	17.73	17.73	17.73	17.73	17.73	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	15.27	10.51	10.51
SPP South - Energy Price - 1H2023	2491	10/26/2029	10/26/2029	10.51	10.51	10.51	10.51	10.51	17.16	25.31	25.31	25.31	28.35	28.35	29.39	29.39	29.39	29.73	29.73	29.73	31.27	31.39	30.65	29.73	28.86	19.91	19.44
SPP South - Energy Price - 1H2023	2492	10/27/2029	10/27/2029	20.52	19.27	18.99	19.18	19.06	19.04	28.22	28.41	28.08	26.14	26.65	28.29	26.65	26.11	27.25	27.88	28.33	28.41	29.34	28.82	27.78	26.11	17.57	17.16
SPP South - Energy Price - 1H2023	2493	10/28/2029	10/28/2029	17.52	17.21	17.16	17.16	17.16	17.16	23.53	23.53	8.39	3.03	3.63	1.57	1.7	1.52	2.35	1.49	7.26	23.53	23.53	23.53	23.53	23.53	17.16	17.16
SPP South - Energy Price - 1H2023	2494	10/29/2029	10/29/2029	19.17	19.17	19.17	19.17	19.17	19.17	28.35	29.09	27.9	27.9	27.9	28.35	27.9	28.35	28.35	28.35	29.62	32.69	32.69	31.17	30.07	29.86	21.32	21.32
SPP South - Energy Price - 1H2023	2495	10/30/2029	10/30/2029	21.05	21.05	21.05	21.05	20.72	21.05	27.6	29.2	27.6	28.35	28.35	29.17	29.04	29.39	29.39	29.05	31.15	34.59	34.03	31.15	31.15	31.15	21.05	21.05
SPP South - Energy Price - 1H2023	2496	10/31/2029	10/31/2029	20.16	20.16	20.16	20.16	20.16	20.16	29.39	29.39	31.18	31.18	29.39	30.73	29.39	28.35	26.59	26.59	26.59	26.59	26.59	26.59	26.59	26.59	18.15	18.15
SPP South - Energy Price - 1H2023	2497	11/1/2029	11/1/2029	8.98	6.28	6.02	6.16	9.01	14.56	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	27.33	28.56	31.45	32.64	32.71	32.63	32.62	19.57	19.57
SPP South - Energy Price - 1H2023	2498	11/2/2029	11/2/2029	18.72	19.26	16.55	16.55	16.55	18.04	32.11	32.16	27.92	27.92	27.92	27.92	27.92	27.92	27.92	25	27.92	28.24	27.92	27.92	27.92	27.92	14.92	8.72
SPP South - Energy Price - 1H2023	2499	11/3/2029	11/3/2029	14.92	14.92	14.92	14.92	14.92	14.92	38.7	38.7	38.7	13.12	11.58	10.44	10.43	11.22	11.35	15.95	42.91	43.64	42.91	42.91	38.7	38.7	14.92	14.92
SPP South - Energy Price - 1H2023	2500	11/4/2029	11/4/2029	14.92	14.92	14.92	14.92	14.92	14.92	38.7	38.7	38.7	38.7	38.7	34	11.34	11.22	11.35	11.12	38.7	38.7	38.7	38.7	38.7	28.87	14.92	6.11
SPP South - Energy Price - 1H2023	2501	11/5/2029	11/5/2029	6.17	5.79	6.03	6.11	6.64	6.82	10.4	9.81	8.53	7.91	3.69	1.59	1.73	1.54	2.39	6.71	7.92	28.95	28.95	28.95	26.51	25.81	5.73	5.36
SPP South - Energy Price - 1H2023	2502	11/6/2029	11/6/2029	5.24	1.24	0.94	5.88	6.8	17.12	36.11	36.11	32.35	32.35	32.35	32.35	32.35	32.34	32.35	32.35	32.35	33.59	35.93	36.5	32.35	32.35	17.12	17.12
SPP South - Energy Price - 1H2023	2503	11/7/2029	11/7/2029	20.12	20.12	20.12	20.12	20.12	20.12	40.28	44.13	40.55	39.59	40.55	40.2	37.84	37.3	37.3	37.84	37.84	44.13	44.13	40.88	37.84	38.23	20.7	21.98
SPP South - Energy Price - 1H2023	2504	11/8/2029	11/8/2029	19.96	19.35	19.35	19.44	19.35	19.42	34.35	34.13	32.79	32.79	9.62	6.3	6.29	6.77	6.85	6.85	29.15	32.79	32.79	31.24	31.24	31.24	17.39	17.39
SPP South - Energy Price - 1H2023	2505	11/9/2029	11/9/2029	14.9	14.9	14.9	14.9	15.2	15.2	29.27	29.27	29.27	7.91	6.99	6.3	6.29	6.77	11.69	28.84	29.27	31.79	32.61	29.27	31.24	29.27	15.24	15.2
SPP South - Energy Price - 1H2023	2506	11/10/2029	11/10/2029	15.2	15.2	14.95	13.66	15.2	15.2	39.42	39.41	27.22	16.61	15.95	13.33	10.43	11.22	10.43	11.12	12.22	9.65	12.24	10.98	11.11	6.92	0.94	1.05
SPP South - Energy Price - 1H2023	2507	11/11/2029	11/11/2029	1.09	1.24	0.94	1.06	1.14	1.38	3.48	3.3	4.01	5.09	7.21	2.64	2.87	4.3	3.95	11.12	39.42	39.41	39.41	10.98	16.17	39.41	5.03	8.96
SPP South - Energy Price - 1H2023	2508	11/12/2029	11/12/2029	5.05	5.05	5.05	5.05	14.15	14.15	30.69	28.76	28.76	10.02	12.95	28.76	6.29	28.76	28.76	28.76	28.76	30.7	30.69	30.69	30.04	28.76	14.15	14.34
SPP South - Energy Price - 1H2023	2509	11/13/2029	11/13/2029	15.91	17.66	17.67	17.67	18.15	18.15	33.9	33.9	33.9	31.6	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.96	33.9	33.71	32.61	17.67	17.67
SPP South - Energy Price - 1H2023	2510	11/14/2029	11/14/2029	18.93	18.93	18.93	18.93	17.02	18.89	35.93	36.36	35.93	35.93	35.77	35.93	35.93	36.36	35.93	35.93	36.36	36.36	37.99	36.36	36.36	36.36	19.96	19.45
SPP South - Energy Price - 1H2023	2511	11/15/2029	11/15/2029	18.82	18.82	17.27	16.93	17.77	18.82	33.24	33.24	32.39	33.24	6.99	6.3	6.29	6.77	6.85	6.85	33.24	33.24	35.76	35.26	35.34	33.24	18.82	19.34
SPP South - Energy Price - 1H2023	2512	11/16/2029	11/16/2029	18.49	18.49	18.49	18.49	18.49	18.49	34.82	35.58	34.44	34.44	34.44	34.44	34.44	34.44	32.07	32.25	34.44	36.27	34.86	34.31	34.18	32.6	18	18.49
SPP South - Energy Price - 1H2023	2513	11/17/2029	11/17/2029	18	18	18	18.49	18.49	19.96	51.78	51.78	51.78	51.78	47.96	47.96	47.95	47.95	47.96	47.96	51.78	54.69	52.93	49.91	49.76	51.14	19.96	20.11
SPP South - Energy Price - 1H2023	2514	11/18/2029	11/18/2029	19.96	19.96	19.96	19.96	18.49	19.03	46.67	49.31	48.9	49.25	48.46	47.95	42.01	42.01	42.01	42.01	43.28	47.91	47.95	46.67	42.01	42.01	17.61	18
SPP South - Energy Price - 1H2023	2515	11/19/2029	11/19/2029	19.96	18.91	18.91	19.96	21.08	21.08	39.38	41.24	41.06	39.91	39.91	39.91	39.91	39.91	39.91	39.91	47.28	52.05	52.16	47.28	51.22	47.28	25.84	21.68
SPP South - Energy Price - 1H2023	2516	11/20/2029	11/20/2029	21.24	21.24	21.24	20.66	21.24	24.12	41.49	41.8	41.37	42.63	43.22	43.37	43.16	43.06	43.07	42.99	43.07	43.58	42.96	42.13	41.1	40.92	24.45	21.24
SPP South - Energy Price - 1H2023	2517	11/21/2029	11/21/2029	20.52	20.7	20.7	20.7	20.21	20.7	40.38	40.63	40.36	41.58	42.17	42.43	38.47	38.47	38.47	38.47	41.82	42.33	45.51	40.99	38.47	38.47	20.77	20.7
SPP South - Energy Price - 1H2023	2518	11/22/2029	11/22/2029	20.2	20.2	19.99	19.96	20.2	19.96	33.99	34.53	33.99	33.99	33.99	31.24	33.99	32.39	31.24	33.99	33.99	33.99	33.99	33.99	33.99	33.99	18.14	19.96
SPP South - Energy Price - 1H2023	2519	11/23/2029	11/23/2029	16.56	16.56	16.56	16.56	16.56	12.76	20.93	28.19	15.1	15.53	8.19	7.52	7.17	1.85	7.26	6.97	6.42	18.17	29.48	29.55	31.46	25.66	15.09	7.26
SPP South - Energy Price - 1H2023	2520	11/24/2029	11/24/2029	6.94	15.09	16.56	15.32	16.56	16.56	42.96	42.96	39.52	14.69	16.88	42.02	11.88	42.96	42.96	17.16	42.96	42.96	47.75	42.96	42.96	42.96	15.64	15.24
SPP South - Energy Price - 1H2023	2521	11/25/2029	11/25/2029	16.56	15.24	16.56	15.32	13.49	16.56	42.96	42.96	42.96	39.52	13.58	42.96	21.56	36.64	12.04	3.22	42.96	44.4	42.96	42.96	42.96	42.96	18.41	16.56
SPP South - Energy Price - 1H2023	2522	11/26/2029	11/26/2029	16.49	16.86	16.49	16.49	18.33	18.33	31.64	34.97	32.39	33.95	32.39	31.24	34.96	33.95	34.96	32.39	33.95	34.96	31.97	31.24	33.12	31.24	18.33	18.33
SPP South - Energy Price - 1H2023	2523	11/27/2029	11/27/2029	16.59	16.59	16.59	16.59	16.59	17.24	32.1	31.24	30.57	30.57	30.57	30.57	30.57	30.57	30.57	30.57	30.74	33.09	34.24	33.27	35.14	35.14	16.59	18.44
SPP South - Energy Price - 1H2023	2524	11/28/2029	11/28/2029	16.59	17.17	17.17	18.26	17.17	16.59	31.44	34.6	32.39	31.24	30.58	30.58	30.58	30.58	30.58	30.58	31.3	35.15	35.15	35.15	35.15	35.15	19.96	19.96
SPP South - Energy Price - 1H2023	2525	11/29/2029	11/29/2029	20	20	20	20	20	20	37.65	37.65	34.35	34.31	34.35	37.65	37.65	37.65	34.14	37.25	36.71	37.81	37.65	39.05	37.65	38.14	20.56	20.56
SPP South - Energy Price - 1H2023	2526	11/30/2029	11/30/2029	20.35	20.35	20.49	20.39	19.96	19.4	35.36	36.05	36.15	33.39	33.26	33.81	34.43	34.43	33.58	33.26	38.21	43.54	43.79	43.48	41.03	41.07	24.78	21.82
SPP South - Energy Price - 1H2023	2527	12/1/2029	12/1/2029	36.67	36.83	37.57	37.35	37.04	39.22	48.53	49.94	42.71	40.78	38.95	39.66	39.66	38.95	39.66	39.66	40.27	48.62	48.62	44.45	40.14	39.66	35.6	34.97
SPP South - Energy Price - 1H2023	2528	12/2/2029	12/2/2029	34.97	33.73	33.73	33.73	33.73	31.94	37.57	37.57	35.58	35.58	35.58	35.58	35.58	35.58	35.58	35.58	37.57	40.79	40.79	39.66	39.66	39.66	31.94	33.73
SPP South - Energy Price - 1H2023	2529	12/3/2029	12/3/2029	31.67	31.67	31.66	31.66	31.67	31.67	34.11	34.11	33.56	31.89	33.46	32.05	34.11	34.11	34.11	34.77	40.32	43.75	45.06	42.54	41.94	40.71	36.29	36.29
SPP South - Energy Price - 1H2023	2530	12/4/2029	12/4/2029	36.8	36.8	36.8	36.8	36.8	43.87	44.9	45.66	45.07	45.47	43.05	40.62	37.65	35.84	36.61	36.06	40.92	40.92	40.92	40.92	40.92	40.92	36.8	35.78
SPP South - Energy Price - 1H2023	2531	12/5/2029	12/5/2029	36.75	36.75	36.75	36.75	36.75	37.8	46.14	46.65	46.53	41.89	44.13	44.13	41.89	39.18	41.31	41.31	41.89	46.83	46.83	48.05	46.83	46.83	44.38	37.13
SPP South - Energy Price - 1H2023	2532	12/6/2029	12/6/2029	38.98	39.47	39.47	41.83	39.47	38.37	43.5	43.5	43.5	43.5	43.5	38.67	38	38.29	38.79	39.85	43.5	45.13	43.5	43.5	43.5	43.5	39.47	37.47
SPP South - Energy Price - 1H2023	2533	12/7/2029	12/7/2029	34.94	34.97	34.97	34.94	34.32	33.83	39.55	40.08	35.44	34.04	33.81	33.06	33.06	31.89	33.06	33.81	33.96	34.52	33.96	34	33.82	33.87	31.36	31.36
SPP South - Energy Price - 1H2023	2534	12/8/2029	12/8/2029	31.36	31.36	31.36	31.36	31.36	31.36	34.93	37.57	37.57	34.93	34.93	34.93	34.93	34.93	34.93	37.57	37.57	38.92	38.92	38.92	38.92	34.93	31.36	31.36
SPP South - Energy Price - 1H2023	2535	12/9/2029	12/9/2029	31.36	31.36	31.36	31.36	31.36	31.36	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	37.57	38.92	38.92	38.92	38.92	37.57	34.63	33.73
SPP South - Energy Price - 1H2023	2536	12/10/2029	12/10/2029	31.13	33.73	31.35	34.68	34.21	33.73	36.35	39.17	35.22	33.86	33.86	33.86	33.86	33.86	33.32	33.86	33.86	34.96	35.09	33.86	33.86	33.86	31.13	31.12
SPP South - Energy Price - 1H2023	2537	12/11/2029	12/11/2029	30.46	30.46	30.23	30.46	30.46	30.46	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	33.22	34.47	39.06	39.06	39.06	38.57	34.88	33.92
SPP South - Energy Price - 1H2023	2538	12/12/2029	12/12/2029	33.16	33.51	33.55	33.37	33.16	33.16	37.82	37.82	33.94	32.57	32.57	32.57	32.57	32.57	32.57	32.57	33.66	37.82	40.88	39.8	40.63	38.3	34.97	33.16
SPP South - Energy Price - 1H2023	2539	12/13/2029	12/13/2029	31.63	31.84	31.27	28.12	28.12	28.12	30.97	31.89	30.97	30.97	30.97	30.97	30.97	30.97	30.97	30.97	31.28	31.82	31.79	32.3	30.97	31.82	31.27	31.27
SPP South - Energy Price - 1H2023	2540	12/14/2029	12/14/2029	29.58	29.58	29.58	29.58	29.58	29.58	33.06	34.72	34.35	34.72	34.35	34.37	34.35	31.94	31.94	34.35	34.72	38.38	38.26	38.09	36.92	36.96	36.01	34.51
SPP South - Energy Price - 1H2023	2541	12/15/2029	12/15/2029	34.23	33.73	33.73	33.73	33.68	33.45	37.92	38.08	38.27	39.48	38.49	37.28	37.02	36.71	37.44	38.15	40.11	42.65	42.27	41.42	40.59	38.91	34.69	34.51
SPP South - Energy Price - 1H2023	2542	12/16/2029	12/16/2029	33.2	32.76	32.57	30.38	33.46	32.29	37.57	37.57	38.95	39.68	38.95	38.6	36.67	36.13	36.89	35.65	37.57	40.11	40.11	40.11	39.68	39.68	35.04	34.97
SPP South - Energy Price - 1H2023	2543	12/17/2029	12/17/2029	34.23	35.05	34.79	34.33	33.92	33.74	35.13	36.76	37.36	35.18	34.99	34.62	31.89	31.89	31.89	31.89	33.63	35.01	35.01	35.01	35.01	37.34	35.85	33.73
SPP South - Energy Price - 1H2023	2544	12/18/2029	12/18/2029	30.94	30.83	30.94	30.69	27.11	27.11	29.99	29.99	29.99	29.99	29.99	14.42	7.32	7.05	7.42	28.01	29.99	30.8	31.89	33.51	31.31	31.92	30.12	30.94
SPP South - Energy Price - 1H2023	2545	12/19/2029	12/19/2029	30.67	32.74	30.32	29.27	29.27	30.32	33.31	34.61	33.64	33.31	33.31	33.06	31.89	30.64	28.95	28.62	30.64	33.19	33.06	33.63	33.31	33.64	33.73	29.27
SPP South - Energy Price - 1H2023	2546	12/20/2029	12/20/2029	33.73	32.32	33.73	31.53	33.73	33.17	34.94	35.02	35.02	33.31	29.79	29.79	29.79	29.79	29.79	29.79	29.89	33.06	31.37	30.15	31.15	32.13	29.88	26.91
SPP South - Energy Price - 1H2023	2547	12/21/2029	12/21/2029	29.73	26.78	29.73	26.78	26.78	29.73	31.89	33.64	34.5	34.5	31.89	33.06	31.89	31.89	31.89	31.89	31.89	33.64	33.06	34.51	33.86	32.88	31.41	31.17
SPP South - Energy Price - 1H2023	2548	12/22/2029	12/22/2029	30.54	30.49	30.55	33.03	31.51	32.29	37.92	37.74	35.95	34.99	33.12	33.12	31.31	29.83	29.83	29.83	31.86	34.03	34.36	33.12	34.03	34.03	30.55	29.73
SPP South - Energy Price - 1H2023	2549	12/23/2029	12/23/2029	29.73	29.73	29.73	29.73	30.54	29.25	33.12	34.03	33.12	33.12	32.43	32.12	29.83	29.83	29.83	29.83	33.12	37.57	38.95	38.95	37.57	37.57	34.97	34.97
SPP South - Energy Price - 1H2023	2550	12/24/2029	12/24/2029	29.03	29.03	29.03	29.25	29.03	29.03	33.88	35.12	34.13	33.9	31.84	31.84	33.63	32.57	33.63	33.4	35.18	37.23	38.18	37.44	36.99	34.98	33.19	32.3
SPP South - Energy Price - 1H2023	2551	12/25/2029	12/25/2029	32.3	32.3	32.3	33.19	33.19	33.2	36.99	37.44	37.78	38.63	37.7	37.51	37.21	36.99	36.99	36.99	34.07	36.99	37.03	36.86	33.73	33.6	32.3	32.3
SPP South - Energy Price - 1H2023	2552	12/26/2029	12/26/2029	27.45	24.77	24.77	24.77	27.45	27.45	31.89	31.89	30.7	28.95	27.73	27.73	27.73	27.73	27.73	27.73	31.89	32.6	32.12	31.89	32.3	31.89	28.19	27.45
SPP South - Energy Price - 1H2023	2553	12/27/2029	12/27/2029	30.91	30.91	30.91	33.73	34.43	34.43	35.17	36.29	34.18	33.39	33.39	33.77	33.39	33.66	34.72	34.51	39.06	39.57	42.85	42.45	40.75	39.06	34.43	34.43
SPP South - Energy Price - 1H2023	2554	12/28/2029	12/28/2029	33.73	33.73	33.73	33.73	33.73	33.29	37.96	37.96	37.96	34.93	32.42	32.42	32.42	32.42	33.64	34.97	35.24	37.96	37.96	36.81	33.18	32.42	29.91	29.91
SPP South - Energy Price - 1H2023	2555	12/29/2029	12/29/2029	29.91	29.91	29.91	29.91	29.91	29.91	33.32	33.32	37.09	37.09	36.57	33.32	33.32	33.64	37.09	37.09	37.09	37.09	37.09	37.09	37.09	33.32	29.91	29.91
SPP South - Energy Price - 1H2023	2556	12/30/2029	12/30/2029	29.91	29.91	29.91	29.91	29.91	29.91	33.32	33.32	33.32	33.32	10.74	9.61	8.79	8.21	7.75	9.86	9.86	33.32	33.32	33.32	33.32	33.32	29.91	29.91
SPP South - Energy Price - 1H2023	2557	12/31/2029	12/31/2029	28.37	28.37	28.37	28.37	28.37	28.37	33.13	33.57	33.13	30.94	30.94	30.94	30.94	30.94	31.08	31.89	33.2	34.83	36.26	35.02	36.26	33.06	31.54	31.54
SPP South - Energy Price - 1H2023	2558	1/1/2030	1/1/2030	28	27.96	28.61	28.61	29.4	29.4	37.67	37.67	37.96	37.86	37.67	37.67	37.67	37.22	37.22	37.22	35.46	37.54	37.56	37.55	34.29	34.02	27.04	28.61
SPP South - Energy Price - 1H2023	2559	1/2/2030	1/2/2030	27.04	24.97	24.97	24.97	24.97	27.73	34.76	35.43	35.13	33.24	31.22	31.22	31.22	31.22	31.5	32.28	35.38	35.51	36.05	34.23	34.23	33.24	28.53	27.66
SPP South - Energy Price - 1H2023	2560	1/3/2030	1/3/2030	24.68	24.68	24.68	27.29	28.19	27.43	32.92	33.94	30.9	30.9	30.9	30.9	30.9	30.9	33.66	33.82	35.3	35.92	36.33	36.33	35.92	34.38	28.19	28.19
SPP South - Energy Price - 1H2023	2561	1/4/2030	1/4/2030	31.14	30.04	30.04	30.04	30.04	30.04	35.64	41.22	35.53	35.53	35.53	35.53	35.53	35.53	35.53	35.53	35.53	35.65	35.66	35.64	35.53	35.53	28.91	28.91
SPP South - Energy Price - 1H2023	2562	1/5/2030	1/5/2030	28.91	28.91	28.91	28.91	28.91	28.91	39.68	39.76	42.74	41.23	41.23	41.23	41.23	41.23	41.23	41.23	41.23	44.25	43.99	42.74	41.23	41.23	30.04	28.91
SPP South - Energy Price - 1H2023	2563	1/6/2030	1/6/2030	28.91	28.91	28.91	28.91	28.91	28.91	39.68	39.68	39.68	39.68	38.8	37.36	39.57	10.82	10.25	39.68	39.68	41.23	41.23	40.26	39.68	39.68	28.91	28.91
SPP South - Energy Price - 1H2023	2564	1/7/2030	1/7/2030	27.46	26.02	26.02	26.02	26.02	26.02	32.37	32.37	33.8	32.37	33.03	32.37	32.37	32.28	6.9	29.14	32.28	32.37	32.37	32.37	32.37	32.37	26.02	26.02
SPP South - Energy Price - 1H2023	2565	1/8/2030	1/8/2030	28.47	25.59	25.59	28.47	28.47	28.47	37.07	37.07	35.1	33.87	31.9	34.07	34.01	34.01	34.01	34.09	37.07	39.89	40.8	40.51	38.11	37.51	32.2	29.26
SPP South - Energy Price - 1H2023	2566	1/9/2030	1/9/2030	28.53	28.53	28.53	28.83	28.53	28.83	36.28	36.28	36.28	34.19	34.23	33.67	33.1	32.97	31.22	33.38	33.84	36.28	36.71	36.28	36.28	34.3	27.76	27.76
SPP South - Energy Price - 1H2023	2567	1/10/2030	1/10/2030	27.43	27.43	27.43	27.64	27.43	27.58	34.98	35.47	35.46	30.9	30.9	30.9	30.9	30.96	30.9	30.9	30.9	35.94	36.33	38.44	36.31	35.92	27.43	27.43
SPP South - Energy Price - 1H2023	2568	1/11/2030	1/11/2030	25.57	25.9	26.41	26.92	27.37	27.37	34.03	34.35	34.16	34.08	34.38	33.83	33.46	33.14	32.28	32.28	33.14	33.32	34.08	34.08	33.46	33.46	26.54	24.71
SPP South - Energy Price - 1H2023	2569	1/12/2030	1/12/2030	22.45	24.9	24.9	25.57	24.9	25.57	35.1	35.1	34.18	34.18	34.18	34.18	34.18	34.18	34.18	34.18	34.18	35.1	36.87	37.28	35.41	35.1	24.9	25.57
SPP South - Energy Price - 1H2023	2570	1/13/2030	1/13/2030	24.9	24.9	24.9	24.9	22.45	22.45	30.82	34.18	34.18	30.82	11.51	10.24	9.36	8.75	8.26	8.4	30.82	33.44	30.82	30.82	30.82	30.82	22.45	22.45
SPP South - Energy Price - 1H2023	2571	1/14/2030	1/14/2030	28	29.48	28.76	29.54	29.54	31.14	36.03	49.18	45.74	41.31	41.31	41.31	39.14	38	37.82	37.82	37.82	44.58	48.79	48.9	47.56	48.43	39.22	37.65
SPP South - Energy Price - 1H2023	2572	1/15/2030	1/15/2030	35.38	35.87	32.14	32.14	32.14	41.71	52.77	54.33	53.7	53.32	52.99	51.74	47.47	45.05	47.14	46.76	40.68	40.68	38.42	38.42	38.42	38.41	28.04	28.04

SPP South - Energy Price - 1H2023	2573	1/16/2030	1/16/2030	27.3	30.04	29.97	29.97	31.14	31.27	39.72	39.72	39.72	37.59	37.59	37.59	37.59	37.59	37.59	37.59	39.72	40.27	48.26	42.63	39.72	39.72	31.27	31.22
SPP South - Energy Price - 1H2023	2574	1/17/2030	1/17/2030	30.53	30.38	30.38	30.53	30.53	30.38	47.06	50.78	47.06	38.74	38.74	36.75	39.29	39.76	46.1	42.41	45.46	50.2	50.53	50.1	47.06	38.74	30.38	30.38
SPP South - Energy Price - 1H2023	2575	1/18/2030	1/18/2030	31.04	31.04	31.04	31.04	31.04	31.04	41.65	41.65	41.65	41.36	48.09	47.1	46.25	39.47	39.47	39.47	39.47	41.41	40.66	39.47	39.47	36.52	31.04	30.04
SPP South - Energy Price - 1H2023	2576	1/19/2030	1/19/2030	30.04	30.04	30.04	30.04	27.11	27.11	37.21	37.21	41.25	41.23	39.73	37.21	42.61	42.61	41.23	41.23	38.72	42.61	47.27	42.74	42.6	42.61	31.04	31.14
SPP South - Energy Price - 1H2023	2577	1/20/2030	1/20/2030	31.04	31.04	31.04	31.04	31.04	31.04	42.6	42.61	41.23	41.23	41.23	41.23	41.23	41.23	42.17	42.61	42.61	46.44	51.58	52.07	50.73	42.74	31.04	31.04
SPP South - Energy Price - 1H2023	2578	1/21/2030	1/21/2030	30.89	30.89	30.89	30.89	30.89	30.89	39.3	48.08	39.3	36.37	36.37	33.23	33.23	36.12	6.46	32.25	32.28	33.8	36.37	36.12	36.37	36.12	26.98	26.98
SPP South - Energy Price - 1H2023	2579	1/22/2030	1/22/2030	31.12	9.35	16.96	31.12	30.67	31.12	38.81	40.96	40.6	39.43	35.64	35.98	32.75	36.12	37.75	34.63	40.96	44.64	44.64	44.64	46.06	46.17	36.94	35.75
SPP South - Energy Price - 1H2023	2580	1/23/2030	1/23/2030	37.59	37.46	37.56	36.94	32.69	36.94	43.37	46.67	46.67	42.71	41.6	38.17	35.53	34.58	32.28	38.17	35.76	42.7	42.71	42.71	42.71	42.71	32.69	32.69
SPP South - Energy Price - 1H2023	2581	1/24/2030	1/24/2030	29.31	29.31	29.31	29.31	29.31	29.31	38.96	42.31	38.96	38.96	38.96	38.96	38.96	38.96	38.96	32.28	38.56	38.96	42.31	42.31	42.31	38.96	30.04	29.31
SPP South - Energy Price - 1H2023	2582	1/25/2030	1/25/2030	29.1	29.1	29.1	29.1	29.1	29.1	38.72	38.72	33.45	9.66	8.96	8.58	7.33	6.85	8.86	7.56	6.32	41.93	53.02	52.5	54.74	48.29	33.38	33.38
SPP South - Energy Price - 1H2023	2583	1/26/2030	1/26/2030	32.94	32.26	33.38	33.38	33.38	33.38	45.82	48.13	42.74	41.23	38.8	38.8	38.21	8.75	8.26	8.4	39.94	39.94	46.7	45.75	45.82	45.82	33.38	31.14
SPP South - Energy Price - 1H2023	2584	1/27/2030	1/27/2030	33.26	33.38	33.38	33.38	33.38	33.38	45.82	51.65	45.82	45.81	41.31	41.23	41.43	41.31	39.94	14.63	19.74	45.76	45.82	45.82	45.7	45.7	31.14	30.04
SPP South - Energy Price - 1H2023	2585	1/28/2030	1/28/2030	30.04	30.04	30.04	30.04	28.92	28.92	38.8	38.8	37.14	37.14	37.14	36.64	35.53	34.17	36.77	37.14	37.14	37.14	38.68	37.8	37.14	37.14	28.92	28.92
SPP South - Energy Price - 1H2023	2586	1/29/2030	1/29/2030	27.79	27.79	28.41	30.04	30.04	30.04	38.82	45.6	45.99	39.02	35.89	35.89	35.55	34.82	32.28	33.45	35.33	35.55	35.55	35.55	35.55	35.55	27.79	27.1
SPP South - Energy Price - 1H2023	2587	1/30/2030	1/30/2030	25.49	26.04	27.17	29.61	29.91	30.81	35.21	34.07	34.07	33.89	33.89	33.98	33.89	33.89	32.99	33.98	33.89	34.1	39.64	36.68	35.28	38.77	32.91	31.09
SPP South - Energy Price - 1H2023	2588	1/31/2030	1/31/2030	29.13	29.05	29.05	29.05	29.05	29.05	38.63	42.45	36.84	35.43	34.07	34.22	33.95	34.05	34.16	34.22	36.84	37.28	41.83	41.34	41.17	40.46	31.05	30.04
SPP South - Energy Price - 1H2023	2589	2/1/2030	2/1/2030	31.97	30.6	30.38	30.38	30.38	32.48	45.62	50.53	44.91	43.3	43.25	39.05	31.95	31.68	33.44	29.95	5.68	43.05	43.3	43.3	38.4	43.3	30.38	27.95
SPP South - Energy Price - 1H2023	2590	2/2/2030	2/2/2030	26.71	27.67	27.95	30.38	30.38	30.38	33.01	32.75	34.02	30.2	30.41	30.44	5.34	5.29	5.24	5.24	5.04	28.06	34.02	32.9	34.02	32.89	30.38	30.38
SPP South - Energy Price - 1H2023	2591	2/3/2030	2/3/2030	30.38	30.38	30.39	32.01	33.02	30.38	37.96	38.09	38.09	38.09	37.89	37.96	35.12	34.02	34.02	34.02	34.02	34.02	34.92	34.56	34.28	34.02	30.38	30.38
SPP South - Energy Price - 1H2023	2592	2/4/2030	2/4/2030	23.24	23.24	23.24	25.06	25.06	23.24	34.08	34.18	34.08	34.08	23.37	6.19	6.03	20.67	3.95	1.23	3.66	19.02	26.92	27.52	31.68	32.83	23.23	8.14
SPP South - Energy Price - 1H2023	2593	2/5/2030	2/5/2030	11.66	21.6	21.6	21.6	21.6	21.6	31.97	33.64	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	36.75	34.7	31.97	22.42	22.67
SPP South - Energy Price - 1H2023	2594	2/6/2030	2/6/2030	20.79	20.5	20.5	20.5	20.5	20.79	32.81	37.54	35.13	35.13	34.34	33.54	33.1	32.99	32.21	31.68	31.27	32.82	35.13	35.53	35.53	37.04	24.74	23.8
SPP South - Energy Price - 1H2023	2595	2/7/2030	2/7/2030	24.5	23.8	23.8	23.78	23.78	23.78	34.26	35.25	35.6	34.78	34.04	33.55	31.68	31.68	31.68	31.68	31.68	33.26	33.63	33.63	34.43	36.42	24.74	24.44
SPP South - Energy Price - 1H2023	2596	2/8/2030	2/8/2030	23.83	23.5	23.82	23.82	23.83	23.88	40.23	40.88	36.06	36.06	36.06	35.43	34.52	32.75	32.25	31.68	31	35.65	35.65	36.06	36.06	36.06	25.97	24.77
SPP South - Energy Price - 1H2023	2597	2/9/2030	2/9/2030	24.8	23.18	23.26	23.18	21.96	23	27.48	28.06	26.68	24.04	23.35	23.35	23.39	23.35	23.35	23.35	5.04	12.07	25.97	25.97	24.51	23.35	20.85	20.85
SPP South - Energy Price - 1H2023	2598	2/10/2030	2/10/2030	20.85	20.23	20.85	20.85	20.85	20.85	23.35	25.97	25.97	25.97	25.97	25.97	25.97	23.35	23.35	23.36	23.89	25.97	26.68	26.68	25.97	24.35	20.85	20.85
SPP South - Energy Price - 1H2023	2599	2/11/2030	2/11/2030	21.35	21.33	21.94	21.94	21.94	21.94	32.23	34.03	31.68	31.68	30.61	29.59	29.59	28.8	25.23	29.59	29.57	32.55	33.51	34.03	34.03	32.14	21.94	21.94
SPP South - Energy Price - 1H2023	2600	2/12/2030	2/12/2030	21.5	22.16	22.16	22.16	22.16	22.16	33.55	34.69	31.92	29.84	29.84	29.84	8.07	5.97	5.91	5.91	5.68	29.84	30.67	29.84	30.21	29.84	19.95	19.95
SPP South - Energy Price - 1H2023	2601	2/13/2030	2/13/2030	20.41	20.41	20.41	7.23	20.41	20.41	30.43	31.45	30.43	25.03	1.09	6.19	5.69	1.13	5.69	1.23	5.68	30.43	34.79	35.39	34.99	35.39	24.74	23.3
SPP South - Energy Price - 1H2023	2602	2/14/2030	2/14/2030	22.87	22.45	21.22	22.49	22.45	23.07	33.31	35.08	30.17	31.75	31.19	31.58	31.26	30.17	30.17	30.17	30.17	30.17	32.8	33.96	33.55	33.05	21.74	20.21
SPP South - Energy Price - 1H2023	2603	2/15/2030	2/15/2030	19.55	19.55	19.55	19.55	19.55	22.3	31.4	33.51	30.71	29.72	29.33	29.33	29.33	26.73	29.33	26.98	25.45	29.33	30.39	29.97	29.33	29.33	19.55	19.55
SPP South - Energy Price - 1H2023	2604	2/16/2030	2/16/2030	19.55	19.55	19.55	19.55	20.28	20.1	24.03	25.24	24.32	23.68	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	19.55	19.55
SPP South - Energy Price - 1H2023	2605	2/17/2030	2/17/2030	19.55	19.55	19.55	19.55	19.55	19.55	22.62	24.32	22.01	23.15	21.9	21.9	21.9	21.9	21.9	21.9	21.9	22.12	23.59	24.98	25.6	25.65	22.3	21.71
SPP South - Energy Price - 1H2023	2606	2/18/2030	2/18/2030	25.06	25.23	25.23	25.23	25.23	25.23	38.3	38.89	41.44	40.95	40.48	39.65	38.8	38.3	38.3	36.93	38.3	39.3	39.02	38.8	38.3	38.3	25.06	22.65
SPP South - Energy Price - 1H2023	2607	2/19/2030	2/19/2030	22.3	23.83	22.3	22.37	22.86	24.83	33.7	34.92	34.42	32.96	33.58	28.83	21.78	29.02	1.08	24.01	30.27	32.78	32.96	33.77	32.96	32.96	23.27	22.3
SPP South - Energy Price - 1H2023	2608	2/20/2030	2/20/2030	24.45	24.45	24.45	24.45	24.45	24.45	35.74	35.74	31.68	24.14	30.61	20.72	6.03	1.13	3.94	1.23	1.13	8.54	32.81	35.74	35.74	35.71	24.45	24.45
SPP South - Energy Price - 1H2023	2609	2/21/2030	2/21/2030	23.28	23.28	23.28	23.28	23.28	23.28	34.22	34.22	31.68	31.99	30.78	1.16	23.22	1.13	30.68	30.81	30.43	34.22	34.22	34.98	35	35	25.06	24.63
SPP South - Energy Price - 1H2023	2610	2/22/2030	2/22/2030	24.63	24.63	23.1	24.63	24.63	24.63	36.22	33.99	34.2	33.37	31.65	6.19	6.03	1.13	5.91	5.91	6.19	29.73	32.74	32.74	32.74	33.43	22.13	22.13
SPP South - Energy Price - 1H2023	2611	2/23/2030	2/23/2030	22.13	22.13	22.13	22.13	22.13	22.13	25.37	27.59	26.46	24.78	24.78	24.78	24.78	5.29	24.78	24.78	24.78	25	26.34	25.25	26.45	25.83	23.24	22.84
SPP South - Energy Price - 1H2023	2612	2/24/2030	2/24/2030	22.13	22.7	22.13	22.22	22.13	22.16	25.86	26.61	26.47	24.78	24.78	25	24.78	3.4	3.49	5.24	1	23.05	24.78	24.78	24.78	24.78	22.13	22.13
SPP South - Energy Price - 1H2023	2613	2/25/2030	2/25/2030	20.58	20.58	20.58	20.58	21.22	22.87	33.53	34.7	32.72	32.49	32.31	32.35	31.68	31.68	31.68	31.8	33.19	34.73	35.24	35.24	34.43	32.73	22.87	21.3
SPP South - Energy Price - 1H2023	2614	2/26/2030	2/26/2030	23.88	23.88	23.88	23.88	23.88	23.88	34.79	36.55	33.04	31.88	31.88	31.88	31.68	31.88	31.68	29.33	31.68	28.71	31.88	31.88	31.68	31.88	21.46	21.46
SPP South - Energy Price - 1H2023	2615	2/27/2030	2/27/2030	20.15	20.15	20.15	20.15	20.15	20.9	33.56	34	32.01	30.18	30.18	30.18	6.54	7.09	6.82	7.09	6.95	28.67	30.18	30.18	30.18	30.18	20.14	20.14
SPP South - Energy Price - 1H2023	2616	2/28/2030	2/28/2030	10.85	9.19	20.14	7.88	20.33	20.69	30.88	30.88	30.88	30.88	30.88	28.41	14.1	30.88	30.88	30.88	28.41	30.88	31.2	32.65	35.41	32.65	23.64	23
SPP South - Energy Price - 1H2023	2617	3/1/2030	3/1/2030	15.51	15.51	14.71	14.71	14.71	15.51	31.46	33.17	32.37	32.15	32.16	32.47	31.98	31.54	31.3	30.49	30.49	30.64	32.06	31.45	30.49	30.49	14.18	14.18
SPP South - Energy Price - 1H2023	2618	3/2/2030	3/2/2030	14.18	14.18	14.18	14.18	14.18	14.18	38.31	27.81	1.36	1.28	1.35	1.24	1.42	1.29	1.48	1.44	1.39	8.86	38.31	38.31	33.95	12.07	5.51	13.23
SPP South - Energy Price - 1H2023	2619	3/3/2030	3/3/2030	14.18	14.18	14.18	14.18	14.18	14.18	38.31	38.31	30.2	8.86	8.17	1.24	1.42	1.29	9.03	9.38	9.2	8.86	28.86	37.99	28.86	27.29	9.83	9.83
SPP South - Energy Price - 1H2023	2620	3/4/2030	3/4/2030	15.12	13.91	15.12	13.91	15.12	15.12	30.03	28.63	6.38	22.2	24.13	25.67	25.67	29.67	29.67	28.33	25.81	28.63	32.27	32.27	32.27	32.27	15.12	15.12
SPP South - Energy Price - 1H2023	2621	3/5/2030	3/5/2030	13.78	6.82	6.56	13.78	13.78	13.78	28.63	28.63	10.51	6.19	5.58	0.85	5.73	6.01	6.16	6.41	6.05	6.05	27.76	29.73	29.73	29.73	13.78	13.78
SPP South - Energy Price - 1H2023	2622	3/6/2030	3/6/2030	16.37	16.37	16.37	16.37	16.37	16.37	35.65	35.41	34.61	31.29	32.93	34.61	34.61	34.61	31.37	34.61	34.61	35.17	37.57	38.58	35.17	35.56	16.37	16.37
SPP South - Energy Price - 1H2023	2623	3/7/2030	3/7/2030	16.08	16.08	14.74	15.51	15.58	16.08	32.57	32.58	35.3	33.28	32.07	31.55	31.55	31.55	31.55	6.41	6.58	28.63	32.97	32.8	32.57	36.15	16.08	16.08
SPP South - Energy Price - 1H2023	2624	3/8/2030	3/8/2030	14.57	14.57	14.57	14.57	15.51	15.51	32.62	32.61	29.96	28.45	28.45	28.45	28.45	28.45	26.02	26.09	28.45	28.45	29.96	29.96	28.45	28.45	13.1	13.1
SPP South - Energy Price - 1H2023	2625	3/9/2030	3/9/2030	13.1	13.1	13.1	13.1	13.1	13.1	35.38	35.38	30.72	6.8	6.57	1.24	35.38	35.38	35.38	35.38	39.35	39.35	41.92	41.92	41.92	39.35	13.1	13.1
SPP South - Energy Price - 1H2023	2626	3/10/2030	3/10/2030	13.1	13.1	13.1	13.1	13.1	14.24	39.35	38.46	35.38	35.38	35.38	35.38	35.38	10.07	9.03	9.38	35.38	39.35	39.35	38.29	35.38	35.38	13.1	13.1
SPP South - Energy Price - 1H2023	2627	3/11/2030	3/11/2030	12.23	12.23	4.1	3.97	12.23	12.23	26.26	26.21	26.21	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	23.42	25.52	26.2	26.2	26.2	5.51	4.01
SPP South - Energy Price - 1H2023	2628	3/12/2030	3/12/2030	12.37	12.37	6.16	12.37	12.37	13.74	29.67	27.54	27.43	27.01	27.37	27.42	27.45	27.27	27.57	27.73	27.36	27.87	28.63	29.57	27.93	27.93	13.63	13.49
SPP South - Energy Price - 1H2023	2629	3/13/2030	3/13/2030	13.77	12.57	12.57	12.57	12.57	12.96	28.14	27.74	27.62	26.84	27.53	28.11	27.63	26.84	27.6	28.63	28.25	28.63	31.47	31.47	31.37	28.81	13.96	13.96
SPP South - Energy Price - 1H2023	2630	3/14/2030	3/14/2030	14.51	13.64	14.51	14.85	14.85	15.47	33.24	33.15	32.01	30.43	29.15	28.3	30.15	30.43	30.43	30.03	30.29	28.3	29.54	28.3	29.79	28.97	13.34	13.34
SPP South - Energy Price - 1H2023	2631	3/15/2030	3/15/2030	13.74	13.42	13.39	13.51	13.37	12.53	28.21	27.92	28.92	28.62	28.74	30.79	29.98	29.77	28.81	29.31	29.74	30.28	29.76	29.98	28.63	26.77	12.53	12.53
SPP South - Energy Price - 1H2023	2632	3/16/2030	3/16/2030	12.53	12.53	12.53	12.53	12.53	12.53	33.85	33.85	33.85	9.06	1.35	1.24	1.42	1.29	1.48	1.44	9.2	33.3	33.85	33.85	33.85	33.85	12.53	12.53
SPP South - Energy Price - 1H2023	2633	3/17/2030	3/17/2030	12.53	12.53	12.53	12.53	12.53	12.53	37.61	37.61	40.77	37.61	37.61	37.61	35.28	33.85	35.46	33.85	33.85	34.55	33.85	36.8	33.85	33.85	12.53	13.65
SPP South - Energy Price - 1H2023	2634	3/18/2030	3/18/2030	14.01	13.44	13.44	13.44	14.28	14.67	30.42	28.53	30.95	30.71	30.16	29.94	28.53	30.16	30.3	30.16	28.53	28.53	28.53	28.53	28.53	28.53	13.44	6.2
SPP South - Energy Price - 1H2023	2635	3/19/2030	3/19/2030	7.23	7.25	12.67	13.22	13.22	13.22	28.11	28.11	25.12	10.42	5.58	5.6	5.73	6.01	6.16	6.05	6.28	6.05	25.83	28.11	28.11	28.11	13.22	13.22
SPP South - Energy Price - 1H2023	2636	3/20/2030	3/20/2030	13.25	13.25	13.25	13.25	13.25	13.25	28.38	28.18	28.17	6.19	5.58	0.85	5.73	6.01	6.05	6.05	6.28	6.05	28.17	29.51	30.04	29.21	14.25	13.39
SPP South - Energy Price - 1H2023	2637	3/21/2030	3/21/2030	14.56	15.51	15.51	15.51	15.51	15.68	34.72	35.03	34.8	35.17	34.72	34.72	32.37	34.72	34.72	34.72	34.56	31.93	34.71	31.52	30.28	30.28	14.07	11.56
SPP South - Energy Price - 1H2023	2638	3/22/2030	3/22/2030	13.59	13.59	4.09	13.59	13.59	11.22	22.52	16.91	0.93	0.88	0.92	0.85	0.93	1.95	5.51	8.93	29.09	29.36	30.39	29.36	29.66	29.36	14.58	14.27
SPP South - Energy Price - 1H2023	2639	3/23/2030	3/23/2030	13.91	14.56	15.12	15.12	15.12	15.12	40.86	40.86	36.71	37.21	36.71	36.71	17.93	36.7	36.71	20.13	13.89	36.7	39.9	40.85	36.71	36.71	13.95	13.95
SPP South - Energy Price - 1H2023	2640	3/24/2030	3/24/2030	13.59	13.96	14.36	15.12	14.77	14.77	40.85	39.9	36.71	36.71	36.71	36.71	36.71	11.1	36.7	9.38	13.54	39.43	36.71	36.71	36.71	36.71	13.95	13.59
SPP South - Energy Price - 1H2023	2641	3/25/2030	3/25/2030	13.86	14.2	13.86	13.86	13.86	15.51	34.26	31.03	30.2	30.45	30.2	34.07	31.97	31.76	31.67	31.34	34.07	34.26	34.26	34.69	34.26	32.69	15.43	14.82
SPP South - Energy Price - 1H2023	2642	3/26/2030	3/26/2030	14.08	13.98	14.25	13.91	13.53	15.06	31.61	29.96	29.25	32.29	29.71	33.32	31.41	31.43	33.54	33.96	33.54	33.54	33.96	35.55	35.06	33.54	15.49	15.51
SPP South - Energy Price - 1H2023	2643	3/27/2030	3/27/2030	15.24	14.87	14.87	14.47	14.47	14.47	32.43	29.03	31.66	31.45	31.27	31.27	30.12	28.27	28.27	28.29	28.27	28.63	31.41	30.73	30.12	28.27	14.19	14.47
SPP South - Energy Price - 1H2023	2644	3/28/2030	3/28/2030	13.68	13.86	13.86	13.86	14.05	14.05	29.36	30.06	27.19	26.97	28.63	27.59	26.97	26.97	26.97	26.96	26.96	26.97	29.31	30.94	30.45	30.94	13.68	12.84
SPP South - Energy Price - 1H2023	2645	3/29/2030	3/29/2030	12.84	11.58	12.84	11.58	12.84	13.19	25.97	26.05	25.81	25.58	25.58	25.58	25.58	25.58	25.58	28.63	28.63	29.35	29.35	29.36	29.36	29.36	13.19	12.84
SPP South - Energy Price - 1H2023	2646	3/30/2030	3/30/2030	12.84	12.84	12.84	13.19	12.84	12.84	35.64	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	35.63	35.64	37.72	37.72	35.63	35.63	12.91	12.84
SPP South - Energy Price - 1H2023	2647	3/31/2030	3/31/2030	12.84	12.84	12.24	12.84	12.84	12.84	34.7	34.7	31.29	11.81	7.3	1.86	6.85	7.3	1.57	1.45	7.3	13.15	31.29	13	15.11	14.97	5.39	4.81
SPP South - Energy Price - 1H2023	2648	4/1/2030	4/1/2030	6.44	5.64	5.64	5.67	5.86	5.68	7.52	7.14	1.06	6.62	7.36	21.03	22.42	22.42	22.42	22.41	22.42	23.71	25.07	25.28	25.08	25.02	15.57	15.57
SPP South - Energy Price - 1H2023	2649	4/2/2030	4/2/2030	16.39	16.39	16.39	16.39	16.39	16.39	24.84	23.4	23.4	23.4	23.4	1.05	0.86	10.4	8.46	7.48	23.4	23.4	23.4	23.4	23.4	23.4	15	15
SPP South - Energy Price - 1H2023	2650	4/3/2030	4/3/2030	15.21	15.21	15.21	5.67	15.21	15.38	23.71	23.69	20.23	16.72	20.59	6.64	6.89	7.01	7	7.48	7.74	8.78	23.69	21.11	18.83	8.47	6.19	5.63
SPP South - Energy Price - 1H2023	2651	4/4/2030	4/4/2030	6.19	6.19	5.64	5.67	15.57	15.57	23.71	23.71	24.16	22.67	22.79	7.51	20.61	24.16	20.61	7.48	21.27	23.71	21.51	22.41	10.87	8.47	6.32	5.63
SPP South - Energy Price - 1H2023	2652	4/5/2030	4/5/2030	6.44	6.19	5.64	8	7.36	14.56	22.81	22.81	22.81	22.81	22.81	22.81	16.08	8.62	15.38	19.57	7.74	18.03	22.81	22.81	22.81	23.7	14.56	14.63
SPP South - Energy Price - 1H2023	2653	4/6/2030	4/6/2030	14.56	14.56	15.9	15.9	15.9	15.9	21.99	22	20.13	20.13	22	20.13	20.13	8.94	8.33	7.93	18.12	20.13	21.17	20.13	20.13	21.21	15.82	15.43
SPP South - Energy Price - 1H2023	2654	4/7/2030	4/7/2030	14.56	14.56	14.56	14.56	14.56	14.56	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	21.99	22	22	22.6	22.6	22	15.9	15.9
SPP South - Energy Price - 1H2023	2655	4/8/2030	4/8/2030	14.17	14.17	14.63	14.63	14.63	15.47	23.71	23.71	23.71	22.23	22.23	9.82	22.23	20.38	20.45	16.26	12.67	12.59	22.23	22.23	22.23	22.23	14.17	14.17

SPP South - Energy Price - 1H2023	2656	4/9/2030	4/9/2030	8.79	6.19	5.64	5.93	5.86	14.68	22.92	8.78	6.88	6.62	6.57	6.64	6.89	10.97	10.09	22.92	22.92	22.92	25.65	24.57	25.65	23.71	16.04	14.68
SPP South - Energy Price - 1H2023	2657	4/10/2030	4/10/2030	6.44	6.19	7.25	9.04	15.38	16.51	23.61	23.71	21.77	23.48	23.48	23.48	23.48	23.48	23.48	24.54	23.48	23.48	23.48	23.48	23.48	23.48	15.1	5.63
SPP South - Energy Price - 1H2023	2658	4/11/2030	4/11/2030	14.85	14.85	14.85	14.85	14.85	14.85	22.66	22.66	22.66	22.66	22.66	22.7	23.05	22.66	22.7	22.74	22.66	22.66	22.66	23.89	22.69	22.66	16.2	14.85
SPP South - Energy Price - 1H2023	2659	4/12/2030	4/12/2030	15.06	16.11	16.11	16.11	16.11	16.55	25.74	22.53	9.23	1.8	1.08	1.05	0.86	0.82	0.89	1.58	0.84	7.44	7.05	22.53	22.53	22.53	14.74	14.74
SPP South - Energy Price - 1H2023	2660	4/13/2030	4/13/2030	6.44	6.19	5.64	5.67	5.86	5.68	7.97	7.57	1.12	1.01	1.01	1.12	0.91	0.87	0.94	0.87	0.89	7.89	7.47	20.39	20.39	20.39	14.75	14.75
SPP South - Energy Price - 1H2023	2661	4/14/2030	4/14/2030	14.75	14.75	14.75	14.74	14.75	14.75	20.39	20.39	20.39	18.76	20.39	20.39	7.31	11.66	10.84	14.76	20.39	22.28	22.9	22.89	22.89	22.28	14.8	14.75
SPP South - Energy Price - 1H2023	2662	4/15/2030	4/15/2030	14.6	14.6	14.6	14.6	14.6	14.65	22.55	22.33	22.33	22.33	14.24	22.33	6.89	7.01	7	9.25	8.25	18.11	22.33	22.33	22.33	22.33	14.6	14.6
SPP South - Energy Price - 1H2023	2663	4/16/2030	4/16/2030	14.81	14.81	5.64	5.67	14.81	16.18	24.57	22.61	22.61	21.11	11.54	7.91	6.89	7.01	7.91	7.91	7.74	22.61	22.87	24.22	23.01	22.83	14.81	14.81
SPP South - Energy Price - 1H2023	2664	4/17/2030	4/17/2030	14.91	14.91	14.91	14.91	15.55	16.29	22.77	21.14	3.9	3.84	1.08	3.84	0.86	0.82	0.89	9.25	9.29	22.74	22.74	19.84	19.45	17.89	13.71	14.91
SPP South - Energy Price - 1H2023	2665	4/18/2030	4/18/2030	14.78	14.78	14.78	14.78	14.78	14.78	22.57	7.14	6.88	6.62	6.57	6.64	6.89	7.01	7	7.48	7.74	7.44	7.05	22.57	22.57	22.57	14.78	14.78
SPP South - Energy Price - 1H2023	2666	4/19/2030	4/19/2030	14.5	14.5	15.83	15.83	16.27	16.27	25.37	24.6	23.71	23.71	23.71	23.71	23.71	23.71	24.88	23.71	25.37	25.37	24.88	24.88	24.88	23.71	16.47	15.91
SPP South - Energy Price - 1H2023	2667	4/20/2030	4/20/2030	15.89	15.59	14.84	15.21	15.83	15.83	22.5	20.67	20.15	20.52	21.9	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	14.46	14.5
SPP South - Energy Price - 1H2023	2668	4/21/2030	4/21/2030	14.5	14.5	14.5	14.5	14.49	14.5	10.33	20.05	10.42	7.02	9.23	20.05	21.9	20.05	21.9	22.5	22.5	22.5	22.5	22.34	21.9	20.05	15.83	15.19
SPP South - Energy Price - 1H2023	2669	4/22/2030	4/22/2030	14.02	14.02	14.02	14.02	15.3	14.57	23.71	24.57	24.62	23.71	23.72	23.71	24.66	24.66	24.66	24.66	24.66	24.91	24.91	24.91	24.91	24.66	15.72	15.3
SPP South - Energy Price - 1H2023	2670	4/23/2030	4/23/2030	15.73	15.73	16.16	16.16	15.73	15.73	24.57	22.07	22.07	22.07	22.09	22.07	23.42	22.14	22.25	22.36	23.71	25.23	25.24	25.23	25.23	25.23	15.73	15.73
SPP South - Energy Price - 1H2023	2671	4/24/2030	4/24/2030	13.98	15.26	14.38	15.26	15.67	15.67	23.71	24.6	24.57	23.71	24.57	23.71	21.51	21.51	21.51	21.51	21.51	21.51	21.51	21.57	21.51	21.51	13.92	13.92
SPP South - Energy Price - 1H2023	2672	4/25/2030	4/25/2030	13.92	13.87	13.92	13.85	13.92	13.92	21.42	21.42	21.42	21.42	18.69	14.05	14.05	7.01	7	7.48	14.05	14.17	19.91	21.42	21.58	21.42	13.92	13.92
SPP South - Energy Price - 1H2023	2673	4/26/2030	4/26/2030	13.79	7.86	7.86	13.79	13.79	15.05	23.71	23.71	21.26	21.26	21.26	21.26	7.86	7.86	7	8.55	8.55	7.44	8.55	8.55	8.55	8.47	6.32	5.63
SPP South - Energy Price - 1H2023	2674	4/27/2030	4/27/2030	6.44	0.95	0.95	0.95	0.95	1.04	1.32	1.32	1.32	7.02	1.14	1.12	0.91	0.87	0.94	0.87	1.12	7.89	7.26	19.07	19.07	19.07	13.79	13.79
SPP South - Energy Price - 1H2023	2675	4/28/2030	4/28/2030	13.79	13.79	13.79	13.79	13.79	13.79	19.07	8.85	7.29	7.02	6.97	7.04	7.31	7.43	7.42	7.93	8.21	10.63	19.07	20.81	20.81	19.07	13.79	13.79
SPP South - Energy Price - 1H2023	2676	4/29/2030	4/29/2030	14.29	14.29	14.29	14.29	14.29	14.29	19.5	4.27	3.67	3.52	3.98	4.64	5.27	6.34	19.12	8.11	8.67	7.45	21.92	21.92	21.92	21.92	14.29	14.29
SPP South - Energy Price - 1H2023	2677	4/30/2030	4/30/2030	14.62	14.62	6.8	14.62	14.62	14.62	22.64	22.35	22.42	22.41	23.18	24.87	25.49	25.55	25.55	25.55	25.83	25.55	25.64	25.55	25.55	25.55	16.4	15.97
SPP South - Energy Price - 1H2023	2678	5/1/2030	5/1/2030	16.1	16.1	16.1	14.99	15.26	16.1	22.99	23.76	23.36	23.76	23.19	22.04	24.64	24.83	24.64	24.89	24.89	24.89	24.89	25.1	24.64	24.64	16.1	16.1
SPP South - Energy Price - 1H2023	2679	5/2/2030	5/2/2030	14.41	15.68	14.41	15.68	15.68	15.92	22.95	22.45	21.12	21.12	21.11	21.12	21.12	21.12	21.12	21.11	21.11	21.12	21.12	21.12	21.12	21.11	14.41	14.41
SPP South - Energy Price - 1H2023	2680	5/3/2030	5/3/2030	13.63	13.63	13.63	13.63	14.78	13.63	20.13	4.28	3.68	13.24	3.99	4.65	5.28	6.35	7.24	20.13	20.13	20.13	15.37	20.13	23.06	20.66	13.63	13.63
SPP South - Energy Price - 1H2023	2681	5/4/2030	5/4/2030	13.63	13.63	13.63	4.66	13.63	13.81	20.82	20.4	12.56	13.14	8.75	10.68	7.09	20.41	20.41	20.41	20.41	20.41	20.41	20.87	20.41	20.41	13.63	13.63
SPP South - Energy Price - 1H2023	2682	5/5/2030	5/5/2030	13.63	13.63	13.63	11.15	13.63	12.88	20.41	5.24	4.45	4.26	12.41	5.62	12.41	9.46	12.08	20.41	20.41	20.41	22.24	22.24	22.24	22.24	14.85	14.85
SPP South - Energy Price - 1H2023	2683	5/6/2030	5/6/2030	13.29	13.66	13.29	14.43	14.47	14.47	22.58	19.7	19.31	19.69	19.69	19.64	19.69	19.69	19.7	13.4	19.7	19.7	19.7	22.58	22.76	22.58	14.47	14.47
SPP South - Energy Price - 1H2023	2684	5/7/2030	5/7/2030	14.92	13.88	14.55	14.92	14.92	15.07	23.15	21.7	21.9	21.92	21.31	21.36	20.89	21.45	20.58	20.21	20.37	20.8	23.15	23.06	23.15	21.35	14.43	14.43
SPP South - Energy Price - 1H2023	2685	5/8/2030	5/8/2030	14.43	14.43	14.43	14.43	15.3	15.75	23.76	23.53	21.15	22.75	23.3	23.76	23.76	21.86	21.86	21.86	21.86	23.76	24.2	24.2	24.2	23.76	15.75	15.75
SPP South - Energy Price - 1H2023	2686	5/9/2030	5/9/2030	15.53	14.67	14.67	14.67	15.75	16.01	23.76	21.44	21.44	21.44	20.35	8.01	8.89	12.81	21.44	20.35	21.44	21.44	21.44	23.76	23.76	24.22	16.01	14.67
SPP South - Energy Price - 1H2023	2687	5/10/2030	5/10/2030	14.63	15	15.55	14.93	14.7	15.97	23.76	21.86	23.76	23.76	23.76	24.47	24.81	24.47	23.76	24.47	24.49	24.47	27.3	24.71	24.71	24.71	18.12	16.4
SPP South - Energy Price - 1H2023	2688	5/11/2030	5/11/2030	16.4	16.4	16.4	16.12	15.96	16.4	24.56	24.56	24.56	26.39	24.56	24.56	24.56	25.76	26.69	28.73	24.56	24.56	26.69	27.14	28.73	28.73	18.12	16.4
SPP South - Energy Price - 1H2023	2689	5/12/2030	5/12/2030	16.4	16.4	15.98	15.97	16.4	16.4	24.56	24.37	23.91	23.93	24.56	24.56	24.56	24.56	26.01	25.58	24.56	27.14	26.75	24.56	23.91	23.91	15.08	15.58
SPP South - Energy Price - 1H2023	2690	5/13/2030	5/13/2030	15.76	15.2	14.88	15.2	15.78	15.15	23.34	23.76	21.86	23.37	23.83	24.49	24.83	24.83	24.49	24.83	23.76	24.49	23.76	21.71	21.71	23.76	14.88	14.88
SPP South - Energy Price - 1H2023	2691	5/14/2030	5/14/2030	15.04	16.42	15.33	16.42	15.04	16.42	21.91	21.91	21.91	20.15	3.99	4.65	5.28	21.91	21.91	23.76	23.76	21.91	23.76	23.76	23.76	21.91	15.04	15.04
SPP South - Energy Price - 1H2023	2692	5/15/2030	5/15/2030	15.15	15.15	5.67	15.15	15.15	15.45	22.05	22.05	22.05	23.76	23.76	23.76	23.76	25.22	23.76	25.22	25.22	25.22	25.22	25.22	25.22	25.22	16.55	15.15
SPP South - Energy Price - 1H2023	2693	5/16/2030	5/16/2030	16.75	16.55	16.55	15.34	16.27	16.75	22.95	23.76	24.1	24.39	24.91	25.47	25.74	25.47	25.47	25.74	25.47	25.47	25.47	25.47	25.56	24.63	16.75	15.52
SPP South - Energy Price - 1H2023	2694	5/17/2030	5/17/2030	15.52	15.22	15.22	15.22	15.33	15.52	23.84	22.13	22.16	23.76	22.37	23.76	22.13	22.13	23.76	23.76	24.63	24.63	24.63	25.3	25.3	23.77	17.07	16.66
SPP South - Energy Price - 1H2023	2695	5/18/2030	5/18/2030	16.62	16.21	15.22	15.22	15.33	15.22	22.79	23.3	24.89	24.89	24.89	24.89	24.89	22.79	22.79	24.87	22.79	23.28	22.79	24.89	24.89	22.79	15.22	15.22
SPP South - Energy Price - 1H2023	2696	5/19/2030	5/19/2030	15.22	15.22	15.22	15.22	15.22	15.22	22.79	22.79	22.79	22.79	11.26	22.79	22.79	22.79	22.79	24.77	23.49	22.79	22.79	22.79	22.79	22.79	15.22	15.22
SPP South - Energy Price - 1H2023	2697	5/20/2030	5/20/2030	15.6	15.6	15.6	15.6	15.75	16.53	22.62	22.62	22.62	22.62	23.76	23.76	23.76	22.62	22.62	22.62	22.62	22.62	22.62	23.76	25.21	23.76	15.6	15.6
SPP South - Energy Price - 1H2023	2698	5/21/2030	5/21/2030	15.69	15.69	15.69	15.69	16.01	16.02	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	23.08	24.36	22.73	15.69	15.69
SPP South - Energy Price - 1H2023	2699	5/22/2030	5/22/2030	5.75	5.28	8.61	6.25	15.56	15.43	22.03	4.28	3.68	3.53	3.99	14.19	19.87	22.51	22.57	19.61	16.29	22.51	22.57	22.57	22.57	22.57	10.35	8.82
SPP South - Energy Price - 1H2023	2700	5/23/2030	5/23/2030	12.86	5.28	5.54	5.54	6.17	6.02	15.76	4.28	3.68	3.53	3.99	4.65	5.28	22.47	22.47	22.47	22.47	22.47	22.47	22.47	25.69	22.97	15.49	15.49
SPP South - Energy Price - 1H2023	2701	5/24/2030	5/24/2030	14.99	14.99	14.99	14.99	14.99	14.99	21.84	21.84	21.89	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	22.1	21.84	21.84	21.84	14.99	14.99
SPP South - Energy Price - 1H2023	2702	5/25/2030	5/25/2030	14.99	13.53	13.53	14.07	13.53	13.78	7.45	5.17	20.27	4.26	20.27	22.45	22.45	22.45	22.45	24.51	26.34	25.18	25.18	25.18	24.51	24.51	14.99	14.99
SPP South - Energy Price - 1H2023	2703	5/26/2030	5/26/2030	8.12	12.67	13.19	13.79	13.43	14.99	21.02	20.65	21.58	22.45	22.45	22.45	22.45	22.45	22.45	20.65	13.52	9.26	22.45	24.51	22.97	24.51	16.29	14.99
SPP South - Energy Price - 1H2023	2704	5/27/2030	5/27/2030	14.99	14.99	14.99	14.99	14.99	15.27	20.71	19.06	19.06	21.84	21.84	21.94	21.84	21.97	24.98	22.47	24.98	24.98	24.98	24.98	24.42	23.12	15.63	14.99
SPP South - Energy Price - 1H2023	2705	5/28/2030	5/28/2030	15.4	15.4	15.4	15.4	15.53	15.4	22.36	22.36	22.47	22.46	25.56	25.56	25.84	25.81	25.56	25.84	25.56	26.06	25.84	26.95	26.43	26.02	17.28	16.82
SPP South - Energy Price - 1H2023	2706	5/29/2030	5/29/2030	17.15	17.2	17.29	17.15	17.02	17.2	24.37	22.84	22.74	23.76	24.63	23.76	23.76	24.63	24.63	25.98	24.63	23.76	23.76	23.76	22.74	22.74	7.88	15.7
SPP South - Energy Price - 1H2023	2707	5/30/2030	5/30/2030	15.8	15.8	3.25	2.96	15.8	15.95	22.87	22.87	23	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	22.87	15.8	15.8
SPP South - Energy Price - 1H2023	2708	5/31/2030	5/31/2030	16.08	16.08	16.08	2.96	16.08	16.08	23.22	23.22	23.22	2.23	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	16.08	16.08
SPP South - Energy Price - 1H2023	2709	6/1/2030	6/1/2030	18.39	18.39	3.88	18.39	18.39	18.39	32.93	32.93	32.93	32.93	32.93	32.93	32.93	33.62	36.01	36.01	36.01	36.01	36.01	36.01	36.01	36.01	20.11	20.11
SPP South - Energy Price - 1H2023	2710	6/2/2030	6/2/2030	18.71	18.7	18.39	18.39	19.89	19.63	34.39	36.01	36.01	36.01	36.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	36.01	36.01	36.01	36.01	20.11	18.73
SPP South - Energy Price - 1H2023	2711	6/3/2030	6/3/2030	15.98	15.96	15.96	15.96	15.96	15.96	29.31	29.17	29.16	29.17	29.17	29.17	29.17	29.17	33.34	29.17	29.17	33.39	33.39	33.76	33.39	33.39	18.16	17.4
SPP South - Energy Price - 1H2023	2712	6/4/2030	6/4/2030	16.88	15.63	16.81	16.49	16.74	16.88	29.63	31.09	30.9	32.81	33.1	33.1	33.17	33.4	33.77	33.75	33.1	33.82	35.15	35.19	35.65	35.15	20.28	19.73
SPP South - Energy Price - 1H2023	2713	6/5/2030	6/5/2030	18.65	18.14	18.03	17.77	18	18.09	33.23	31.03	31.61	30.17	29.54	33.23	33.53	33.23	33.53	35.17	33.23	34.28	34.58	34.58	34.28	33.23	17.77	16.87
SPP South - Energy Price - 1H2023	2714	6/6/2030	6/6/2030	16.83	16.83	15.7	16.02	16.38	16.69	30.99	30.81	29.52	32.48	32.48	32.76	32.76	32.76	32.76	32.76	32.48	32.76	32.48	32.76	32.76	32.48	15.44	15.44
SPP South - Energy Price - 1H2023	2715	6/7/2030	6/7/2030	14.67	14.67	14.67	14.67	14.77	14.98	27.55	28.37	28.21	31.13	31.13	33.34	32.24	32.24	32.24	31.36	31.37	31.37	31.56	32.51	32.24	32.32	18.6	17.2
SPP South - Energy Price - 1H2023	2716	6/8/2030	6/8/2030	15.38	15.04	14.93	14.8	15.47	15.97	27.56	28.6	29.19	30.12	31.04	31.64	32.36	34.58	38.75	32.36	32.36	32.01	32.59	32.19	32.36	30.76	16.39	15.65
SPP South - Energy Price - 1H2023	2717	6/9/2030	6/9/2030	15.97	15.97	16.39	16.37	16.17	15.97	27.47	26.95	26.28	26.28	26.93	26.93	28.6	28.6	26.93	26.28	30.34	29.36	29.76	32.46	32.1	30.49	15.97	16.87
SPP South - Energy Price - 1H2023	2718	6/10/2030	6/10/2030	18.98	18.48	18.48	18.48	18.42	18.48	34	33.69	34.62	35.08	35.44	35.08	35.08	35.08	35.08	35.08	35.08	34.72	35.08	31.75	32.19	31.78	17.23	18.48
SPP South - Energy Price - 1H2023	2719	6/11/2030	6/11/2030	17.81	18.89	19	17.52	18.89	18.63	34.4	35.9	35.9	34.89	35.91	35.91	35.9	36.27	36.29	36.29	36.29	35.9	35.27	37.39	36.4	35.91	19.52	17.39
SPP South - Energy Price - 1H2023	2720	6/12/2030	6/12/2030	17.81	4.26	18.78	19.47	19.47	19.47	34.52	35.2	36.65	36.65	37.06	37.06	36.65	37.06	39.35	38.62	37.06	36.65	36.65	37.87	37.06	36.65	20	19.47
SPP South - Energy Price - 1H2023	2721	6/13/2030	6/13/2030	19.05	19.05	19.05	19.05	19.05	19.05	34.3	35.19	35.99	36.38	38.24	37.61	38.01	40.38	40.38	47.05	40.38	38.31	38.71	39.07	36.6	36.39	19.05	17.44
SPP South - Energy Price - 1H2023	2722	6/14/2030	6/14/2030	18.8	18.84	18.51	18.55	18.59	18.84	32.25	33.42	30.71	32.03	31.36	33.44	32.42	34.88	33.79	33.79	31.24	32.95	31.08	35.23	35.23	34.88	19.26	18.35
SPP South - Energy Price - 1H2023	2723	6/15/2030	6/15/2030	17.23	16.8	16.8	16.92	16.8	16.8	30.1	30.2	30.1	30.1	30.1	30.1	32.86	32.86	32.86	32.86	32.86	32.86	32.86	32.86	33.13	32.86	18.35	16.82
SPP South - Energy Price - 1H2023	2724	6/16/2030	6/16/2030	16.8	16.8	16.8	16.8	16.8	16.8	30.1	30.1	30.1	30.1	32.72	30.1	32.86	32.86	32.86	30.1	30.1	30.23	32.86	32.86	33.75	33.75	18.35	18.35
SPP South - Energy Price - 1H2023	2725	6/17/2030	6/17/2030	17.5	17.5	17.5	17.5	17.76	17.97	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	31.59	34.35	34.98	33.89	19.12	17.5
SPP South - Energy Price - 1H2023	2726	6/18/2030	6/18/2030	16.99	16.99	16.99	16.99	16.99	17.32	30.79	30.79	30.79	30.79	31.3	35.21	30.79	30.79	34.8	35.21	35.21	35.21	35.21	35.21	35.31	35.2	19.06	19.06
SPP South - Energy Price - 1H2023	2727	6/19/2030	6/19/2030	19.01	19.01	19.01	19.01	19.01	19.01	33.34	33.33	33.34	35.13	35.13	35.13	35.13	35.5	35.3	35.26	35.13	35.5	36.53	39.3	39.3	36.87	22.85	19.01
SPP South - Energy Price - 1H2023	2728	6/20/2030	6/20/2030	19.43	19.43	18.92	18.92	18.92	18.92	33.34	33.34	33.34	34.17	35.78	35.78	33.34	35.78	35.78	36.17	36.17	36.17	37.62	36.55	44.02	38.35	20.62	19.44
SPP South - Energy Price - 1H2023	2729	6/21/2030	6/21/2030	19.5	19.5	19.26	19.5	19.45	19.5	33.79	35.88	35.88	36.27	36.27	36.56	36.56	37.73	38.4	40.28	40.24	38.23	38.6	39.53	39.95	38.47	21.58	20.32
SPP South - Energy Price - 1H2023	2730	6/22/2030	6/22/2030	20.14	19.5	19.5	19.5	18.98	19.5	34	34	34.93	38.75	38.75	41.41	38.75	41.41	38.75	38.65	34.93	38.65	38.75	38.75	34.93	34	19.5	18.98
SPP South - Energy Price - 1H2023	2731	6/23/2030	6/23/2030	19.24	18.98	18.98	18.98	18.88	18.98	33.44	34	34.93	35.32	35.61	35.75	38.46	39.66	38.75	34.93	36.4	34.93	34.93	36.4	37.97	34.93	19.83	19.5
SPP South - Energy Price - 1H2023	2732	6/24/2030	6/24/2030	20.07	19.53	19.53	19.53	19.37	19.53	33.34	33.81	34.55	33	32.17	34.55	34.55	34.55	33.34	33.34	32.17	32.17	33.34	35.06	36.75	35.32	20.07	19.53
SPP South - Energy Price - 1H2023	2733	6/25/2030	6/25/2030	19.76	19.76	18.29	18.07	19.57	19.32	33.59	34.8	37.11	37.11	34.79	35.05	37.53	37.53	37.53	37.11	36.64	37.11	36.57	36.57	35.35	35.43	20.3	19.76
SPP South - Energy Price - 1H2023	2734	6/26/2030	6/26/2030	20.13	20.77	20.43	20.13	20.13	20.13	33.99	35.07	34.82	34.47	36.49	33.85	35.07	35.62	37.69	35.36	36.06	35.38	33.26	34.81	36.78	36.06	20.69	20.13
SPP South - Energy Price - 1H2023	2735	6/27/2030	6/27/2030	20.34	20.34	20.34	20.34	20.1	19.84	33.34	35.63	33.6	37.92	38.03	34.83	36.33	35.92	38.03	38.03	38.03	38.03	38.03	38.03	38.03	38.03	20.9	20.9
SPP South - Energy Price - 1H2023	2736	6/28/2030	6/28/2030	19.68	20.13	20.13	19.59	20.13	20.13	34.92	35.07	35.14	36.85	36.85	37.08	37.26	38.07	39.64	41.45	36.84	37.26	37.26	37.26	37.26	36.85	20.38	20.23
SPP South - Energy Price - 1H2023	2737	6/29/2030	6/29/2030	20.35	20.12	19.68	19.59	19.59	19.59	35.09	36.06	36.46	36.06	36.06	36.06	38.75	39.92	42.79	38.75	36.22	38.75	38.75	38.75	38.75	36.08	19.59	19.59
SPP South - Energy Price - 1H2023	2738	6/30/2030	6/30/2030	19.59	19.59	19.59	19.59	19.59	19.59	35.09	35.09	35.35	35.09	35.09	36.06	36.06	38.75	38.75	38.75	38.75	38.75	36.06	37.17	38.75	36.06	19.59	19.22

SPP South - Energy Price - 1H2023	2739	7/1/2030	7/1/2030	27.11	26.42	26.42	26.42	26.79	29.57	35.82	38.33	39.35	39.76	39.78	39.83	39.78	41.36	39.83	38.82	38.82	37.06	37.84	38.25	36.75	36.26	27.11	27.11
SPP South - Energy Price - 1H2023	2740	7/2/2030	7/2/2030	30.93	31.37	31.31	30.54	30.54	31.37	39.7	41.22	44.4	48.12	46.3	45.32	48.09	47.34	52.51	49.43	50.16	45.47	46.29	49.43	49.43	51.26	42.49	37.15
SPP South - Energy Price - 1H2023	2741	7/3/2030	7/3/2030	37.68	34.44	34.08	35.85	35.98	35.98	42.07	40.58	40.58	44.55	46.69	52.83	52.4	49.83	46.28	44.97	45.32	45.96	46.32	46.69	46.85	46.49	35.85	33.96
SPP South - Energy Price - 1H2023	2742	7/4/2030	7/4/2030	34.6	31.8	31.8	31.49	33.58	33.07	39.76	40.16	40.22	40.58	41.45	45.58	46.62	52.58	52.84	52.97	45.18	46.12	47.96	46.73	46.71	47.29	35.26	33.34
SPP South - Energy Price - 1H2023	2743	7/5/2030	7/5/2030	34.78	34.12	34.08	33.44	34.39	35.85	43.64	43.51	50.91	51.03	46.94	51.65	56.32	57.96	58.61	59.04	55.15	59.62	59.75	55.24	53.17	47.25	37.29	37.29
SPP South - Energy Price - 1H2023	2744	7/6/2030	7/6/2030	37.29	34.58	34.08	32.73	34.82	34.18	42.23	47.73	49.65	46.23	47.73	50.37	62.71	61.72	61.73	62.71	61.26	62.71	54.82	47.73	47.73	46.2	35.6	34.47
SPP South - Energy Price - 1H2023	2745	7/7/2030	7/7/2030	34.78	34.37	34.17	31.81	31.62	31.48	40.81	40.81	40.81	42.48	41.92	45.09	43.26	46.99	46.36	45.57	44.41	40.81	41.92	41.92	43.11	44.85	32.2	31.35
SPP South - Energy Price - 1H2023	2746	7/8/2030	7/8/2030	32.28	32.28	33.16	33.16	33.16	33.16	39.74	39.6	39	39.77	40.06	42.05	42.05	42.05	42.05	41.89	41.58	41.58	41.46	38.91	41.44	41.47	31.52	32.28
SPP South - Energy Price - 1H2023	2747	7/9/2030	7/9/2030	32.73	30.77	30.61	30.57	32.73	32.73	41.51	41.46	42.07	45.93	45.92	44.38	47.37	45.78	48.55	48.04	47.89	47.89	48.93	42.55	46.75	47.37	37.15	37.1
SPP South - Energy Price - 1H2023	2748	7/10/2030	7/10/2030	36.25	34.37	34.08	34.01	33.47	34.18	42.37	42.37	42.97	43.63	49.47	48.47	47.15	42.9	41.9	42.17	41.9	43.45	45.14	47.15	44.18	43.47	35.85	35.85
SPP South - Energy Price - 1H2023	2749	7/11/2030	7/11/2030	32.53	31.05	32.21	32.25	33.58	33.58	41.37	41.37	41.37	41.37	41.37	41.37	41.48	41.37	45.92	45.92	47.57	45.92	48.49	47.82	40.92	45.34	40.25	35.85
SPP South - Energy Price - 1H2023	2750	7/12/2030	7/12/2030	35.85	35.71	32.26	32.26	32.26	32.26	40.64	40.64	40.64	41.42	47.03	43.26	47.03	47.03	46.68	46.14	47.14	47.93	47.03	45.57	45.82	45.57	37.19	35.85
SPP South - Energy Price - 1H2023	2751	7/13/2030	7/13/2030	35.85	35.85	34.08	34.01	34.09	33.53	42.96	43.16	41.82	42.96	42.96	42.96	43.24	42.96	48.89	47.73	47.53	49.63	50.12	55	50.92	49.63	35.85	34.47
SPP South - Energy Price - 1H2023	2752	7/14/2030	7/14/2030	34.78	32.26	32.05	31.97	32.23	32.05	42.52	41.82	42.96	41.81	42.96	42.96	44.16	47.73	51.8	49.63	55.99	55.99	55.99	56.76	56.9	57.44	37.93	35.7
SPP South - Energy Price - 1H2023	2753	7/15/2030	7/15/2030	34.8	34.37	34.01	33.93	33.67	34.4	43.47	42.95	44.85	48.77	49.16	48.77	49.02	46.93	48.29	47.78	47.4	48.37	48.77	48.98	46.93	46.93	36.87	35.85
SPP South - Energy Price - 1H2023	2754	7/16/2030	7/16/2030	35.85	35.67	34.94	34.01	34.09	36.06	46.53	47.87	47.6	47.77	50.74	55.78	55.78	56.44	58.97	63.03	62.02	59.01	54.94	55.42	52.1	50.35	38.76	35.85
SPP South - Energy Price - 1H2023	2755	7/17/2030	7/17/2030	35.85	35.76	35.78	34.63	35.85	35.85	42.87	42.87	42.38	42.87	42.38	47.02	53.14	53.03	52.63	55.62	54.24	53.01	55.91	51.5	47.75	43.55	34.65	35.06
SPP South - Energy Price - 1H2023	2756	7/18/2030	7/18/2030	35.06	34.44	35.06	35.06	34.97	34.34	41.2	43.56	40.24	42.6	45.8	46.35	44.31	46.48	44.09	45.59	43.56	41.84	46.11	51.47	44.09	48.4	38.93	35.85
SPP South - Energy Price - 1H2023	2757	7/19/2030	7/19/2030	35.42	34.01	33.1	33.96	34	33.88	41.48	42.47	42.96	42.96	42.96	42.96	42.96	44.02	44.19	42.96	43.29	42.96	47.86	47.86	46.97	47.86	37.15	35.85
SPP South - Energy Price - 1H2023	2758	7/20/2030	7/20/2030	35.85	35.85	34.08	34.01	34.01	33.42	44.07	44.51	45.29	45.29	45.29	45.29	45.32	47.73	47.73	47.73	50.16	46.7	50.16	45.29	45.29	46.21	35.85	34.01
SPP South - Energy Price - 1H2023	2759	7/21/2030	7/21/2030	34.01	30.32	31.53	32.98	34	33.36	43.44	44.07	44.07	44.07	44.07	45.29	45.29	44.9	44.07	46.58	45.29	44.07	45.29	47.73	49.47	47.73	35.85	34.16
SPP South - Energy Price - 1H2023	2760	7/22/2030	7/22/2030	35.44	33.17	32.98	33.55	32.9	32.92	40.51	41.07	41.28	41.52	46.11	46.11	51.48	52.82	53.72	53.72	53.72	54.7	53.72	53.69	53.71	51.45	37.77	38.3
SPP South - Energy Price - 1H2023	2761	7/23/2030	7/23/2030	35.85	35.85	34.18	33.77	34.09	35.85	41.38	42.55	43.15	45.26	41.64	50.54	51.31	51.58	50.54	50.54	54.08	42.27	54.11	46.52	46.46	50.5	37.15	33.05
SPP South - Energy Price - 1H2023	2762	7/24/2030	7/24/2030	32.47	32.47	32.47	32.47	32.71	32.08	38.84	38.35	40.85	39.88	41.29	42.18	44.73	40.85	41.48	41.49	50.69	41.34	52.29	52.54	41.29	42.21	35.43	33.69
SPP South - Energy Price - 1H2023	2763	7/25/2030	7/25/2030	31.98	33.69	31.98	32.94	32.29	35.85	40.34	40.34	41.38	43.25	45.29	52.3	48.16	52.66	55.75	53.11	52.66	50.45	52.66	51.33	52.67	52.66	42.27	35.85
SPP South - Energy Price - 1H2023	2764	7/26/2030	7/26/2030	34.57	33.75	35.85	32.88	34.39	34.18	40.37	41.94	44.71	51.19	51.34	52.11	53.22	52.18	54.61	55.44	55.41	54.89	55.55	53.72	52.36	52.24	39.81	38.54
SPP South - Energy Price - 1H2023	2765	7/27/2030	7/27/2030	35.85	37.15	35.85	35.85	35.85	36.59	46.02	47.37	46.02	47.73	48.66	50.14	54.49	52.72	59.36	57.44	55.93	55.93	62.94	55.93	55.93	49.98	35.85	35.85
SPP South - Energy Price - 1H2023	2766	7/28/2030	7/28/2030	34.51	32.29	31.61	31.61	31.97	31.61	42.09	42.09	40.98	42.09	42.09	46.46	47.73	49.47	49.98	50.33	49.86	49.86	54.66	49.47	49.47	49.86	37.15	34.47
SPP South - Energy Price - 1H2023	2767	7/29/2030	7/29/2030	34.33	31.4	31.4	32.43	31.78	34.18	40.14	39.73	39.73	40.14	40.14	48.91	51.92	48.26	49.7	50.22	51.92	51.96	53.14	52.19	51.79	44.43	37.18	33.72
SPP South - Energy Price - 1H2023	2768	7/30/2030	7/30/2030	32.91	35.75	31.98	35.32	32.52	31.93	40.67	40.71	40.29	45.13	47.65	43.74	51.8	52.58	52.61	52.58	52.27	52.58	53.07	51.4	48.34	48.47	35.85	35.85
SPP South - Energy Price - 1H2023	2769	7/31/2030	7/31/2030	34.69	32.53	32.2	31.33	31.33	32.18	40.56	40.99	41.89	45.47	48.53	52.24	52.05	52.45	52.73	52.97	52.97	48.66	52.25	46.96	47.03	41.47	35.9	35.85
SPP South - Energy Price - 1H2023	2770	8/1/2030	8/1/2030	38.06	39.31	41.56	41.56	41.56	42.21	47.15	43.42	43.38	47.15	50.9	55.54	55.4	56.23	55.69	56.23	56.23	55.69	55.53	55.69	55.63	52.82	42.08	41.56
SPP South - Energy Price - 1H2023	2771	8/2/2030	8/2/2030	37.16	41.56	37.23	40.27	41.56	43.07	42.53	41.53	42.08	46.1	46.05	42.41	46.05	47.08	52.3	50.21	46.45	46.71	46.6	47.17	45.49	41.53	38.71	36.17
SPP South - Energy Price - 1H2023	2772	8/3/2030	8/3/2030	36.17	36.17	36.17	36.17	36.17	36.17	32.84	33.74	35.82	37.73	39.11	39.98	42.7	43.12	43.13	42.43	42.4	37.73	41.01	37.3	35.17	35.76	37.11	37.16
SPP South - Energy Price - 1H2023	2773	8/4/2030	8/4/2030	36.17	36.94	36.35	36.17	37.16	36.17	32.2	31.73	30.37	30.27	32.84	37.33	37.73	37.73	43.13	38.92	39.98	42.31	42.31	43.98	43.53	37.73	39.89	38.12
SPP South - Energy Price - 1H2023	2774	8/5/2030	8/5/2030	34.11	34.1	34.11	34.1	34.11	36.03	38.64	38.64	38.64	39.95	41.4	43.08	42.63	49.04	49.35	49.64	49.83	49.81	49.01	49.64	43.84	43.74	40.3	40.3
SPP South - Energy Price - 1H2023	2775	8/6/2030	8/6/2030	41.56	41.56	40.82	39.16	39.16	42.07	45.31	44.07	43.4	43.43	46.79	48.36	53.71	55.63	55.88	56.47	56.43	56.3	55.88	55.73	54.71	48.36	41.56	41.56
SPP South - Energy Price - 1H2023	2776	8/7/2030	8/7/2030	40.68	38.8	38.8	38.8	39.88	39.88	44.1	43.59	42.09	44.1	44.1	44.1	46.42	47.6	47.6	47.58	46.99	47.58	47.56	49.17	47.49	44.1	41.07	40.35
SPP South - Energy Price - 1H2023	2777	8/8/2030	8/8/2030	40.35	40.35	39.26	37.12	39.26	39.32	44.02	42.55	44.55	44.02	44.55	44.55	46.43	49.72	44.55	49.72	52.98	53.03	49.94	49.72	44.55	44.55	40.35	40.35
SPP South - Energy Price - 1H2023	2778	8/9/2030	8/9/2030	40.11	40.11	40.11	40.11	40.11	41.56	43.81	43.81	42.64	43.81	43.81	44.05	46.32	49.45	49.45	49.45	44.33	51.13	52.76	49.45	45.26	44.41	41.27	40.2
SPP South - Energy Price - 1H2023	2779	8/10/2030	8/10/2030	40.11	40.11	39.8	39.27	39.03	39.03	35.44	35.44	35.44	35.98	35.75	36.42	38.3	38.65	37.73	37.73	37.73	39.64	36.42	37.89	39.17	37.73	41.56	41.08
SPP South - Energy Price - 1H2023	2780	8/11/2030	8/11/2030	40.89	40.11	41.28	40.11	40.11	40.11	36.42	36.42	36.03	35.98	36.75	37.73	37.73	41.13	40.36	40.36	43.27	43.27	41.13	43.26	41.13	38.84	41.27	41.52
SPP South - Energy Price - 1H2023	2781	8/12/2030	8/12/2030	40.5	40.5	39.4	40.27	40.5	41.45	44.24	44.16	44.69	46.72	44.69	50.01	56.88	57.18	57.78	58.23	58.05	56.88	51.11	52.5	52.33	48.62	41.56	40.5
SPP South - Energy Price - 1H2023	2782	8/13/2030	8/13/2030	40.4	40.23	39.56	39.56	40.36	40.48	44.09	44.45	44.22	45.76	50.97	56.27	56.79	57.09	57.16	59.45	53.15	50.05	50.69	50.51	52.09	49.83	43.03	41.56
SPP South - Energy Price - 1H2023	2783	8/14/2030	8/14/2030	37.05	37.05	37.22	36.06	33.74	37.05	37.8	38.13	37.8	37.8	39.38	40.93	41.92	41.99	49.2	42.25	43.64	43.3	49.63	46.11	43.12	41.99	36.76	35.83
SPP South - Energy Price - 1H2023	2784	8/15/2030	8/15/2030	35.17	34.72	32.68	33.01	34.2	35.64	35.05	35.05	34.81	35.13	36.77	38.18	40.4	40.4	45.23	45.23	42.5	44.6	44.6	44.64	44.15	40.38	38.35	40.2
SPP South - Energy Price - 1H2023	2785	8/16/2030	8/16/2030	34.85	32.83	34.01	33.45	32.83	35.05	36.35	37.63	35.42	40.15	38.43	39.91	40.38	42.04	42.27	44.01	42.27	44.01	44.01	42.27	40.06	38.13	38.4	37.96
SPP South - Energy Price - 1H2023	2786	8/17/2030	8/17/2030	35.05	35.05	34.69	35.05	35.05	35.05	31.82	32.47	34.77	37.41	35.88	41.17	40.91	43.77	41.25	41.25	41.25	41.25	38.45	37.73	36.43	37.15	38.4	35.73
SPP South - Energy Price - 1H2023	2787	8/18/2030	8/18/2030	35.05	33.6	33.6	32.83	32.22	32.83	31.42	31.04	30.5	31.82	33.67	37.73	33.96	39.11	35.03	37.73	34.11	34.42	37.73	41.01	37.73	37.73	38.4	37.99
SPP South - Energy Price - 1H2023	2788	8/19/2030	8/19/2030	40.22	40.41	38.52	38.36	35.84	39.07	41.66	40.28	38.73	40.83	43.49	43.17	42.99	43.29	44.46	42.91	42.91	42.85	44.09	44.46	45.02	43.82	40.17	37.24
SPP South - Energy Price - 1H2023	2789	8/20/2030	8/20/2030	41.56	40.23	40.29	39.99	39.99	41.56	44.21	43.69	43.69	47.6	48.18	50.73	50.46	50.93	50.83	57.39	50.26	50.91	53.2	52.73	51.31	50.64	41.56	41.56
SPP South - Energy Price - 1H2023	2790	8/21/2030	8/21/2030	41.56	41.56	41.08	41.08	41.08	42.77	47.43	45.24	43.32	47.34	49.35	50.56	51.82	52.01	53.59	53.44	52.95	53.18	59.31	59.31	54	52.91	45.63	42.36
SPP South - Energy Price - 1H2023	2791	8/22/2030	8/22/2030	41.56	41.56	41.56	41.56	41.56	45.08	48.86	45.55	44.93	50.15	52.54	51.87	52.79	58.57	54.85	58.8	62.7	60.33	71.75	66.08	60.68	57.44	56.31	54.46
SPP South - Energy Price - 1H2023	2792	8/23/2030	8/23/2030	46.74	45.14	46.74	44.73	45.62	46.74	48.66	47.92	47.8	45.52	53.23	56.01	57.43	58.83	64.29	64.29	64.33	64.33	64.29	62.97	57.85	53.97	52.66	50.46
SPP South - Energy Price - 1H2023	2793	8/24/2030	8/24/2030	43.6	42.46	41.56	41.56	43.07	42.46	38.55	39.12	38.07	40.61	47.4	46.6	51.42	53.62	56.4	60.18	60.18	63.51	62.57	57.06	54.05	53.14	50.6	46.74
SPP South - Energy Price - 1H2023	2794	8/25/2030	8/25/2030	43.6	42.34	41.56	40.64	40.05	41.56	37.73	35.91	38.86	42.43	42.88	44.47	42.43	50.55	46.63	50.58	53.14	52.68	51.29	47.3	47.68	42.55	41.56	42.4
SPP South - Energy Price - 1H2023	2795	8/26/2030	8/26/2030	41.56	41.56	41.56	42.86	41.56	41.56	43.92	43.92	43.92	46.27	51.57	48.95	54.74	54.22	56.7	56.98	56.98	56.7	55.53	55.4	52.06	48.95	43.96	41.56
SPP South - Energy Price - 1H2023	2796	8/27/2030	8/27/2030	41.27	41.19	40.8	40.15	40.15	41.27	45.42	45.42	44.86	45.42	50.78	49.41	50.78	49.61	59.07	50.99	51.63	52.36	54.51	54.21	50.78	50.78	41.56	41.27
SPP South - Energy Price - 1H2023	2797	8/28/2030	8/28/2030	41.41	41.31	41.4	41.41	40.28	41.41	44.99	44.99	44.99	48.29	50.93	58.55	59.25	61.73	66.91	67.02	67.06	66.91	66.91	65.01	60.31	58.97	58.88	49.24
SPP South - Energy Price - 1H2023	2798	8/29/2030	8/29/2030	43.73	41.93	41.56	41.93	41.93	44.21	50.57	48.76	49.54	50	52.08	53.59	54.13	57.49	60.25	60.29	60.29	60.29	58.78	60.29	55.12	54.04	49.89	44.63
SPP South - Energy Price - 1H2023	2799	8/30/2030	8/30/2030	42.91	43.41	42.16	43.01	44.63	45.69	51.7	54.02	55.77	55.34	57.6	59.55	59.55	59.55	60.01	63.27	60.2	60.72	59.55	53.43	52.55	53.36	44.4	44.89
SPP South - Energy Price - 1H2023	2800	8/31/2030	8/31/2030	42.91	41.64	42.16	41.64	41.64	41.89	37.8	37.8	37.8	37.8	44.58	48.93	54.79	54.79	55.98	55.98	55.98	50.4	55.98	51.1	49.04	42.01	42.46	42.96
SPP South - Energy Price - 1H2023	2801	9/1/2030	9/1/2030	36.32	36.66	36.05	36.05	36.05	36.32	46.8	46.8	46.8	46.8	46.8	51.77	58.61	58.08	57.72	56.86	57.75	55.24	55.72	58.08	60.49	59.44	36.61	36.32
SPP South - Energy Price - 1H2023	2802	9/2/2030	9/2/2030	36.32	36.32	36.32	36.05	36.32	36.48	44.08	41.26	41.26	42.88	46.33	46.69	46.66	46.69	45.74	46.69	46.69	54.32	52.71	52.49	52.78	51.56	44.53	42.87
SPP South - Energy Price - 1H2023	2803	9/3/2030	9/3/2030	36.32	37.64	37.64	37.64	37.64	40.47	45.35	41.47	41.03	42.19	44.28	45.97	44.71	45.02	45.02	45.02	45.02	45.02	45.66	45.44	46.24	45.01	38.26	37.36
SPP South - Energy Price - 1H2023	2804	9/4/2030	9/4/2030	36.32	36.32	35.54	34.96	36.32	34.88	40.17	39.71	38.55	38.25	36.55	36.21	37.07	35.12	37.21	35.37	37.21	43.77	40.17	43.1	44.75	39.71	35	34.92
SPP South - Energy Price - 1H2023	2805	9/5/2030	9/5/2030	34.07	34.04	34.92	34.3	34.3	35.06	41.51	38.8	37.51	38.19	37.06	35.53	34.64	37.06	39.57	37.23	40.02	43.6	44.57	44.97	42.72	43.23	36.83	36.32
SPP South - Energy Price - 1H2023	2806	9/6/2030	9/6/2030	36.32	36.32	34.14	36.32	36.32	37.64	42.57	39.76	39.76	39.85	39.76	39.76	39.76	44.26	51.16	51.53	44.26	51.01	44.03	43.52	43.44	41.63	33.18	33.18
SPP South - Energy Price - 1H2023	2807	9/7/2030	9/7/2030	33.18	36.07	34.04	34.04	33.12	34.04	42.68	42.68	42.68	43.86	46.8	46.8	46.8	48.5	48.5	47.52	48.5	46.8	52.06	52.06	48.5	47.94	34.04	33.12
SPP South - Energy Price - 1H2023	2808	9/8/2030	9/8/2030	33.12	33.12	33.12	33.12	33.12	33.12	42.68	42.68	42.68	39.56	43.86	43.86	43.86	46.8	48.5	48.5	46.8	52.84	52.06	52.06	48.55	46.8	34.04	33.12
SPP South - Energy Price - 1H2023	2809	9/9/2030	9/9/2030	33.2	34.11	34.11	33.2	34.11	36.32	39.39	39.39	37.02	39.39	39.01	39.39	39.39	39.38	39.39	39.38	39.38	39.38	44.13	41.55	38.61	36.58	34.37	31.47
SPP South - Energy Price - 1H2023	2810	9/10/2030	9/10/2030	34.09	31.69	34.09	34.08	32.17	34.11	38.54	37.91	35.27	35.36	35.86	35.99	40.27	40.27	37.05	40.27	40.75	40.27	42.58	40.75	40.75	39.12	34.09	32.27
SPP South - Energy Price - 1H2023	2811	9/11/2030	9/11/2030	32.66	33.1	33.2	32.4	33.1	34.52	40.7	41.08	40.7	41.63	44.22	47.09	45.97	46	46	45.49	46	45.24	46.25	46.77	47.25	44.74	38.26	36.63
SPP South - Energy Price - 1H2023	2812	9/12/2030	9/12/2030	35.98	34.86	34.86	34.86	35.98	36.32	41.44	41.67	40.57	40.11	40.57	40.11	37.33	40.11	39.96	39.67	35.36	40.58	40.11	40.11	40.58	38.95	34.44	33.92
SPP South - Energy Price - 1H2023	2813	9/13/2030	9/13/2030	32.76	30.37	31.71	32.76	30.84	32.76	38.02	35.36	34.73	34.1	34.1	34.1	34.1	32.68	32.68	34.1	34.1	34.1	35.36	35.36	35.36	34.1	29.98	29.98
SPP South - Energy Price - 1H2023	2814	9/14/2030	9/14/2030	29.98	29.98	29.98	29.98	29.98	29.98	39.7	39.76	38.63	39.01	38.63	38.63	38.63	38.63	38.63	42.22	42.22	42.22	43.38	43.38	43.38	42.22	30.6	29.98
SPP South - Energy Price - 1H2023	2815	9/15/2030	9/15/2030	29.97	29.97	29.97	29.98	29.98	29.98	38.63	39.41	38.63	38.63	38.63	42.22	42.22	43.38	42.22	43.38	42.22	43.38	43.38	43.38	43.25	42.22	32.76	32.76
SPP South - Energy Price - 1H2023	2816	9/16/2030	9/16/2030	29.54	32.28	32.28	32.28	32.28	33.16	38.47	38.47	38.47	37.09	37.16	37.23	38.47	38.89	38.89	40.75	40.56	43.2	43.2	41.84	39.46	38.89	33.72	32.28
SPP South - Energy Price - 1H2023	2817	9/17/2030	9/17/2030	32.07	32.07	32.07	32.07	32.07	32.07	38.26	38.26	37.47	35.36	35.2	35.36	35.2	36.92	38.26	35.36	38.26	38.67	38.59	38.26	35.36	33.97	29.35	29.35
SPP South - Energy Price - 1H2023	2818	9/18/2030	9/18/2030	29.48	29.48	29.48	29.48	29.48	29.48	35.36	35.36	34.29	35.36	33.61	33.61	25.45	33.61	33.61	33.61	33.61	36.65	39.44	36.1	35.36	35.36	31.6	31.6
SPP South - Energy Price - 1H2023	2819	9/19/2030	9/19/2030	31.6	30.26	31.6	31.02	30.74	30.3	36.31	33.99	12.86	33.99	33.99	33.99	35.36	35.36	36.26	37.72	38.84	43.66	50.17	44.06	43.66	42.8	35.59	34.92
SPP South - Energy Price - 1H2023	2820	9/20/2030	9/20/2030	34.14	34.23	33.03	33.22	33.89	33.96	38.76	38.34	38.34	38.34	38.34	37.01	38.34	38.53	38.34	38.34	38.34	41.34	39.95	38.36	37.61	35.36	29.98	30.53
SPP South - Energy Price - 1H2023	2821	9/21/2030	9/21/2030	29.42	29.42	29.42	29.42	29.42	29.42	37.91	10.61	9.28	9.45	6.04	10.85	13.27	15.02	17.22	19.08	19.78	37.91	37.91	41.43	37.91	37.91	29.42	29.42

SPP South - Energy Price - 1H2023	2822	9/22/2030	9/22/2030	29.42	29.42	29.42	29.42	29.42	29.42	37.91	10.61	4.8	1.88	9.87	10.85	13.27	15.02	17.22	20.6	37.91	37.91	41.43	37.91	37.91	37.91	24.1	20.59
SPP South - Energy Price - 1H2023	2823	9/23/2030	9/23/2030	18.3	18.43	12.78	18.67	18.67	25.25	29.41	30.26	29.41	33.7	33.71	33.71	33.7	33.98	34.99	35.36	35.36	37.23	37.28	37.23	34.54	33.98	30.26	27.5
SPP South - Energy Price - 1H2023	2824	9/24/2030	9/24/2030	30.25	31.07	30.25	30.86	31.93	31.99	37.1	36.63	36.81	36.81	37.08	37.36	39.64	39.36	40.67	40.67	47.42	40.67	40.67	40.67	40.27	37.39	32.64	30.81
SPP South - Energy Price - 1H2023	2825	9/25/2030	9/25/2030	30.19	30.19	30.19	30.19	30.57	31.99	36.94	36.75	35.93	36.51	36.39	36.75	36.74	39.24	38.26	38.3	38.86	40.59	40.59	40.59	38.86	36.39	31.57	30.79
SPP South - Energy Price - 1H2023	2826	9/26/2030	9/26/2030	32.02	32.02	32.02	32.02	32.02	33.26	38.21	37.48	36.14	36.48	38.21	38.21	38.21	38.21	38.21	38.21	38.21	41.64	42.87	42.49	41.11	38.21	32.9	32.45
SPP South - Energy Price - 1H2023	2827	9/27/2030	9/27/2030	30.06	30.06	30.06	30.06	30.08	30.87	36.61	36.25	36.11	33.37	34.44	31.68	31.68	31.68	31.68	32.87	31.68	36.25	36.86	35.38	32.67	31.68	27.54	27.54
SPP South - Energy Price - 1H2023	2828	9/28/2030	9/28/2030	27.54	27.54	27.54	27.54	27.54	27.42	35.49	10.61	9.28	8.6	9.87	10.61	2.48	15.02	17.22	19.08	19.78	35.49	35.49	35.49	35.49	35.49	15.75	14.75
SPP South - Energy Price - 1H2023	2829	9/29/2030	9/29/2030	14.1	13.76	10.49	11.05	11.4	11.4	12.55	3.1	2.84	2.58	0	0	0	5.1	4.29	4.62	4.29	35.49	35.49	32.94	21.91	35.49	7.92	12.74
SPP South - Energy Price - 1H2023	2830	9/30/2030	9/30/2030	11.72	11.72	8.59	12.74	12.25	12.34	12.89	8.91	8.09	8.22	8.93	11.41	19.51	29.9	29.9	29.9	29.9	31.05	34.54	34.91	34.25	34.25	28.05	25.74
SPP South - Energy Price - 1H2023	2831	10/1/2030	10/1/2030	17.19	17.19	17.19	17.19	17.19	17.19	23.59	23.59	23.59	22.84	23.59	23.59	23.59	23.59	23.59	23.59	24.02	26.69	27.97	27.44	26.56	24.93	18.43	18.19
SPP South - Energy Price - 1H2023	2832	10/2/2030	10/2/2030	18.16	17.67	17.28	17.28	17.28	18.16	25.63	25.63	26.8	27.6	26.62	25.39	25.56	25.91	27.07	27.77	27.77	28.1	28.1	27.77	26.58	25.39	18.52	17.28
SPP South - Energy Price - 1H2023	2833	10/3/2030	10/3/2030	19.5	17.53	17.53	19.5	19.5	19.5	25.57	25.41	24.31	24	24	24	24	24	24	24.44	24.44	26.71	25.95	25.32	24	24	17.53	17.53
SPP South - Energy Price - 1H2023	2834	10/4/2030	10/4/2030	17.74	17.74	17.74	17.74	17.74	17.74	24.26	24.26	24.26	24.26	24.1	23.87	23.68	24.26	24.26	24.26	24.26	24.26	24.26	24.26	24.26	24.26	17.74	17.74
SPP South - Energy Price - 1H2023	2835	10/5/2030	10/5/2030	17.74	17.74	17.74	17.74	17.74	17.74	27.57	27.57	23.24	7.41	1.71	8.13	2.62	11.09	10.7	10.04	13.13	14.72	27.57	16.37	11.34	12.62	8.42	8.13
SPP South - Energy Price - 1H2023	2836	10/6/2030	10/6/2030	8.38	7.83	8.56	17.74	17.74	17.74	27.57	26.53	10.45	7.41	8.06	8.97	10.45	10.61	12.6	11.59	27.57	30.67	31.1	30.67	30.67	27.57	17.74	19.06
SPP South - Energy Price - 1H2023	2837	10/7/2030	10/7/2030	20.4	19.1	19.1	19.1	18.77	19.1	27.31	25.51	25.51	25.51	25.51	25.51	25.51	27.31	27.31	27.31	28.47	30.19	32.59	30.43	28.47	27.31	20.53	19.42
SPP South - Energy Price - 1H2023	2838	10/8/2030	10/8/2030	20.16	20.12	20.12	20.53	20.53	18.94	26.11	26.11	24.48	24.44	24.44	24.44	24.48	24.48	24.48	24.48	24.48	24.48	24.48	24.48	24.44	24.44	15.88	15.88
SPP South - Energy Price - 1H2023	2839	10/9/2030	10/9/2030	15.16	15.16	15.16	15.16	15.16	15.16	23.59	23.59	23.59	5.68	11.78	6.87	23.59	9.08	23.59	23.59	23.59	23.59	23.59	23.59	24.44	25.08	18.61	17.89
SPP South - Energy Price - 1H2023	2840	10/10/2030	10/10/2030	18.59	16.29	10.62	10.16	6.93	16.29	24.98	9.51	1.48	4.87	1.31	6.87	7.44	2.66	6.89	10.42	24.44	24.44	24.98	24.98	24.98	26.69	19.16	19.14
SPP South - Energy Price - 1H2023	2841	10/11/2030	10/11/2030	18.65	19.17	19.16	18.65	19.18	20.53	26.76	25.6	25.33	25.33	26.76	25.33	25.33	25.33	26.76	25.04	25.04	26.76	26.78	27.85	26.78	26.76	20.64	20.53
SPP South - Energy Price - 1H2023	2842	10/12/2030	10/12/2030	20.53	20.53	20.53	20.53	20.53	22.11	33.49	34.35	32.3	32.06	32.01	33.51	34.67	33.06	30.79	28.97	34.35	34.35	34.35	34.35	31.9	28.97	18.65	17.96
SPP South - Energy Price - 1H2023	2843	10/13/2030	10/13/2030	18.65	18.65	20.27	20.53	20.53	20.53	28.97	28.97	31.1	29.63	30.02	31.9	28.33	25.39	25.39	28.97	25.39	29.54	29.51	29.75	29.51	28.97	18.65	18.65
SPP South - Energy Price - 1H2023	2844	10/14/2030	10/14/2030	18.16	18.24	18.24	18.24	18.24	20.15	26.91	26.16	26.74	26.83	26.83	25.33	26.16	24.53	25.33	26.16	30.98	31.26	33.24	28.84	26.54	24.86	20.15	20.53
SPP South - Energy Price - 1H2023	2845	10/15/2030	10/15/2030	20.53	19.22	20.53	20.53	22.2	21.83	34.71	28.67	28.58	27.41	27.75	27.75	25.11	25.11	25.11	25.11	25.11	26.84	26.97	26.85	26.84	26.84	18.72	18.21
SPP South - Energy Price - 1H2023	2846	10/16/2030	10/16/2030	15.97	16.75	18.21	18.21	18.21	20.19	25.67	26.23	26.23	27.26	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.85	28.34	27.72	29.89	27.28	20.81	20.53
SPP South - Energy Price - 1H2023	2847	10/17/2030	10/17/2030	20.53	21.8	20.81	21.28	21.8	21.55	27.95	27.51	26.45	24.77	24.77	24.45	26.45	9.08	24.77	24.77	24.77	33.54	31.88	34.18	34.07	31.06	20.31	19.88
SPP South - Energy Price - 1H2023	2848	10/18/2030	10/18/2030	19.64	20.31	20.31	20.31	20.31	20.53	27.37	25.8	24.97	24.97	24.97	24.97	24.44	24.44	24.97	24.44	25.33	30.77	32	31.73	29.91	24.97	20.31	17.18
SPP South - Energy Price - 1H2023	2849	10/19/2030	10/19/2030	17.18	17.18	17.18	17.44	17.87	19.25	30.42	27.35	23.44	25.67	27.1	27.45	28.01	28.87	28.32	28.54	28.23	33.06	33.06	31.9	31.9	31.55	17.18	19.41
SPP South - Energy Price - 1H2023	2850	10/20/2030	10/20/2030	20.31	18.68	20.31	20.31	18.68	20.31	31.55	29.61	23.44	23.44	23.44	26.69	23.44	23.44	23.44	26.69	23.44	29.63	31.77	31.9	29.35	29.48	19.12	20.31
SPP South - Energy Price - 1H2023	2851	10/21/2030	10/21/2030	22.82	21	21	21.28	22.14	21.66	31.43	28.62	27.65	27.68	27.97	29.12	29.53	26.61	31.1	28.61	31.36	34.4	34.28	31.82	31.58	30.44	22.95	22.78
SPP South - Energy Price - 1H2023	2852	10/22/2030	10/22/2030	21.28	21.28	21.28	21.28	21.28	21.28	27.97	26.86	26.86	26.86	26.86	26.81	26.81	26.81	26.81	26.81	26.86	28.23	29.33	30.05	26.86	26.81	20.53	18.98
SPP South - Energy Price - 1H2023	2853	10/23/2030	10/23/2030	18.98	18.98	18.98	18.94	16.62	18.98	27.16	27.07	24.44	27.07	27.07	24.44	27.07	27.07	24.44	27.07	25.33	27.16	27.07	27.16	27.07	25.33	16.62	17.16
SPP South - Energy Price - 1H2023	2854	10/24/2030	10/24/2030	11.52	11.46	18.34	18.83	18.83	18.83	26.33	25.44	24.38	24.38	24.38	24.38	24.38	24.38	24.38	24.38	24.44	25.44	25.44	25.01	24.44	24.44	18.83	16.94
SPP South - Energy Price - 1H2023	2855	10/25/2030	10/25/2030	16.8	17.98	16.8	17.54	18.02	16.8	25.1	24.2	24.54	24.2	24.2	24.44	24.2	24.44	24.2	24.2	24.2	24.2	24.2	24.44	27.11	24.44	19.19	19.19
SPP South - Energy Price - 1H2023	2856	10/26/2030	10/26/2030	19.19	19.19	18.67	19.19	17.5	19.02	26.1	29.81	26.1	10.84	26.1	26.1	26.1	26.1	20.21	26.1	29.81	31.12	31.12	31.54	29.99	30.05	19.19	18.67
SPP South - Energy Price - 1H2023	2857	10/27/2030	10/27/2030	18.18	19.19	18.67	18.67	18.67	18.67	29.81	29.01	26.1	26.1	6.62	7.2	7.2	7.2	2.92	3.91	26.1	29.81	31.9	31.62	31.25	29.81	19.19	19.19
SPP South - Energy Price - 1H2023	2858	10/28/2030	10/28/2030	18.73	18.73	18.73	18.73	18.73	18.94	27.17	27.17	25.26	24.44	24.44	24.44	24.44	25.33	27.17	27.17	27.48	29.37	30.12	29.46	27.48	27.48	19.24	18.73
SPP South - Energy Price - 1H2023	2859	10/29/2030	10/29/2030	18.96	17.05	17.05	17.05	17.05	17.05	24.52	24.44	5.59	5.68	6.17	6.17	6.71	2.66	2.24	8.88	24.44	24.44	24.52	24.52	24.44	23.16	8.42	8.13
SPP South - Energy Price - 1H2023	2860	10/30/2030	10/30/2030	6.16	6.26	6.02	6.24	8.99	16.99	24.43	24.44	24.43	24.43	25.33	27.37	27.37	25.71	27.37	25.98	25.79	25.98	25.97	25.94	25.78	24.43	18.46	16.99
SPP South - Energy Price - 1H2023	2861	10/31/2030	10/31/2030	17.28	16.49	16.99	16.49	16.49	16.99	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	24.44	24.44	23.83	23.83	23.83	23.83	16.49	11.22
SPP South - Energy Price - 1H2023	2862	11/1/2030	11/1/2030	6.57	6.57	6.57	8.07	9.8	14.09	28.31	31.26	31.26	31.66	31.66	31.66	31.26	31.66	31.66	31.66	31.66	32.98	32.98	31.96	31.66	31.66	15.89	15.63
SPP South - Energy Price - 1H2023	2863	11/2/2030	11/2/2030	15.63	15.63	15.63	15.63	15.63	15.63	34.6	34.6	34.6	34.6	35.53	34.7	34.6	34.6	34.6	34.6	34.6	35.64	37.61	37.29	35.53	34.6	15.63	15.62
SPP South - Energy Price - 1H2023	2864	11/3/2030	11/3/2030	14.09	14.09	14.09	14.09	14.09	14.09	31.21	31.21	5.25	4.05	4.87	2.1	2.28	2.03	3.15	1.99	9.47	8.71	31.21	30.47	28.4	29.2	5.34	14.09
SPP South - Energy Price - 1H2023	2865	11/4/2030	11/4/2030	14.72	14.72	14.72	14.71	14.72	16.33	32.4	31.9	29.34	29.34	31.26	31.26	31.26	31.26	32.4	32.4	32.83	35.3	34.21	33.05	32.84	32.83	18.06	16.33
SPP South - Energy Price - 1H2023	2866	11/5/2030	11/5/2030	16.48	16.48	16.48	18.73	16.48	18.73	33.09	33.09	33.09	33.09	33.09	32.47	32.47	32.93	33.01	32.4	33.09	35.74	35.21	34.2	33.3	34.2	19.17	18.65
SPP South - Energy Price - 1H2023	2867	11/6/2030	11/6/2030	18.4	18.56	18.61	18.65	18.92	19.05	33.06	33.02	33.06	33.92	32.47	32.67	31.93	32.39	29.02	29.02	29.02	29.02	29.02	29.02	29.02	29.02	14.52	14.52
SPP South - Energy Price - 1H2023	2868	11/7/2030	11/7/2030	14.62	14.62	14.62	14.62	14.62	14.62	29.19	29.19	29.19	30.56	29.19	29.19	28.12	29.19	29.19	29.19	31.26	33.04	34.5	34.24	33.1	33.04	19.17	19.17
SPP South - Energy Price - 1H2023	2869	11/8/2030	11/8/2030	19.17	19.44	18.61	18.61	17.46	19.05	34.46	34.35	30.49	30.49	30.49	30.49	30.49	30.49	27.41	26.56	30.49	32.56	31.36	30.49	30.49	30.49	15.4	12.4
SPP South - Energy Price - 1H2023	2870	11/9/2030	11/9/2030	12.97	15.4	15.4	15.4	15.4	15.4	34.1	34.1	11.25	9.03	9.21	8.3	8.3	8.92	9.03	8.85	37.89	38.8	40.86	37.89	34.1	34.1	15.4	15.4
SPP South - Energy Price - 1H2023	2871	11/10/2030	11/10/2030	15.4	15.4	15.4	15.4	15.4	15.4	34.1	34.1	34.1	13.22	12.69	8.95	8.3	8.92	9.03	8.85	34.1	34.1	34.1	34.1	34.1	22.97	11.27	5.69
SPP South - Energy Price - 1H2023	2872	11/11/2030	11/11/2030	4.89	5.39	5.44	5.47	5.9	6.31	9.8	9.17	8.28	3.3	3.58	1.55	1.68	1.5	2.32	6.51	7.16	30.17	30.17	30.17	26.48	9.2	4.69	5
SPP South - Energy Price - 1H2023	2873	11/12/2030	11/12/2030	4.89	5.22	5.04	5.47	6.34	17.03	32.4	34.11	32.4	32.4	32.4	32.4	32.4	28.47	31.24	32.4	32.4	32.4	32.4	36.42	32.4	32.4	17.03	8.72
SPP South - Energy Price - 1H2023	2874	11/13/2030	11/13/2030	17.57	17.57	17.57	17.57	17.57	18.07	34.73	38.25	38.25	35.19	38.25	38.25	34.03	33.3	34.03	35.19	38.25	40.7	40.7	38.25	37.39	38.25	19.57	19.57
SPP South - Energy Price - 1H2023	2875	11/14/2030	11/14/2030	19.17	17.39	17.39	17.39	17.39	17.39	32.42	32.42	31.26	31.26	6.79	6.12	6.11	6.57	6.65	6.52	32.4	32.41	32.41	32.41	32.41	32.4	17.39	17.39
SPP South - Energy Price - 1H2023	2876	11/15/2030	11/15/2030	16.04	16.04	16.04	16.04	16.04	16.04	30.17	30.17	30.17	30.16	6.79	11.19	12.61	29.34	30.16	30.17	33.16	33.99	35.35	30.17	31.36	31.26	17.44	16.73
SPP South - Energy Price - 1H2023	2877	11/16/2030	11/16/2030	16.04	16.04	16.04	16.04	16.04	16.04	39.49	35.52	35.52	35.51	35.51	35.51	8.3	12.74	9.03	8.85	17.2	35.52	35.52	35.51	35.51	35.51	9.72	5.69
SPP South - Energy Price - 1H2023	2878	11/17/2030	11/17/2030	5.75	5.85	5.62	5.82	5.9	5.85	35.51	32.67	33.93	35.51	35.51	35.51	35.51	32.77	10.11	35.52	35.52	35.52	35.52	35.51	35.51	35.52	16.04	16.04
SPP South - Energy Price - 1H2023	2879	11/18/2030	11/18/2030	14.45	14.45	14.45	14.45	14.45	14.45	27.52	27.52	27.52	27.52	27.52	27.52	26.96	27.52	27.52	27.52	27.52	31.35	27.52	27.52	27.52	27.52	14.45	14.45
SPP South - Energy Price - 1H2023	2880	11/19/2030	11/19/2030	16.06	17.86	17.86	17.86	17.87	18.21	34.3	35.82	33.09	31.26	31.3	32.54	31.52	31.3	32.37	33.8	34.96	36.4	35.55	34.96	34.89	35.39	17.86	18.5
SPP South - Energy Price - 1H2023	2881	11/20/2030	11/20/2030	18.74	18.74	18.75	18.74	18.58	18.74	36.87	38.84	36.87	36.87	34.74	34.38	34.37	36.87	32.96	34.24	36.87	41.13	42.1	39.11	42.1	37.22	20.18	18.75
SPP South - Energy Price - 1H2023	2882	11/21/2030	11/21/2030	18.44	18.44	17.48	17.36	17.85	17.85	31.73	31.73	31.73	31.26	6.79	6.12	6.11	6.57	6.65	6.52	7.16	31.73	31.73	31.73	31.73	31.73	16.57	17.9
SPP South - Energy Price - 1H2023	2883	11/22/2030	11/22/2030	17.91	16.41	16.8	17.9	17.91	17.91	33.13	34.57	31.94	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	32.71	32.9	30.96	30.96	30.96	16.11	16.11
SPP South - Energy Price - 1H2023	2884	11/23/2030	11/23/2030	16.11	16.11	16.11	16.11	17.91	17.91	39.66	39.66	39.66	39.66	35.67	35.67	35.67	35.67	35.67	35.67	35.67	39.66	39.66	39.66	39.66	39.66	18.41	18.41
SPP South - Energy Price - 1H2023	2885	11/24/2030	11/24/2030	17.91	17.91	17.91	17.91	16.11	16.11	35.67	36.53	38.77	38.77	35.67	35.67	14.6	2.03	3.15	1.99	35.67	38.77	35.67	35.67	35.67	35.67	16.11	16.11
SPP South - Energy Price - 1H2023	2886	11/25/2030	11/25/2030	18.31	18.31	18.31	18.31	18.31	19.17	34.63	34.63	34.63	34.63	34.63	34.63	34.63	39.6	39.6	34.63	39.67	39.67	40.21	39.67	39.67	39.67	20.42	20.42
SPP South - Energy Price - 1H2023	2887	11/26/2030	11/26/2030	19.87	19.17	19.17	17.96	19.17	19.87	38.99	38.99	38.99	35.87	35.87	38.99	38.99	38.99	38.99	38.99	35.87	38.99	36.36	38.99	38.99	35.58	19.17	17.96
SPP South - Energy Price - 1H2023	2888	11/27/2030	11/27/2030	17.69	17.69	17.69	17.69	17.69	17.69	33.59	38.48	38.49	38.48	38.49	38.48	38.48	38.48	38.49	38.49	38.49	39	41.4	38.51	38.49	38.49	19.71	19.71
SPP South - Energy Price - 1H2023	2889	11/28/2030	11/28/2030	19.71	19.71	19.6	19.17	19.71	19.71	35.19	37.3	33.59	33.59	33.59	33.59	33.59	33.59	33.59	33.59	36.51	38.48	38.26	37.52	33.59	33.59	19.17	19.71
SPP South - Energy Price - 1H2023	2890	11/29/2030	11/29/2030	18.23	18.42	18.32	17.67	17	16.39	31.43	31.43	31.43	31.43	31.26	31.26	31.43	28.91	28.91	28.14	31.26	31.43	31.69	31.43	31.43	31.43	16.39	16.39
SPP South - Energy Price - 1H2023	2891	11/30/2030	11/30/2030	16.39	16.39	16.39	16.39	16.39	16.39	36.29	40.37	36.29	36.29	36.49	36.9	37.16	41.49	41.49	40.37	40.37	40.37	42.11	40.78	40.37	40.37	17.49	17.49
SPP South - Energy Price - 1H2023	2892	12/1/2030	12/1/2030	31.82	31.82	32.02	31.82	31.82	31.82	36.52	36.52	36.52	32.79	32.79	32.79	32.79	32.79	32.79	32.79	32.79	36.52	36.27	36.27	34.6	33.36	32.02	31.82
SPP South - Energy Price - 1H2023	2893	12/2/2030	12/2/2030	27.22	27.22	27.22	27.22	27.22	27.6	30.83	32.59	31.99	32.4	32.81	31.41	33.27	33.43	33.51	32.93	33.55	34.35	33.86	32.59	32.92	32.52	32.02	32.2
SPP South - Energy Price - 1H2023	2894	12/3/2030	12/3/2030	32.02	31.96	31.73	31.56	31.28	32.09	33.2	33.27	32.07	31.5	29.78	28.59	27.47	28.71	28.71	27.47	31.42	32.64	33.28	34.88	34.16	33.72	31.64	31.89
SPP South - Energy Price - 1H2023	2895	12/4/2030	12/4/2030	30.64	31.64	31.64	31.64	31.64	28.6	32.14	33.67	33.48	31.29	29.78	29.78	29.78	29.78	29.78	29.78	31.81	35.28	35.56	33.42	34.61	34.31	32.6	32.6
SPP South - Energy Price - 1H2023	2896	12/5/2030	12/5/2030	32.21	32.85	32.78	32.02	32.6	32.09	33.1	34.49	32.74	32.01	31.37	32.74	32.74	32.74	30.54	32.74	32.74	33.1	33.1	34.49	33.1	33.1	32.02	29.61
SPP South - Energy Price - 1H2023	2897	12/6/2030	12/6/2030	32.02	32.02	32.02	32.04	30.46	30.05	33.08	35.66	34.03	31.66	31.23	31.83	31.68	31.68	31.3	31.3	32.65	36.25	40.94	38.71	36.45	36.25	35.15	32.92
SPP South - Energy Price - 1H2023	2898	12/7/2030	12/7/2030	32.02	32.04	32.22	32.02	32.92	32.09	37.78	38.14	37.78	36.75	32.99	33.8	36.74	32.99	33.8	34.96	33.8	38.09	37.78	36.74	36.74	36.74	32.02	32.02
SPP South - Energy Price - 1H2023	2899	12/8/2030	12/8/2030	32.02	31.32	28.75	28.75	28.75	28.75	32.99	35.86	32.99	32.99	10.3	8.58	10.52	32.99	32.99	32.99	36.74	36.75	36.75	36.74	36.74	36.74	28.75	28.75
SPP South - Energy Price - 1H2023	2900	12/9/2030	12/9/2030	30.56	30.56	30.56	28.75	30.56	30.57	32.96	32.96	28.63	8.2	7.58	6.95	24.76	7.78	10.91	32.96	33.63	37.75	38.28	38.28	37.75	38.28	33.59	33.19
SPP South - Energy Price - 1H2023	2901	12/10/2030	12/10/2030	33.58	34.1	34.43	34.28	34.39	34.56	38.74	42.86	40.92	38.74	38.21	36.39	32.95	32.95	33.37	32.95	36.71	36.71	36.92	36.71	38.21	36.71	34.56	34.56
SPP South - Energy Price - 1H2023	2902	12/11/2030	12/11/2030	35.49	35.49	35.49	35.49	35.49	35.49	41.65	44.14	44.29	39.66	39.66	37.39	35.97	34.89	35.97	34.36	35.97	39.1	39.66	39.66	39.1	39.1	35.49	33.19
SPP South - Energy Price - 1H2023	2903	12/12/2030	12/12/2030	33.19	34.39	36.39	37.05	34.34	33.18	37.28	37.23	36.67	37.19	36.78	35.03	35.03	35.03	35.17	35.95	36.57	40.59	41.2	38.05	36.24	40.59	36.2	35.33
SPP South - Energy Price - 1H2023	2904	12/13/2030	12/13/2030	32.02	32.02	32.02	32.02	32.02	32.02	37.43	37.43	32.43	32.26	32.26	32.26	29.78	29.78	29.78	32.26	33.06	33.55	32.39	32.95	32.26	32.26	30.9	30.27

SPP South - Energy Price - 1H2023	2905	12/14/2030	12/14/2030	30.27	30.27	30.27	30.27	30.27	30.27	34.73	36.75	34.73	34.73	34.73	22.22	34.73	34.73	34.73	36.75	37.76	38.72	38.72	38.72	38.72	34.73	30.27	30.27
SPP South - Energy Price - 1H2023	2906	12/15/2030	12/15/2030	30.27	30.27	30.27	30.27	30.27	30.27	34.73	34.73	34.73	34.73	36.75	36.75	36.75	34.73	34.73	36.75	36.75	39.82	41.02	38.72	39.82	39.78	34.7	33.74
SPP South - Energy Price - 1H2023	2907	12/16/2030	12/16/2030	32.41	33.47	33.28	33.34	32.88	33.19	34.62	37.19	36.66	32.05	32.05	32.05	32.05	32.05	32.05	32.05	34.84	36.86	37.19	32.05	32.05	32.05	30.04	30.04
SPP South - Energy Price - 1H2023	2908	12/17/2030	12/17/2030	29.84	29.84	29.84	29.84	29.84	31.36	31.86	33.36	31.86	31.86	31.86	31.86	31.86	31.86	31.23	31.86	31.86	35.29	36.97	36.97	36.97	36.97	33.25	32.69
SPP South - Energy Price - 1H2023	2909	12/18/2030	12/18/2030	32.41	32.76	32.76	32.76	32.65	32.02	33.97	31.45	31.45	31.45	31.45	31.45	31.45	31.45	31.45	31.45	31.45	32.9	36.98	36.5	37.48	36.5	35.75	32.67
SPP South - Energy Price - 1H2023	2910	12/19/2030	12/19/2030	31.59	31.31	31.35	30.18	29.8	29.59	30.01	31.27	30.01	30.01	30.01	29.78	30.01	29.78	30.01	30.01	30.01	31.05	31.14	31.21	30.19	32.12	31.04	31.5
SPP South - Energy Price - 1H2023	2911	12/20/2030	12/20/2030	29.5	29.62	29.49	29.49	29.5	29.49	30.96	32.99	32.63	32.95	30.86	29.78	29.78	29.78	28.55	29.78	29.78	32.64	32.99	32.99	32.99	32.99	32.83	32.35
SPP South - Energy Price - 1H2023	2912	12/21/2030	12/21/2030	32.09	32.02	31.63	32.02	30.89	31.77	36.94	36.83	37.35	37.19	36.75	33.85	33.85	32.94	33.85	33.85	35.78	36.75	36.95	36.75	36.75	37.12	32.02	32.2
SPP South - Energy Price - 1H2023	2913	12/22/2030	12/22/2030	30.16	29.62	29.66	29.49	30.18	29.62	36.75	36.83	38.09	39.84	38	37.4	36.75	36.75	36.75	36.65	37.38	40.9	43.08	40.73	40.15	38.9	32.83	32.67
SPP South - Energy Price - 1H2023	2914	12/23/2030	12/23/2030	32.41	33.24	33.28	33.11	32.65	32.09	33.36	35.46	35.59	35.73	32.98	32.98	29.78	29.78	29.78	28.44	30.18	33.18	33.36	33.36	33.17	33.36	32.9	31.5
SPP South - Energy Price - 1H2023	2915	12/24/2030	12/24/2030	29.62	29.62	30.1	29.58	26.64	26.64	28.82	28.82	28.82	28.82	28.82	6.95	6.63	6.39	6.72	28.36	28.82	29.65	30.63	31.59	30.63	30.63	29.62	30.05
SPP South - Energy Price - 1H2023	2916	12/25/2030	12/25/2030	30.05	30.06	30.05	29.93	29.62	30.44	33.5	33.5	33.5	33.5	33.5	30.86	30.86	29.78	29.78	29.78	30.82	33.89	33.89	33.89	33.89	33.89	32.02	30.63
SPP South - Energy Price - 1H2023	2917	12/26/2030	12/26/2030	31.42	30.19	31.28	30.63	30.55	30.35	33.37	35.69	35.74	33.2	30.37	29.78	28.9	28.56	28.57	28.56	29.78	33.37	31.32	29.87	31.05	31.05	29.3	29.05
SPP South - Energy Price - 1H2023	2918	12/27/2030	12/27/2030	28.85	25.96	28.85	25.96	28.85	29.64	32.77	32.77	32.77	32.77	32.77	32.77	31.08	30.86	29.78	29.78	32.14	32.77	32.77	32.77	32.64	31.49	29.64	29.05
SPP South - Energy Price - 1H2023	2919	12/28/2030	12/28/2030	28.85	28.85	29.43	29.49	29.64	29.64	34.46	35.53	34.02	33.11	29.8	31.72	29.8	29.8	29.8	29.8	29.9	35.54	34.02	33.11	34.02	34.02	29.07	28.85
SPP South - Energy Price - 1H2023	2920	12/29/2030	12/29/2030	28.85	28.85	29.43	28.85	28.85	27.83	33.11	34.02	30.73	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	34.02	35.93	36	35.93	35.93	32.02	32.02
SPP South - Energy Price - 1H2023	2921	12/30/2030	12/30/2030	28.27	28.27	28.27	28.27	28.27	28.27	31.43	31.68	31.66	30.13	30.13	30.13	30.13	30.13	30.26	31.11	31.4	32.78	35.27	32.78	35.27	31.43	31.41	30.24
SPP South - Energy Price - 1H2023	2922	12/31/2030	12/31/2030	29.27	29.81	31.19	31.19	31.19	31.19	35	35.43	35.43	35.43	35	35	35	35	34.99	35	32.6	34.63	34.99	32.79	31.42	31.21	28.02	29.78
SPP South - Energy Price - 1H2023	2923	1/1/2031	1/1/2031	28	28	28	28	28	28	33.48	33.99	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	34.73	36.58	35.22	33.5	33.48	33.48	31.18	28
SPP South - Energy Price - 1H2023	2924	1/2/2031	1/2/2031	30.98	30.98	30.98	30.98	31.26	30.98	36.65	36.65	36.65	36.62	36.65	36.65	36.41	36.65	36.65	36.65	36.65	40.45	42.81	42.81	37.02	36.65	31.3	30.98
SPP South - Energy Price - 1H2023	2925	1/3/2031	1/3/2031	29.85	29.85	29.85	29.85	29.85	29.85	35.46	35.46	35.46	35.46	35.45	32.73	32.73	33.92	35.46	35.46	35.46	35.46	35.46	35.46	35.46	35.45	29.85	29.85
SPP South - Energy Price - 1H2023	2926	1/4/2031	1/4/2031	29.85	29.85	29.85	29.85	29.85	29.85	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	41.52	43.02	39.6	39.6	39.6	29.85	29.85
SPP South - Energy Price - 1H2023	2927	1/5/2031	1/5/2031	29.85	29.85	29.85	29.85	29.85	29.85	39.6	39.6	39.6	39.6	38.93	33.35	38.36	10.58	10.02	39.6	39.6	39.6	39.6	39.6	39.6	39.6	29.85	29.85
SPP South - Energy Price - 1H2023	2928	1/6/2031	1/6/2031	27.24	27.24	27.24	27.24	27.24	27.24	32.67	32.67	32.67	32.67	32.67	32.67	32.67	8.57	6.37	6.48	30.35	32.67	32.67	32.67	32.67	32.67	27.24	27.24
SPP South - Energy Price - 1H2023	2929	1/7/2031	1/7/2031	27.04	27.04	27.04	27.04	27.04	27.04	35.29	35.29	32.46	32.46	32.46	32.46	32.46	32.46	32.46	32.46	33.43	38.01	38.48	38.48	38.48	38.01	31.3	30.1
SPP South - Energy Price - 1H2023	2930	1/8/2031	1/8/2031	28.7	30.13	30.11	30.27	29.92	30.27	37.11	36.94	34.63	31.86	32.05	31.86	31.86	31.86	31.86	31.86	31.86	34.76	35.99	34.76	34.81	34.47	27.26	26.96
SPP South - Energy Price - 1H2023	2931	1/9/2031	1/9/2031	27.32	26.55	26.7	28.9	27.32	29.2	34.79	36.16	31.63	31.63	31.63	31.63	31.63	31.63	31.63	31.63	31.63	35.93	37.06	37.06	37.05	35.93	27.68	27.39
SPP South - Energy Price - 1H2023	2932	1/10/2031	1/10/2031	26.5	27.23	27.23	27.23	27.23	27.23	34.16	34.51	34.51	34.59	34.51	34.16	31.64	31.62	30.19	29.78	29.79	33.99	34.16	34.16	33.82	32.26	27.23	23.88
SPP South - Energy Price - 1H2023	2933	1/11/2031	1/11/2031	23.88	23.88	23.88	24.08	23.88	23.88	31.68	34.43	31.68	31.68	31.68	31.68	31.68	31.68	31.68	31.68	31.68	35.02	36.11	36.11	35.16	35.02	25.26	25.48
SPP South - Energy Price - 1H2023	2934	1/12/2031	1/12/2031	24.91	25.57	23.98	23.88	23.88	23.88	31.68	33.42	31.68	31.68	11.19	10.01	9.16	8.55	8.07	8.22	31.68	31.68	31.68	31.68	31.68	31.68	23.88	23.88
SPP South - Energy Price - 1H2023	2935	1/13/2031	1/13/2031	27.67	27.98	27.17	29.63	28.1	31.3	35.82	38.94	38.94	38.64	38.64	38.64	38.64	35.82	35.82	35.82	35.82	38.64	42.27	42.22	39.62	38.94	34.46	35.95
SPP South - Energy Price - 1H2023	2936	1/14/2031	1/14/2031	33.06	33.06	33.06	32.43	31.74	39.15	46.43	52.88	53.63	46.43	48.67	46.43	46.43	42.53	42.83	46.23	39.96	37.69	37.96	37.64	37.64	37.64	28.85	28.85
SPP South - Energy Price - 1H2023	2937	1/15/2031	1/15/2031	28.71	29.82	29.74	28.78	31.3	31.3	40.58	40.58	40.58	37.49	37.49	37.49	37.49	37.49	37.49	37.49	37.49	40.58	43.36	43.67	40.58	37.49	31.3	31.3
SPP South - Energy Price - 1H2023	2938	1/16/2031	1/16/2031	31.3	31.3	31.3	31.3	31.46	31.3	39.04	40.91	39.04	36.35	36.17	36.17	38.9	39.04	39.52	39.04	39.04	46.57	46.57	46.57	40.23	38.61	31.3	31.3
SPP South - Energy Price - 1H2023	2939	1/17/2031	1/17/2031	31.3	31.3	31.3	31.3	31.3	31.3	40.81	40.81	41.58	42.18	43.51	43.45	40.56	40	39.07	36.99	36.99	40	41.05	40	36.99	36.99	31.3	31.3
SPP South - Energy Price - 1H2023	2940	1/18/2031	1/18/2031	31.3	28.25	28.25	28.25	28.25	28.25	37.47	37.47	41.43	40.73	37.47	37.47	41.52	41.52	37.47	37.47	37.47	41.52	42.92	42.92	41.52	42.92	32.36	32.36
SPP South - Energy Price - 1H2023	2941	1/19/2031	1/19/2031	32.36	31.3	31.3	31.81	31.3	31.3	41.52	42.19	37.47	37.47	37.47	37.47	37.47	37.47	37.47	41.52	41.52	42.92	51.11	51.11	43.02	42.92	31.3	31.3
SPP South - Energy Price - 1H2023	2942	1/20/2031	1/20/2031	31.3	31.3	31.3	31.3	31.3	31.7	39.3	39.3	36.39	36.39	36.39	32.73	32.73	34.41	6.37	32.63	32.16	34.39	36.39	35.7	36.39	35.58	27.7	27.7
SPP South - Energy Price - 1H2023	2943	1/21/2031	1/21/2031	31.9	10.32	18.6	32.14	31.3	33.13	39.22	42.26	40.75	39.5	35.9	35.83	32.73	36.44	36.08	33.98	42.26	42.26	42.26	42.26	47.38	46.13	38.09	37.91
SPP South - Energy Price - 1H2023	2944	1/22/2031	1/22/2031	39.54	39.8	39.9	35.71	34.81	36.57	44.96	48.24	44.96	44.96	40.76	36.24	33.92	34.87	32.73	36.24	36.22	44.96	44.96	44.96	44.96	44.96	34.81	34.81
SPP South - Energy Price - 1H2023	2945	1/23/2031	1/23/2031	31.2	31.2	31.2	31.2	31.2	31.2	41.05	41.05	41.05	41.05	41.05	41.05	39.15	39.06	41.05	31.75	37.76	41.05	43.31	44.24	41.05	41.05	31.2	31.2
SPP South - Energy Price - 1H2023	2946	1/24/2031	1/24/2031	30.78	30.78	30.78	30.78	30.78	30.78	40.59	40.59	32.73	9.52	6.37	6.37	6.37	1.59	6.37	6.48	6.23	40.59	52.51	52.51	54.98	49.9	35.32	35.32
SPP South - Energy Price - 1H2023	2947	1/25/2031	1/25/2031	32.5	32.5	34.46	35.32	32.5	35.32	46.85	46.85	41.52	40.82	14.73	12.91	10.82	8.55	8.07	8.22	40.82	40.82	46.77	46.67	46.76	46.85	35.32	32.43
SPP South - Energy Price - 1H2023	2948	1/26/2031	1/26/2031	32.5	35.32	32.5	35.32	35.32	35.32	46.85	46.85	46.85	41.52	40.82	40.82	40.82	40.82	40.82	9.74	11.07	46.55	46.85	46.85	43.02	43.02	31.3	31.3
SPP South - Energy Price - 1H2023	2949	1/27/2031	1/27/2031	30.78	30.78	31.3	31.3	30.57	30.57	39.38	39.38	39.38	39.38	38.3	37.42	33.92	32.73	37.63	38.09	38.33	39.38	39.38	39.38	39.38	39.38	30.57	30.57
SPP South - Energy Price - 1H2023	2950	1/28/2031	1/28/2031	29.59	29.59	29.64	30.57	31.3	31.3	39.47	47.15	47.54	39.84	38.47	37.92	36.98	34.31	32.73	34.08	35.85	37.04	37.04	37.04	36.93	36.91	28.84	28.75
SPP South - Energy Price - 1H2023	2951	1/29/2031	1/29/2031	25.39	27.73	28.21	31.15	31.45	32.43	36.73	36.73	36.73	35.05	33.92	35.82	34.77	34.31	32.73	34.57	34.76	36.73	41.44	37.88	36.73	39.75	35.12	32.65
SPP South - Energy Price - 1H2023	2952	1/30/2031	1/30/2031	30.8	29.97	29.97	29.97	29.97	30.14	38.34	43.53	36.53	34.72	34	34.69	33.75	33.75	33.54	34.3	34.73	37.87	40.46	38.34	38.34	38.34	31.3	31.3
SPP South - Energy Price - 1H2023	2953	1/31/2031	1/31/2031	32.06	31.3	31.3	31.3	31.3	31.66	40.47	41.01	35.66	35.66	35.66	35.66	32.73	31.78	33.92	27.08	5.7	35.66	36.88	35.66	35.66	35.66	29.06	29.06
SPP South - Energy Price - 1H2023	2954	2/1/2031	2/1/2031	20.37	20.37	20.37	20.37	20.37	20.37	29.9	29.9	30.29	29.9	29.9	25.98	5.83	5.77	5.71	5.71	5.49	29.9	31.52	29.9	29.9	29.9	21.47	20.37
SPP South - Energy Price - 1H2023	2955	2/2/2031	2/2/2031	21.21	21.47	21.47	21.47	21.47	21.47	31.52	32.51	32.51	32.66	31.52	31.52	30.37	29.9	29.9	29.9	29.9	30.43	30.16	30.36	30.26	30.42	20.37	20.37
SPP South - Energy Price - 1H2023	2956	2/3/2031	2/3/2031	21.02	21.02	21.02	21.02	21.02	21.02	33.96	33.96	33.96	30.68	6.23	5.65	5.5	5.65	3.6	1.12	3.34	19.4	28.41	29.75	29.75	30.83	21.02	19.77
SPP South - Energy Price - 1H2023	2957	2/4/2031	2/4/2031	18.47	19.77	19.77	19.77	19.77	19.77	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	32.18	35.82	34.19	32.18	19.77	19.77
SPP South - Energy Price - 1H2023	2958	2/5/2031	2/5/2031	18.49	18.49	18.49	18.49	18.49	18.49	31.56	34.88	33.23	33.99	32.52	31.6	31.14	30.76	31.14	30.37	30.37	31.56	32.74	34.46	34.88	34.88	21.47	21.16
SPP South - Energy Price - 1H2023	2959	2/6/2031	2/6/2031	21.47	21.47	21.47	21.47	19.39	21.04	33.86	32.82	31.69	31.66	31.66	31.62	31.36	31.19	31.29	31.62	31.62	31.66	32.37	32.28	32.37	33.78	21.58	21.49
SPP South - Energy Price - 1H2023	2960	2/7/2031	2/7/2031	21.49	21.47	21.47	21.47	21.49	21.49	36.21	41.22	36.21	35.75	35.74	34	32.76	31.5	31.5	31.5	31.5	34.92	35.61	35.72	35.75	36.21	22.09	21.49
SPP South - Energy Price - 1H2023	2961	2/8/2031	2/8/2031	21.47	20.97	21.47	20.64	19.29	19.77	31.54	31.54	31.52	28.32	28.32	28.32	28.32	28.32	28.32	5.8	5.49	8	28.32	30.78	28.32	28.32	19.29	19.29
SPP South - Energy Price - 1H2023	2962	2/9/2031	2/9/2031	19.29	19.29	19.29	19.29	19.29	19.29	28.32	30.78	30.54	28.32	28.32	28.67	28.63	28.32	28.32	28.32	28.32	28.69	31.52	31.52	30.26	28.32	19.29	19.29
SPP South - Energy Price - 1H2023	2963	2/10/2031	2/10/2031	18.42	17.99	17.99	17.99	17.99	18.45	29.83	31.33	30.45	29.34	29.34	29.34	28	5.45	5.39	24.08	26.99	30.76	31.6	31.56	31.53	30.32	19.17	18.48
SPP South - Energy Price - 1H2023	2964	2/11/2031	2/11/2031	17.82	17.82	17.82	17.82	17.82	18.86	31.32	33.37	30.21	29.09	29.09	29.09	5.5	5.45	5.39	5.39	5.18	29.09	29.09	29.09	29.09	29.09	17.82	17.82
SPP South - Energy Price - 1H2023	2965	2/12/2031	2/12/2031	18.41	18.41	18.41	8.77	18.41	18.41	29.93	30.63	29.93	22.55	0.99	1.06	1.05	1.03	0.98	1.12	2.68	29.75	31.66	34.32	34.32	34.32	21.06	20.49
SPP South - Energy Price - 1H2023	2966	2/13/2031	2/13/2031	19.69	19	19.07	20.16	20.26	20.28	31.78	34.03	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	31.65	31.64	30.81	18.95	18.23
SPP South - Energy Price - 1H2023	2967	2/14/2031	2/14/2031	17.63	17.63	17.63	17.63	17.63	19.6	30.54	31.54	28.83	28.83	28.83	28.83	28.83	24.18	25.95	5.39	5.18	28.83	29.95	28.83	28.83	28.83	17.63	17.63
SPP South - Energy Price - 1H2023	2968	2/15/2031	2/15/2031	17.63	17.63	17.63	17.63	17.63	17.63	25.89	29.08	25.99	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	17.63	17.63
SPP South - Energy Price - 1H2023	2969	2/16/2031	2/16/2031	17.63	17.63	17.63	17.63	17.63	17.63	26.26	27.28	25.99	26.18	25.89	25.89	25.89	25.89	25.89	25.89	25.89	25.89	26.76	28.78	29.57	29.79	19.86	18.83
SPP South - Energy Price - 1H2023	2970	2/17/2031	2/17/2031	21.47	21.47	21.47	21.47	23.41	23.41	38.48	39.6	42.08	41.01	40.75	39.16	38.48	37.04	38.24	36.77	38.13	39.03	38.94	39.03	38.41	37.34	21.47	20.98
SPP South - Energy Price - 1H2023	2971	2/18/2031	2/18/2031	20.45	20.45	20.45	20.45	20.45	20.8	33.81	34.87	33.61	33.61	33.61	24.9	1.05	26.38	0	1.12	29.67	31.28	33.61	33.61	33.61	32.93	20.45	20.45
SPP South - Energy Price - 1H2023	2972	2/19/2031	2/19/2031	27.48	27.48	27.48	27.48	25.46	27.48	43.59	43.59	25.64	12.62	26.41	5.65	3.66	1.03	0	1.12	1.03	4.79	30.72	36.34	34.78	33.37	23.17	22.88
SPP South - Energy Price - 1H2023	2973	2/20/2031	2/20/2031	21.47	21.47	21.47	22.09	22.09	22.09	35.93	35.93	27.61	29.75	10.91	1.06	3.66	1.03	23.24	27.22	25.05	35.93	35.93	36.3	36.74	36.74	22.14	22.09
SPP South - Energy Price - 1H2023	2974	2/21/2031	2/21/2031	21.47	21.47	19.98	21.47	21.47	21.47	33.8	33.63	32.93	32.93	26.89	1.06	1.05	1.03	3.6	3.69	5.18	27.81	32.93	32.93	32.93	32.93	19.98	19.98
SPP South - Energy Price - 1H2023	2975	2/22/2031	2/22/2031	19.98	19.98	19.98	19.98	19.98	19.98	29.32	31.33	30.25	29.32	29.32	29.32	29.32	5.77	29.32	29.32	29.32	29.56	29.53	29.8	30.26	30.41	21.07	19.98
SPP South - Energy Price - 1H2023	2976	2/23/2031	2/23/2031	19.98	20.19	19.98	19.98	19.98	20.17	30.42	30.72	31.16	29.32	29.32	29.77	27.25	3.7	3.81	5.71	1.25	28.91	29.32	29.32	29.32	29.32	19.98	19.98
SPP South - Energy Price - 1H2023	2977	2/24/2031	2/24/2031	18.57	18.57	18.57	18.57	18.57	19.02	31.97	32.19	31.99	30.93	31.01	31.34	30.93	30.93	30.93	30.93	31.36	32.41	34.22	32.75	31.99	31.83	20.66	19.17
SPP South - Energy Price - 1H2023	2978	2/25/2031	2/25/2031	21.47	21.37	21.47	20.42	21.37	21.47	33.03	36.08	32.25	32.25	31.9	29.75	29.75	29.75	27.61	24.33	29.75	24.12	32.25	32.25	29.75	32.25	19.5	19.5
SPP South - Energy Price - 1H2023	2979	2/26/2031	2/26/2031	18.17	18.17	18.17	18.17	18.17	18.17	33.34	33.29	31	30.37	26.89	26.17	5.65	6.07	4.77	0.99	6.34	25.27	29.95	30.37	30.37	30.37	18.17	18.17
SPP South - Energy Price - 1H2023	2980	2/27/2031	2/27/2031	9.71	17.63	18.43	10.54	18.53	18.81	31.28	31.28	29.81	29.75	29.75	28.78	12.6	29.75	31.28	29.75	28.78	31.28	31.28	31.58	32.7	31.3	20.94	20.94
SPP South - Energy Price - 1H2023	2981	2/28/2031	2/28/2031	20.78	20.78	20.78	20.78	20.78	20.78	32.76	34.74	32.59	32.22	32.09	32.38	32.31	32.11	32.12	31.35	31.13	31.5	31.98	31.82	31.08	31.07	18.67	18.67
SPP South - Energy Price - 1H2023	2982	3/1/2031	3/1/2031	13.17	13.17	13.17	13.17	13.17	13.17	37.27	10.02	1.39	1.31	1.37	1.26	1.45	1.31	1.37	1.46	1.37	1.37	37.27	37.27	36.13	12.28	6.69	13.17
SPP South - Energy Price - 1H2023	2983	3/2/2031	3/2/2031	13.17	13.17	13.17	13.17	13.17	13.17	37.27	37.27	9.5	1.31	1.37	1.26	1.45	1.31	1.57	1.46	1.45	9.02	31.28	37.27	34.8	32.01	11.31	11.31
SPP South - Energy Price - 1H2023	2984	3/3/2031	3/3/2031	15.4	14.17	15.52	15.52	15.52	15.52	30.48	28.86	4.88	18.4	22.04	24.07	8.26	28.86	28.23	24.77	24.22	28.86	34.31	34.31	34.31	34.31	15.52	15.52
SPP South - Energy Price - 1H2023	2985	3/4/2031	3/4/2031	14.19	7.04	6.73	14.19	14.36	14.36	28.86	28.86	17.01	6.06	0.9	0.83	0.95	0.86	0.99	0.96	0.93	0.95	27.22	31.8	31.8	31.8	14.36	14.36
SPP South - Energy Price - 1H2023	2986	3/5/2031	3/5/2031	16.97	16.97	16.97	16.97	16.97	16.97	37.29	37.03	34.7	29.9	31.26	31.03	33.93	31.57	30.06	34.82	36.77	36.78	40.94	41.24	36.78	36.78	16.97	16.97
SPP South - Energy Price - 1H2023	2987	3/6/2031	3/6/2031	15.99	15.52	15.28	15.52	15.99	15.52	34.17	34.16	36.24	34.64	33.55	33.55	32.66	30.89	33.53	6.27	6.15	28.45	33.65	34.29	34.17	33.58	15.52	15.52

SPP South - Energy Price - 1H2023	2988	3/7/2031	3/7/2031	15.25	15.24	15.25	15.25	15.25	15.25	34.13	32.55	31.07	30.52	30.52	29.82	29.9	27.76	6.72	23.13	28.15	30.52	30.52	30.68	30.52	30.52	13.69	13.69
SPP South - Energy Price - 1H2023	2989	3/8/2031	3/8/2031	13.69	13.69	13.69	13.69	13.69	13.69	38.75	38.75	2.28	1.31	1.37	1.26	1.45	35.4	38.75	38.75	38.75	42.12	43.15	43.15	43.15	43.15	13.69	13.69
SPP South - Energy Price - 1H2023	2990	3/9/2031	3/9/2031	13.69	13.69	13.69	13.69	13.69	13.69	42.12	38.75	38.75	38.75	38.75	38.75	38.75	8.95	9.19	9.55	38.75	39.24	43.15	39.24	38.75	38.75	13.69	13.69
SPP South - Energy Price - 1H2023	2991	3/10/2031	3/10/2031	12.76	12.76	3.98	4.01	12.76	12.76	27.39	27.39	27.39	27.39	27.39	27.39	21.28	25.49	27.39	25.82	25.37	22.5	25.81	26.83	27.39	27.39	12.76	12.76
SPP South - Energy Price - 1H2023	2992	3/11/2031	3/11/2031	12.98	12.98	12.98	12.98	12.98	12.98	29.22	27.81	27.81	27.81	27.81	27.81	27.81	27.81	27.81	27.81	27.81	27.81	29.02	29.36	28.52	28.52	12.98	13.77
SPP South - Energy Price - 1H2023	2993	3/12/2031	3/12/2031	13.63	13.33	13.33	13.33	13.33	13.33	29.59	28.48	28.48	28.48	28.48	28.86	28.48	28.48	28.48	28.86	28.86	28.86	30.66	31.93	30.93	30.07	14.34	13.33
SPP South - Energy Price - 1H2023	2994	3/13/2031	3/13/2031	14.5	14.02	14.16	14.79	14.84	15.52	34.83	34.83	30.74	30.78	29.77	29.77	30.68	30.72	29.95	30.45	29.77	29.77	29.77	29.77	29.77	29.77	14.02	14.02
SPP South - Energy Price - 1H2023	2995	3/14/2031	3/14/2031	13.02	13.02	13.02	13.02	13.02	13.02	27.88	28.05	29.84	27.88	27.88	30.43	29.84	29.84	29.84	29.81	29.94	29.84	29.84	29.39	29.13	27.88	13.02	13.02
SPP South - Energy Price - 1H2023	2996	3/15/2031	3/15/2031	13.02	13.02	13.02	13.02	13.02	13.02	36.84	36.84	36.84	9.22	1.37	1.26	0	1.31	1.5	1.46	1.42	9.02	36.84	36.84	36.84	36.84	13.02	13.02
SPP South - Energy Price - 1H2023	2997	3/16/2031	3/16/2031	13.02	13.02	13.02	13.02	13.02	13.02	36.84	38.73	40.97	39.01	36.94	38.24	36.84	36.84	36.84	36.84	36.84	36.84	36.84	36.84	36.84	36.84	13.02	13.02
SPP South - Energy Price - 1H2023	2998	3/17/2031	3/17/2031	13.92	13.92	13.92	13.92	14.25	13.92	30.73	29.6	30.73	30.73	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	28.86	28.86	13.92	13.43
SPP South - Energy Price - 1H2023	2999	3/18/2031	3/18/2031	12.78	12.72	13.73	13.73	13.73	13.73	29.23	29.23	20.79	6.06	5.46	5.49	5.61	4.11	6.04	2.86	5.61	5.92	25.53	28.86	29.23	29.23	13.73	13.73
SPP South - Energy Price - 1H2023	3000	3/19/2031	3/19/2031	13.82	13.82	13.82	13.82	13.82	13.83	29.41	29.41	27.95	6.06	0.99	0.83	0.95	0.86	0.99	0.96	6.15	5.92	28.86	30.44	30.62	29.71	13.83	13.83
SPP South - Energy Price - 1H2023	3001	3/20/2031	3/20/2031	14.7	14.7	14.7	14.74	15.26	15.38	34.63	34.87	35.85	33.61	32.18	33.58	31.06	31.85	31.85	31.06	31.06	31.06	32.15	31.84	31.06	31.06	14.69	11.5
SPP South - Energy Price - 1H2023	3002	3/21/2031	3/21/2031	11.81	14.18	3.98	4.93	14.14	4.81	19.4	6.58	0.91	0.86	0.9	0.83	0	0.86	0.99	1.91	8.9	28.86	30.27	30.27	30.27	30.27	14.28	14.28
SPP South - Energy Price - 1H2023	3003	3/22/2031	3/22/2031	14.28	14.28	14.28	14.28	14.28	14.28	40.41	40.41	40.41	40.41	40.41	40.41	10.06	16.65	16.65	9.81	10.44	14.88	40.41	40.41	40.41	40.41	14.28	14.28
SPP South - Energy Price - 1H2023	3004	3/23/2031	3/23/2031	14.28	14.28	14.28	14.28	14.28	14.28	40.41	40.41	40.41	40.41	15.13	10.52	10.52	8.95	9.19	9.55	9.61	40.41	40.41	40.41	40.41	37.18	14.28	4.63
SPP South - Energy Price - 1H2023	3005	3/24/2031	3/24/2031	14.58	14.59	14.59	14.59	14.59	14.85	32.66	30.85	30.85	30.85	30.85	30.85	30.85	30.85	30.85	30.85	31.9	33.21	32.13	31.92	31.9	30.85	15.31	14.59
SPP South - Energy Price - 1H2023	3006	3/25/2031	3/25/2031	14.08	14.08	14.08	14.08	14.08	14.08	30.72	29.89	29.89	29.89	29.89	29.89	29.89	30.04	31.29	32.11	32.11	31.77	32.11	33.65	32.39	31.48	15.09	15.16
SPP South - Energy Price - 1H2023	3007	3/26/2031	3/26/2031	14.92	14.43	13.94	13.57	14.06	13.95	30.63	28.93	29.9	30.1	29.35	29.35	28.93	28.86	28.93	28.93	28.93	28.93	28.93	29.47	28.93	28.93	13.57	13.57
SPP South - Energy Price - 1H2023	3008	3/27/2031	3/27/2031	12.81	12.81	12.81	12.81	13.89	13.81	28.11	28.11	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	28.95	28.65	28.41	12.81	12.81
SPP South - Energy Price - 1H2023	3009	3/28/2031	3/28/2031	11.99	11.99	11.99	11.99	11.99	12.37	25.94	25.94	25.94	25.94	25.94	22.9	25.94	25.94	11.03	25.94	25.94	25.94	25.94	28.86	28.21	26.63	11.99	11.99
SPP South - Energy Price - 1H2023	3010	3/29/2031	3/29/2031	11.99	11.99	11.99	11.99	11.99	11.99	34.68	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	37.67	37.67	34.6	36.03	12.29	12.33
SPP South - Energy Price - 1H2023	3011	3/30/2031	3/30/2031	11.99	11.99	11.99	11.99	12.09	12.16	34.47	33.94	33.93	11.91	1.94	1.6	1.54	1.48	1.6	1.48	1.51	13.39	33.93	13.15	15.38	15.24	5.24	4.67
SPP South - Energy Price - 1H2023	3012	3/31/2031	3/31/2031	5.34	4.54	4.68	4.71	4.86	4.71	8.89	8.44	1.25	1.13	1.27	7.85	26.62	26.62	26.62	26.62	26.62	26.62	29.85	30.14	29.61	28.59	12.72	12.77
SPP South - Energy Price - 1H2023	3013	4/1/2031	4/1/2031	13.17	13.17	13.17	13.17	13.17	13.29	19.99	19.99	19.99	19.99	15.07	0.86	0.7	0.86	0.73	0.67	19.99	19.99	19.99	19.99	19.99	19.99	13.17	13.17
SPP South - Energy Price - 1H2023	3014	4/2/2031	4/2/2031	6.27	13.36	13.36	4.64	13.36	13.36	20.24	20	6.63	5.42	5.43	5.44	5.65	5.74	5.73	6.13	6.34	6.1	18.65	16.5	7	6.94	5.17	4.61
SPP South - Energy Price - 1H2023	3015	4/3/2031	4/3/2031	4.79	5.06	4.61	4.64	4.79	6.17	19.54	20	20.66	6.15	5.58	5.44	7.42	20	8.06	6.13	19.31	20	20	8.06	8.06	6.94	5.17	4.61
SPP South - Energy Price - 1H2023	3016	4/4/2031	4/4/2031	5.26	5.06	4.61	5.72	5.26	12.72	18.38	16.92	19.4	19.4	19.4	16.92	5.65	5.74	7.58	7.58	6.34	6.1	18.38	19.4	19.4	19.4	12.72	12.72
SPP South - Energy Price - 1H2023	3017	4/5/2031	4/5/2031	12.72	12.72	12.72	12.72	12.72	12.72	17.56	17.56	17.56	17.56	17.56	9.06	7.66	6.06	3.99	4.06	6.7	17.56	17.56	17.56	17.56	17.56	12.72	12.72
SPP South - Energy Price - 1H2023	3018	4/6/2031	4/6/2031	12.72	12.72	12.72	12.72	12.72	12.72	17.56	16.16	9.8	15.53	17.56	14.08	17.56	17.56	16.16	17.56	17.56	17.56	17.85	17.96	17.65	17.56	12.72	12.72
SPP South - Energy Price - 1H2023	3019	4/7/2031	4/7/2031	12.43	12.43	12.43	12.43	12.43	12.43	19.01	19.01	19.01	19.01	19.01	5.44	17.59	5.74	9.7	6.13	9.6	9.61	19.01	19.01	19.01	15.32	11.23	10.33
SPP South - Energy Price - 1H2023	3020	4/8/2031	4/8/2031	10.33	5.06	4.61	11.23	11.08	12.89	19.62	14.68	5.64	5.42	5.38	5.44	5.65	8.24	7.17	7.58	18.14	19.62	20	19.62	20.56	19.62	12.89	12.89
SPP South - Energy Price - 1H2023	3021	4/9/2031	4/9/2031	5.26	5.06	6.31	5.11	13.26	13.26	20.11	20.11	16.28	16.04	20	18.55	20	18.38	20.11	20.11	20	20.11	20.11	20.11	20.11	20.11	13.22	4.61
SPP South - Energy Price - 1H2023	3022	4/10/2031	4/10/2031	6.87	12.45	13.03	13.03	13.03	13.03	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.9	19.81	19.81	13.03	13.03
SPP South - Energy Price - 1H2023	3023	4/11/2031	4/11/2031	12.94	12.94	12.94	12.94	13.48	13.79	20.98	19.69	5.64	0.78	0.86	0.86	0.7	0.67	0.73	0.67	0.69	3.69	5.77	19.69	17.18	19.69	12.94	12.94
SPP South - Energy Price - 1H2023	3024	4/12/2031	4/12/2031	5.26	5.06	4.61	4.64	4.79	4.64	6.5	6.18	0.91	0	0	0	0	0	0	0	0.73	6.44	6.1	17.87	17.87	17.87	12.94	12.94
SPP South - Energy Price - 1H2023	3025	4/13/2031	4/13/2031	12.94	12.94	12.94	12.94	12.94	12.94	17.87	17.87	8.96	5.73	9.06	8.96	5.97	6.06	6.06	8.96	13.89	17.87	19.54	19.54	18.67	17.98	12.94	12.94
SPP South - Energy Price - 1H2023	3026	4/14/2031	4/14/2031	12.83	12.83	12.83	12.83	12.83	12.83	19.54	19.54	19.54	19.54	9.41	10.23	5.65	5.74	5.73	6.51	6.34	9.92	19.54	19.54	19.54	19.54	12.83	12.83
SPP South - Energy Price - 1H2023	3027	4/15/2031	4/15/2031	6.15	6.18	4.61	5.99	5.92	13	19.77	19.77	19.76	10.63	10.23	5.44	5.65	5.74	5.73	6.13	3.64	17.25	19.77	20.08	19.91	19.77	13	13
SPP South - Energy Price - 1H2023	3028	4/16/2031	4/16/2031	13.09	13.09	13.09	13.09	13.09	13.5	19.88	5.85	0.87	0.78	0	0.86	0.7	0.67	0.73	0.67	0.78	19.88	19.88	17.35	17.35	17.35	12.21	12.21
SPP South - Energy Price - 1H2023	3029	4/17/2031	4/17/2031	12.97	12.97	12.97	12.97	12.97	12.97	19.73	5.85	5.64	5.42	5.38	5.44	5.65	5.65	5.65	6.13	6.34	6.1	5.77	17.42	16.78	19.73	12.97	12.97
SPP South - Energy Price - 1H2023	3030	4/18/2031	4/18/2031	12.64	12.64	12.64	12.64	13.82	13.82	20.62	19.29	19.29	19.29	19.29	19.29	19.29	19.29	19.29	19.29	20	20	20	20	20.23	19.57	13.75	13.37
SPP South - Energy Price - 1H2023	3031	4/19/2031	4/19/2031	13.44	12.64	12.64	12.64	12.64	12.95	18.38	17.45	17.45	17.45	17.45	17.45	17.45	16.6	16.8	17.45	17.45	17.45	17.45	17.45	16.6	16.6	12.43	12.64
SPP South - Energy Price - 1H2023	3032	4/20/2031	4/20/2031	12.64	12.64	12.64	12.64	12.64	12.64	16.6	17.45	16.6	15.88	7.14	17.45	17.45	17.45	17.45	19.08	19.08	19.08	19.08	19.08	17.45	17.45	12.79	12.64
SPP South - Energy Price - 1H2023	3033	4/21/2031	4/21/2031	12.3	12.3	12.3	12.3	12.3	12.3	18.84	19.15	18.84	18.84	18.84	18.84	18.84	18.84	20	20	20.01	21.53	21.53	21.53	21.53	20.78	13.44	13.44
SPP South - Energy Price - 1H2023	3034	4/22/2031	4/22/2031	13.6	12.81	13.6	13.71	13.6	13.6	20.29	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.34	20.3	20.56	20.29	20.56	20	13.33	12.54
SPP South - Energy Price - 1H2023	3035	4/23/2031	4/23/2031	12.27	12.27	12.27	12.54	13.4	13.4	18.96	20.18	18.79	18.79	18.97	18.79	18.79	18.79	18.79	18.79	18.79	18.79	18.79	18.79	18.79	18.79	12.21	12.21
SPP South - Energy Price - 1H2023	3036	4/24/2031	4/24/2031	12.21	12.21	12.21	12.15	12.21	12.21	18.72	18.72	18.72	17.36	14.38	12.55	12.55	5.74	5.73	6.13	12.55	12.55	17.2	18.72	18.72	18.72	12.21	12.21
SPP South - Energy Price - 1H2023	3037	4/25/2031	4/25/2031	12.1	7.1	7.1	12.1	12.1	12.1	18.57	18.57	18.57	18.57	18.57	18.57	5.65	5.74	5.73	6.13	6.34	6.1	6.67	6.67	7	6.94	5.17	4.61
SPP South - Energy Price - 1H2023	3038	4/26/2031	4/26/2031	5.26	3.82	3.82	3.82	4.15	4.15	5.73	5.27	5.27	5.73	0.93	0.91	0.74	0.71	0.77	0.71	0.73	6.44	4.05	16.71	16.71	16.71	12.1	12.1
SPP South - Energy Price - 1H2023	3039	4/27/2031	4/27/2031	12.1	12.1	12.1	12.1	12.1	12.1	16.71	7.37	5.95	5.73	5.69	5.75	5.97	6.06	6.06	6.35	6.7	7.19	16.71	16.71	16.71	16.71	12.1	12.1
SPP South - Energy Price - 1H2023	3040	4/28/2031	4/28/2031	12.52	12.51	12.51	12.51	12.51	12.52	17.26	3.5	3.01	0.79	3.26	3.8	4.32	5.19	6.7	6.65	6.97	6.1	19.12	19.12	19.12	19.12	12.52	12.51
SPP South - Energy Price - 1H2023	3041	4/29/2031	4/29/2031	12.81	12.81	12.81	12.81	12.81	12.81	19.52	19.52	19.52	19.52	19.52	20	20	20.39	21.03	21.21	22.29	21.75	21.85	21.21	21.21	21.21	14.01	13.22
SPP South - Energy Price - 1H2023	3042	4/30/2031	4/30/2031	13.33	13.1	13.1	13.05	12.78	13.41	19.47	20.33	20.45	20.56	20.76	19.47	20.84	21.2	21.2	22.08	21.92	21.92	22.24	21.96	21.03	21.04	12.91	12.78
SPP South - Energy Price - 1H2023	3043	5/1/2031	5/1/2031	16.82	17.8	16.82	17.5	17.78	18.36	19.58	18.76	18.17	18.17	18.17	18.17	18.17	18.17	18.17	6.64	16.71	18.17	18.17	18.17	18.17	18.17	16.82	16.82
SPP South - Energy Price - 1H2023	3044	5/2/2031	5/2/2031	15.9	15.9	15.9	15.9	15.96	15.91	17.31	3.49	0.75	1.96	3.26	3.8	3.49	1.27	3.68	9.21	17.31	17.31	13.08	17.31	17.37	17.65	15.9	15.9
SPP South - Energy Price - 1H2023	3045	5/3/2031	5/3/2031	15.91	15.9	15.9	5.14	15.91	15.91	18.8	7.13	6.47	6.47	5.71	4.68	5.56	18.8	16.02	18.8	18.8	18.8	18.8	18.8	18.8	18.8	15.9	15.9
SPP South - Energy Price - 1H2023	3046	5/4/2031	5/4/2031	15.9	15.9	15.9	14.63	15.9	15.05	18.8	4.56	3.88	3.71	4.5	4.89	5.56	6.69	7.62	18.8	18.8	18.8	18.8	19.07	19.64	19.76	16.62	16.5
SPP South - Energy Price - 1H2023	3047	5/5/2031	5/5/2031	15.5	15.74	15.5	15.68	16.24	16.44	18.74	16.94	11.78	14.95	12.27	12.05	12.1	12.2	16.94	10.95	14.38	16.94	16.94	18.03	19.4	17.92	16.9	16.27
SPP South - Energy Price - 1H2023	3048	5/6/2031	5/6/2031	16.01	16.27	16.93	16.93	17.17	17.43	19.28	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	18.93	19.06	18.91	17.38	16.19	15.98
SPP South - Energy Price - 1H2023	3049	5/7/2031	5/7/2031	16.9	16.9	16.9	16.9	17.03	17.23	18.91	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.91	20.64	20.36	19.17	17.03	16.9
SPP South - Energy Price - 1H2023	3050	5/8/2031	5/8/2031	17.12	17.12	17.12	17.12	17.26	18.61	18.77	18.44	8.47	8.47	3.26	3.8	4.31	8.09	18.44	7.59	18.44	18.45	18.45	18.45	18.48	19.8	17.12	17.12
SPP South - Energy Price - 1H2023	3051	5/9/2031	5/9/2031	17.07	17.07	17.07	17.07	17.07	18.59	19.21	18.4	18.69	18.68	18.6	18.89	21.04	19.99	18.98	20	20.95	20.82	21.26	21.04	21.04	20.95	19.15	18.65
SPP South - Energy Price - 1H2023	3052	5/10/2031	5/10/2031	18.65	18.65	18.4	18.4	18.03	18.65	22.04	22.04	22.04	22.06	22.04	20.56	21.75	22.19	23.05	24.34	22.04	22.04	23.04	23.71	24.02	23.65	19.15	18.65
SPP South - Energy Price - 1H2023	3053	5/11/2031	5/11/2031	18.65	18.65	18.65	17.43	18.65	18.65	22.04	20.65	20.35	20.26	20.43	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.12	22.04	20.35	20.35	17.07	17.07
SPP South - Energy Price - 1H2023	3054	5/12/2031	5/12/2031	17.21	17.21	17.21	17.21	17.37	17.37	18.86	19.74	18.54	18.54	19.82	18.61	19.99	19.99	18.91	19.99	18.54	18.54	18.75	18.54	18.54	19.03	17.21	17.21
SPP South - Energy Price - 1H2023	3055	5/13/2031	5/13/2031	17.49	17.49	17.49	19.02	17.49	17.87	18.8	18.8	18.8	16.05	3.26	3.8	4.31	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	17.49	17.49
SPP South - Energy Price - 1H2023	3056	5/14/2031	5/14/2031	17.55	17.55	17.55	17.55	17.55	17.94	18.85	18.85	18.85	19.78	18.85	18.85	18.85	19.99	18.85	19.99	19.99	19.99	19.99	20.99	19.99	20.2	18.26	17.55
SPP South - Energy Price - 1H2023	3057	5/15/2031	5/15/2031	17.99	17.98	17.76	17.76	17.95	18.32	19.28	19.19	19.99	19.99	19.99	19.99	20.71	19.99	19.99	21.76	19.99	19.99	19.99	19.99	21.63	19.99	18.47	17.76
SPP South - Energy Price - 1H2023	3058	5/16/2031	5/16/2031	17.69	17.69	17.69	17.69	17.69	18.08	19.99	18.98	18.98	18.98	18.98	18.98	18.98	18.98	18.98	18.98	18.98	18.98	18.98	19.99	19.99	19.56	19.33	19.33
SPP South - Energy Price - 1H2023	3059	5/17/2031	5/17/2031	17.69	17.69	17.69	17.69	17.69	17.69	20.91	20.91	21.85	22.7	21.54	21.01	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	21.38	20.91	17.69	17.69
SPP South - Energy Price - 1H2023	3060	5/18/2031	5/18/2031	17.69	17.69	17.69	17.69	17.69	17.69	20.91	20.91	20.91	20.91	7.94	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	17.69	17.69
SPP South - Energy Price - 1H2023	3061	5/19/2031	5/19/2031	18.21	18.21	18.21	18.21	18.21	18.65	19.47	19.47	19.47	17.02	19.47	19.86	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	20.44	19.97	18.21	18.21
SPP South - Energy Price - 1H2023	3062	5/20/2031	5/20/2031	18.31	18.31	18.31	18.31	18.55	18.7	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.59	19.56	18.31	18.31
SPP South - Energy Price - 1H2023	3063	5/21/2031	5/21/2031	8.06	5.82	10.14	6.9	18.17	17.38	18.47	3.49	3.01	2.88	3.26	3.8	12.19	17.52	16.72	6.76	6.61	16.95	17.25	19.43	19.43	19.43	13.58	12.47
SPP South - Energy Price - 1H2023	3064	5/22/2031	5/22/2031	13.55	5.82	8.6	8.6	13.24	8.6	12.03	3.49	3.01	2.88	3.26	3.8	4.31	19.25	19.25	8.3	19.25	19.25	19.25	19.25	21.17	19.25	17.98	17.98
SPP South - Energy Price - 1H2023	3065	5/23/2031	5/23/2031	17.37	17.37	17.37	17.37	17.37	17.37	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	17.37	17.37
SPP South - Energy Price - 1H2023	3066	5/24/2031	5/24/2031	17.37	16.93	16.9	17.37	16.9	17.32	6.48	4.5	5.07	3.71	6.48	20.53	20.53	20.53	20.53	21	22.43	22.43	22.43	22.43	20.53	20.53	17.37	17.37
SPP South - Energy Price - 1H2023	3067	5/25/2031	5/25/2031	7.43	16.34	17.27	17.37	16.34	17.37	20.35	19.76	19.45	20.53	20.53	20.53	20.53	20.53	20.53	19.3	11.77	7.86	20.53	20.53	20.53	21.17	17.37	17.37
SPP South - Energy Price - 1H2023	3068	5/26/2031	5/26/2031	17.37	17.37	17.37	17.37	17.37	17.37	16.3	14.99	3.01	17.63	18.68	18.68	18.68	18.68	19.99	18.68	19.99	19.99	19.99	21.05	19.99	19.81	18.08	17.37
SPP South - Energy Price - 1H2023	3069	5/27/2031	5/27/2031	17.9	17.9	17.9	17.9	17.9	17.9	19.18	19.18	19.18	19.18	19.37	21	21.06	21.06	19.38	21.91	21.21	21.94	21.91	22.16	22.16	21.93	19.57	17.9
SPP South - Energy Price - 1H2023	3070	5/28/2031	5/28/2031	19.37	20.04	20.04	19.79	18.56	20.04	20.25	19.57	19.57	19.57	20.44	19.57	19.57	20.11	19.57	19.99	19.57	19.57	19.57	19.99	19.57	19.57	18.32	18.32

SPP South - Energy Price - 1H2023	3071	5/29/2031	5/29/2031	18.44	18.44	3.58	3.26	18.44	18.44	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	18.44	18.44
SPP South - Energy Price - 1H2023	3072	5/30/2031	5/30/2031	18.77	18.77	18.77	3.26	18.77	18.77	19.99	19.99	19.99	1.49	19.99	19.99	19.99	19.99	19.99	19.99	19.99	19.99	19.99	19.99	19.99	19.99	18.77	18.77
SPP South - Energy Price - 1H2023	3073	5/31/2031	5/31/2031	18.77	18.77	3.8	18.77	18.77	18.77	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.43	22.72	18.9	19.21
SPP South - Energy Price - 1H2023	3074	6/1/2031	6/1/2031	22.4	22.03	22.03	22.03	22.08	22.32	30.76	30.45	30.39	30.39	30.39	30.39	30.39	31.87	32.81	32.81	33.26	33.26	32.87	31.87	32.81	30.86	22.18	22.03
SPP South - Energy Price - 1H2023	3075	6/2/2031	6/2/2031	19.05	19.05	19.05	19.05	19.05	19.05	29.48	29.48	6.91	29.48	29.48	29.48	29.48	29.48	29.48	29.48	29.48	32.74	29.88	33.72	33.72	30.58	20.79	19.23
SPP South - Energy Price - 1H2023	3076	6/3/2031	6/3/2031	18.72	18.72	19.1	18.72	19.07	19.1	29.04	29.04	29.04	30.53	29.76	29.98	33.23	33.23	33.23	33.92	33.23	33.55	34.81	34.83	36.04	34.74	23.17	20.97
SPP South - Energy Price - 1H2023	3077	6/4/2031	6/4/2031	21.3	21.3	20.93	20.74	20.97	21.05	32.23	29.42	29.42	29.42	29.8	29.42	33.66	30.14	33.66	33.66	33.4	33.99	33.99	33.99	33.99	32.18	20.74	19.06
SPP South - Energy Price - 1H2023	3078	6/5/2031	6/5/2031	19.65	19.06	18.79	18.64	18.75	19.06	29.67	28.73	28.73	29.08	28.73	28.73	28.73	28.73	32.89	32.89	28.73	30.31	28.8	30.31	32.89	29.58	18.49	18.49
SPP South - Energy Price - 1H2023	3079	6/6/2031	6/6/2031	17.57	17.57	17.57	17.57	17.57	17.57	27.5	27.5	27.5	27.73	28.09	31.51	31.51	31.51	31.51	29.36	31.51	31.51	31.51	31.77	31.77	31.77	20.34	19.65
SPP South - Energy Price - 1H2023	3080	6/7/2031	6/7/2031	17.71	17.57	17.57	17.71	17.83	18.03	24.38	24.87	24.9	26.23	26.74	26.41	27.11	27.11	28.82	28.82	26.41	27.52	27.11	27.11	27.11	27.11	19.14	18.6
SPP South - Energy Price - 1H2023	3081	6/8/2031	6/8/2031	18.55	18.57	19.14	19.14	19.14	18.97	24.38	24.24	24.24	24.24	24.24	24.24	24.24	24.24	24.24	24.24	26.41	26.37	26.64	27.11	27.11	27.26	18.2	19.65
SPP South - Energy Price - 1H2023	3082	6/9/2031	6/9/2031	21.99	21.2	20.42	20.43	20.64	20.88	32.81	32.92	33.47	33.2	35.34	34.32	32.92	32.92	30.92	32.92	30.92	30.92	32.92	30.92	30.92	32.03	20.13	20.67
SPP South - Energy Price - 1H2023	3083	6/10/2031	6/10/2031	21.14	21.19	21.12	20.83	21.09	21.14	33.22	34.63	34.49	32.46	31.86	32.31	31.86	33.96	36.39	36.09	34.88	32.74	34.16	36.39	36.14	34.9	22.77	20.83
SPP South - Energy Price - 1H2023	3084	6/11/2031	6/11/2031	21.34	4.8	21.34	21.49	21.6	21.79	33.48	33.65	35.62	35.71	36.11	36.11	34.87	37.15	38.33	37.15	37.15	35.8	34.94	37.15	37.15	36.74	23.34	22.65
SPP South - Energy Price - 1H2023	3085	6/12/2031	6/12/2031	22.07	21.6	21.72	21.57	21.83	22.07	33.5	34.74	34.88	34.89	36.48	36.48	36.9	40.04	39.63	40.24	38.39	36.9	36.9	36.9	36.9	36.48	20.89	20.89
SPP South - Energy Price - 1H2023	3086	6/13/2031	6/13/2031	21	21	21	20.92	21	21	30.67	30.24	29.73	29.73	29.85	29.73	29.73	32.22	29.73	30.67	29.73	29.73	29.73	34.01	34.01	32.19	21.57	20.58
SPP South - Energy Price - 1H2023	3087	6/14/2031	6/14/2031	19.24	19.24	19.24	19.24	19.24	19.24	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	28.98	28.85	26.99	19.39	19.24
SPP South - Energy Price - 1H2023	3088	6/15/2031	6/15/2031	19.24	19.24	19.24	19.24	19.24	19.24	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.74	28.58	29.08	28.97	19.39	19.45
SPP South - Energy Price - 1H2023	3089	6/16/2031	6/16/2031	20.97	20.97	20.97	20.97	20.97	20.97	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.04	32.34	32.09	20.98	20.97
SPP South - Energy Price - 1H2023	3090	6/17/2031	6/17/2031	20.3	20.3	20.3	20.3	20.3	20.3	31.15	31.15	29.62	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.96	31.96	31.96	32.43	34.91	31.96	22.19	21.55
SPP South - Energy Price - 1H2023	3091	6/18/2031	6/18/2031	22.15	22.15	22.15	22.15	22.15	22.15	31.11	31.11	31.11	31.63	31.11	31.11	34.28	35.55	34.86	34.84	34.33	34.91	35.94	39.01	37.88	35.94	26.27	22.15
SPP South - Energy Price - 1H2023	3092	6/19/2031	6/19/2031	22.68	22.68	20.75	20.75	20.75	20.94	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	32.42	35.79	36.26	36.26	36.68	36.26	38.74	36.68	23.51	22.68
SPP South - Energy Price - 1H2023	3093	6/20/2031	6/20/2031	22.75	22.75	22.24	22.75	22.65	22.75	33.46	34.29	34.84	34.88	36.09	36.37	36.37	36.78	37	39.06	38.34	36.78	38.34	40.51	40.58	38.24	24.41	23.66
SPP South - Energy Price - 1H2023	3094	6/21/2031	6/21/2031	23.38	22.75	22.75	22.75	22.51	22.75	29.76	29.65	31.4	31.95	32.26	34.64	32.26	34.64	31.95	31.4	31.4	31.4	34.64	33.89	31.4	29.12	22.75	21.92
SPP South - Energy Price - 1H2023	3095	6/22/2031	6/22/2031	22.44	21.23	21.1	20.81	20.81	21.1	29.12	29.12	31.4	31.91	31.4	31.4	32.26	32.26	32.26	31.4	31.4	31.4	31.4	31.4	31.95	31.74	23.38	22.75
SPP South - Energy Price - 1H2023	3096	6/23/2031	6/23/2031	23.42	22.13	21.51	21.51	21.67	22.81	32.92	32.92	32.63	32.63	32.63	32.63	32.63	32.63	32.63	32.63	32.63	32.63	32.63	34.2	36.42	34.81	23.42	21.86
SPP South - Energy Price - 1H2023	3097	6/24/2031	6/24/2031	22.02	21.65	21.65	21.65	21.68	22.34	33.9	34.65	34.65	33.63	32.96	33.76	36.13	36.13	36.15	34.94	32.96	32.96	32.96	34.58	34.96	34.96	23.44	22.13
SPP South - Energy Price - 1H2023	3098	6/25/2031	6/25/2031	23.14	24.18	24.13	24.13	23.74	23.89	33.49	33.54	33.49	33.49	33.98	33.49	33.49	33.49	34.97	33.49	33.49	33.49	33.49	34.84	35.74	34.97	24.13	22.82
SPP South - Energy Price - 1H2023	3099	6/26/2031	6/26/2031	22.72	22.7	22.72	22.72	22.35	22.59	33.79	33.81	33.8	33.8	33.8	33.8	33.8	34.72	34.98	34.69	36.17	35.27	36.93	35.95	36.46	35.27	24.39	24.39
SPP South - Energy Price - 1H2023	3100	6/27/2031	6/27/2031	23	23.49	23.49	21.94	23.49	23.49	33.66	34.43	34.29	34.75	34.92	36.14	34.94	37.35	37.8	38.59	35.41	37.35	37.35	37.35	37.5	36.15	24.14	23.49
SPP South - Energy Price - 1H2023	3101	6/28/2031	6/28/2031	23.49	23.49	23.45	23.17	22.73	22.3	30.59	32.31	32.41	32.41	32.41	32.41	33.31	33.31	33.55	33.31	32.41	32.45	33.31	32.41	34.11	32.84	22.1	22.22
SPP South - Energy Price - 1H2023	3102	6/29/2031	6/29/2031	22.93	22.1	21.77	23.17	22.18	22.15	30.59	30.5	31.03	29.97	29.63	32.41	32.41	32.41	33.31	33.31	33.31	33.31	32.46	33.14	34.11	32.41	22.7	21.89
SPP South - Energy Price - 1H2023	3103	6/30/2031	6/30/2031	21.49	20.71	20.64	20.86	20.91	22.32	33.82	35.79	35.79	35.79	35.79	35.79	35.79	37.7	36.19	35.1	35.79	34.86	34.87	35.44	34.87	33.61	21.97	21.89
SPP South - Energy Price - 1H2023	3104	7/1/2031	7/1/2031	34.82	35.25	35.19	33.99	34.76	35.86	42.29	43.27	44.59	43.34	48.16	48.16	48.16	48.16	55.44	49.72	49.72	48.16	45.74	49.72	51.13	51.03	42.96	39.72
SPP South - Energy Price - 1H2023	3105	7/2/2031	7/2/2031	43.22	38.55	37.73	37.65	39.72	40.7	45.02	42.94	43.2	43.36	43.69	50.01	50.8	50.84	48.58	43.69	48.58	43.69	48.58	43.69	47.49	47.49	39.72	37.74
SPP South - Energy Price - 1H2023	3106	7/3/2031	7/3/2031	33.74	31.79	30.08	28.78	32.8	29.19	35.38	35.01	35.78	35.78	35.78	38.82	39.64	40.17	41.77	42.39	38.18	39.21	42.29	39.98	39.85	40.36	32.79	28.78
SPP South - Energy Price - 1H2023	3107	7/4/2031	7/4/2031	33.7	33.71	33.05	33.12	33.39	34.11	38.99	38.7	42.71	41.83	39.88	39.3	45.47	44.71	47.73	46.56	44.82	47.94	53.76	48.51	46.56	42.14	33.85	33.85
SPP South - Energy Price - 1H2023	3108	7/5/2031	7/5/2031	33.85	33.7	31.7	31.7	33.58	33.02	37.14	38.27	41.52	38.19	38.19	41.98	45.11	45.11	43.93	46.74	41.23	45.11	42.39	38.44	39.14	36.51	34.87	33.85
SPP South - Energy Price - 1H2023	3109	7/6/2031	7/6/2031	33.85	33.71	30.83	30.64	29.87	28.86	30.27	31.61	31.08	32.69	31.86	32.28	32.69	33.51	32.69	32.69	32.69	29.29	32.69	33.15	34.55	35.29	31.1	28.78
SPP South - Energy Price - 1H2023	3110	7/7/2031	7/7/2031	37.43	35.4	37.47	37.47	37.47	37.48	42.7	41.62	39.54	40.49	41.88	43.65	45.13	43.65	44.96	43.65	41.94	41.94	43.82	41.47	42.69	42.7	35.36	35.93
SPP South - Energy Price - 1H2023	3111	7/8/2031	7/8/2031	36.43	35.93	34.91	34.91	36.47	36.44	43.39	45.06	45.3	46.45	46.45	45.88	48.23	46.45	48.23	48.72	49.17	48.11	49.92	44.37	48.86	48.23	39.72	39.72
SPP South - Energy Price - 1H2023	3112	7/9/2031	7/9/2031	39.72	38.87	38.64	38.68	38.64	38.87	45.48	45.48	46.04	46.04	46.04	48.1	46.04	46.04	43.48	45.44	42.04	45.48	46.04	46.04	45.48	46.04	38.87	38.87
SPP South - Energy Price - 1H2023	3113	7/10/2031	7/10/2031	36.77	35.56	36.76	36.77	36.77	37.78	44.41	44.41	41.9	44.41	44.41	43.41	44.41	44.41	44.93	44.93	45.9	46.5	47.49	50.1	44.05	47.11	44.62	37.78
SPP South - Energy Price - 1H2023	3114	7/11/2031	7/11/2031	37.38	37.37	36.37	36.37	36.37	36.65	41.62	42.27	41.88	44.01	44.52	44.52	46.33	44.52	45.2	46.05	49.59	46.46	47.01	46.03	47.05	45.74	41.16	39.72
SPP South - Energy Price - 1H2023	3115	7/12/2031	7/12/2031	38.74	38.99	37.38	37.38	37.38	37.19	41.31	41.31	40.88	41.3	40.89	41.3	41.3	41.3	44	43.54	44.23	45.11	45.11	47.02	45.11	45.11	37.38	37.38
SPP South - Energy Price - 1H2023	3116	7/13/2031	7/13/2031	37.38	36.37	36.37	36.37	37.34	37.06	41.3	40.43	41.11	40.1	41.3	41.3	41.31	45.11	48.54	45.11	50.4	50.4	47.02	56.28	50.4	50.4	39.72	38.74
SPP South - Energy Price - 1H2023	3117	7/14/2031	7/14/2031	38.67	38.67	38.44	38.48	38.47	38.89	45.84	45.29	45.29	49.23	51.2	51.2	51.2	45.29	47.94	49.23	45.84	45.84	49.23	45.84	45.84	46.24	39.72	39.72
SPP South - Energy Price - 1H2023	3118	7/15/2031	7/15/2031	39.07	39.72	39.62	38.89	38.01	39.94	46.24	50.26	46.24	46.24	51.68	54.71	55.5	55.34	58.26	65.89	60.61	60.13	57.76	58.26	55.68	54.88	41.73	40.17
SPP South - Energy Price - 1H2023	3119	7/16/2031	7/16/2031	40.32	39.4	39.4	39.4	39.51	39.4	46.01	46.01	44.42	46.01	43.04	46.58	48.4	49.27	47.37	52.37	52.24	52.59	54.43	54.69	46.58	46.58	39.4	39.4
SPP South - Energy Price - 1H2023	3120	7/17/2031	7/17/2031	39.61	39.61	39.61	39.61	39.61	39.61	43.46	46.09	41.49	43.72	47.31	47.93	47.31	47.92	47.21	47.31	43.55	43.51	47.31	53.73	47.31	51.14	40.73	40.45
SPP South - Energy Price - 1H2023	3121	7/18/2031	7/18/2031	39.68	38.43	38.43	38.43	38.43	38.43	43.61	45.42	44.51	45.14	46.11	46.11	44.04	46.11	46.11	43.49	46.11	46.11	46.68	50.06	48.96	49.49	41	39.5
SPP South - Energy Price - 1H2023	3122	7/19/2031	7/19/2031	39.5	38.46	38.43	38.43	38.43	38.43	42.85	42.66	43.64	43.64	41.92	39.89	43.64	44.09	44.87	44.87	44.87	43.65	47	44	43.84	44.86	39.5	38.43
SPP South - Energy Price - 1H2023	3123	7/20/2031	7/20/2031	38.43	35.11	35.11	35.11	38.43	36.82	39.88	41.05	41.75	41.2	40.94	43.64	43.64	43.64	39.88	44.86	40.15	39.88	43.64	44.86	45.11	44.87	39.5	38.43
SPP South - Energy Price - 1H2023	3124	7/21/2031	7/21/2031	38.3	37.09	36.93	37.95	37.84	37.19	43.52	43.89	44.4	43.89	45.1	45.1	45.43	48.1	48.53	50.3	50.3	55.66	52.08	52.49	53.13	50.3	42.05	40.77
SPP South - Energy Price - 1H2023	3125	7/22/2031	7/22/2031	39.35	39.72	38.26	38.26	38.33	38.29	44.31	45.41	44.88	45.41	43.35	46.15	46.95	48.4	46.46	47.97	50.68	45	52.62	48.82	48.66	50.32	41.16	38.26
SPP South - Energy Price - 1H2023	3126	7/23/2031	7/23/2031	36.69	36.69	36.69	36.69	37.62	36.69	39.81	39.42	42.42	39.21	41.89	44.33	44.85	40.75	44.33	44.33	44.85	44.51	50	51.39	44.33	45.14	37.7	37.7
SPP South - Energy Price - 1H2023	3127	7/24/2031	7/24/2031	36.08	37.07	36.08	37.07	36.08	37.19	43.14	43.03	43.71	45.02	47.74	50.59	49.72	51.06	51.89	50.74	50.07	50.88	51.61	51.75	51.62	52.13	44.01	39.72
SPP South - Energy Price - 1H2023	3128	7/25/2031	7/25/2031	38.48	37.78	37.73	36.77	37.74	37.19	43.35	44.65	45.73	53.02	51.19	56.02	50.96	50.43	53.2	53.2	53.2	53.2	58.92	56	51.69	51.68	43.56	43.56
SPP South - Energy Price - 1H2023	3129	7/26/2031	7/26/2031	39.77	39.72	37.73	39.4	39.72	39.72	42.07	44.81	42.39	44.75	44.91	46.16	48.64	45.11	48.55	48.19	46.74	45.15	54.76	49.47	49.47	46.71	39.57	38.15
SPP South - Energy Price - 1H2023	3130	7/27/2031	7/27/2031	38.22	36.08	35.72	35.72	36.71	35.72	38.69	40.57	38.24	40.57	40.57	40.57	42.51	45.11	45.55	45.55	45.55	45.11	49.47	45.55	45.55	45.55	39.72	36.71
SPP South - Energy Price - 1H2023	3131	7/28/2031	7/28/2031	36.65	35.45	36.11	36.43	36.51	36.65	43.07	40.97	41.22	42.21	43.07	45.56	50.46	47.86	49.66	49.11	50.46	50.46	56.47	52.23	50.95	48.42	41.16	38.15
SPP South - Energy Price - 1H2023	3132	7/29/2031	7/29/2031	36.93	36.93	36.67	36.93	36.93	35.94	42.93	43.28	42.07	44.07	44.75	43.57	50.05	50.6	50.6	49.13	49.97	50.48	52.1	50.74	50.9	50.54	39.72	39.72
SPP South - Energy Price - 1H2023	3133	7/30/2031	7/30/2031	37.14	37.14	36.85	34.44	35.84	36.53	43.29	43.77	43.77	46.19	47.38	48.7	49.49	50.73	50.75	49.31	50.14	50.14	50.73	51.02	49.3	43.77	41.13	39.33
SPP South - Energy Price - 1H2023	3134	7/31/2031	7/31/2031	35.22	37.47	37.47	37.47	37.61	38.79	44.61	44.1	43.57	44.61	44.61	51.16	50.77	51.2	51.18	49.74	50.57	50.93	55.95	55.13	51.6	49.7	39.07	38.73
SPP South - Energy Price - 1H2023	3135	8/1/2031	8/1/2031	38.03	38.36	38	38.36	39.22	40.23	46.49	46.42	46.97	50.7	46.97	46.42	46.97	52.38	54.04	52.53	52.38	50.05	52.38	52.38	50.28	46.75	38.36	36.5
SPP South - Energy Price - 1H2023	3136	8/2/2031	8/2/2031	37.26	35.64	34.13	35.19	36.98	34.13	36.29	37.18	38.21	38.21	40.02	40.47	43.47	44.81	44.08	46.13	43.55	40.06	45.2	38.21	38.11	38.21	37.33	37.33
SPP South - Energy Price - 1H2023	3137	8/3/2031	8/3/2031	34.74	37.33	36.29	34.74	37.33	36.47	34.02	34.59	33.99	33.99	35.44	37.18	37.18	39.16	41.53	38.21	41.06	42.33	45.39	45.39	45.39	41.14	38.59	37.33
SPP South - Energy Price - 1H2023	3138	8/4/2031	8/4/2031	32.67	32.67	32.67	32.67	32.67	35.3	41.53	41.53	41.53	41.53	43.41	46.01	45.78	46.25	46.25	45.75	46.49	46.93	46.96	49.1	46.25	46.25	39.39	39.39
SPP South - Energy Price - 1H2023	3139	8/5/2031	8/5/2031	39.06	38.42	38.42	37.38	37.38	40.39	47.03	47.03	45.15	46.48	47.03	47.03	50.33	52.45	52.45	54.52	54.52	60.57	54.9	54.52	54.52	50.23	40.23	39.66
SPP South - Energy Price - 1H2023	3140	8/6/2031	8/6/2031	39.12	34.78	36.34	34.78	38.06	38.06	46.47	45.86	43.47	45.24	47.19	47.19	47.76	47.92	48.49	47.76	48.12	50.03	50.24	51.89	48.49	47.19	38.51	38.51
SPP South - Energy Price - 1H2023	3141	8/7/2031	8/7/2031	38.51	38.51	35.22	35.19	38.51	38.03	45.58	44.6	47.66	45.26	47.66	47.66	47.66	49.67	45.84	51.55	51.79	53.93	52.86	49.37	47.66	47.66	38.51	38.51
SPP South - Energy Price - 1H2023	3142	8/8/2031	8/8/2031	38.28	38.28	38.28	38.28	38.28	39.35	43.78	44	43.93	43.48	43.88	44.3	47.43	47.43	47.43	48	47.42	48.01	52.2	51.72	47.85	47.43	39.35	38.72
SPP South - Energy Price - 1H2023	3143	8/9/2031	8/9/2031	38.28	38.28	38.28	38.28	37.84	37.32	37.04	35.94	36.26	36.96	36.55	36.96	39.19	39.19	39.19	39.19	39.19	40.06	38.13	40.06	40.06	39.19	40.23	39.35
SPP South - Energy Price - 1H2023	3144	8/10/2031	8/10/2031	39.35	38.28	38.86	38.36	38.28	38.28	38.13	36.96	36.96	38.13	38.13	38.13	39.19	39.19	39.19	39.19	40.06	41.84	41.94	43.44	42.12	40.06	39.35	39.35
SPP South - Energy Price - 1H2023	3145	8/11/2031	8/11/2031	38.64	38.64	38.64	38.68	38.64	39.72	47.07	46.75	46.34	47.87	47.81	52.06	52.98	52.9	56.03	54.6	55.39	55.8	55.55	56.17	55.39	48.61	39.64	38.92
SPP South - Energy Price - 1H2023	3146	8/12/2031	8/12/2031	38.92	38.88	38.55	38.08	38.92	38.92	47.56	47.56	46.99	47.13	51.54	54.86	54.56	55.46	55.64	55.2	54.3	54.07	54.54	55.15	55.15	53.09	41.43	38.92
SPP South - Energy Price - 1H2023	3147	8/13/2031	8/13/2031	32.92	33.15	33.02	32.92	32.78	34.01	39.09	40.9	39.4	39.07	40.9	43.09	45.02	44.99	46.52	44.71	45.53	45.46	48.51	48.39	45.46	43.52	35.33	33.83
SPP South - Energy Price - 1H2023	3148	8/14/2031	8/14/2031	31.12	31.25	29.73	29.81	31.25	32.25	37.65	37.65	36.25	37.65	37.93	39.82	41.39	41.53	43.36	43.37	41.39	43.36	43.36	44.07	43.36	42.08	35.69	36.05
SPP South - Energy Price - 1H2023	3149	8/15/2031	8/15/2031	31.34	31.04	30.55	30.77	30.67	32.67	37.71	38.38	37.43	38.8	38.6	40.64	40.79	42.13	42.22	42.91	42.19	43.44	44.2	43.67	41.75	40.79	34.41	34.41
SPP South - Energy Price - 1H2023	3150	8/16/2031	8/16/2031	32.67	33.15	31.18	31.52	32.34	32.62	33.01	34.21	36.41	38.89	37.04	40.06	40.06	41.86	42.26	41.59	41.06	41.38	40.03	38.25	37.93	38.21	34.41	34.17
SPP South - Energy Price - 1H2023	3151	8/17/2031	8/17/2031	32.56	31.72	30.55	31.4	31.25	31.13	32.15	32.52	32.01	32.02	33.72	36.06	34.68	37.5	37.3	36.02	34.27	34.31	38.5	40.06	37.97	38.21	35.56	35.09
SPP South - Energy Price - 1H2023	3152	8/18/2031	8/18/2031	36.87	36.94	35.89	35.94	35.8	37.45	44.69	44.38	42.49	43.97	47.19	49.23	49.23	46.16	49.23	48.51	49.14	45.2	50.1	50.67	50.96	49.23	37.9	37.46
SPP South - Energy Price - 1H2023	3153	8/19/2031	8/19/2031	39.23	39.12	39.12	38.26	38.17	39.23	47.3	45.81	45.74	47.33	47.88	47.88	53.48	50.08	50.08	53.92	53.48	50.08	55.09	55.13	53.48	52.97	39.23	39.23

SPP South - Energy Price - 1H2023	3154	8/20/2031	8/20/2031	40.23	40.23	39.98	39.2	39.2	41.51	49	48.33	45.08	48.39	48.77	48.39	49.96	49	54.84	55.39	54.84	51.33	63.16	63.77	54.84	54.84	41.07	40.3
SPP South - Energy Price - 1H2023	3155	8/21/2031	8/21/2031	40.19	40.23	39.94	39.93	40.23	41.68	50.92	48.79	47.17	50	52.39	54.39	54.39	57.45	57.29	60.23	63.17	63.01	76.8	71.42	63.76	59.1	53.58	49.16
SPP South - Energy Price - 1H2023	3156	8/22/2031	8/22/2031	42.72	41.58	41.68	41.03	41.68	42.72	52.06	50.61	48.22	46.72	55.25	54.4	55.28	55.74	65.26	66.82	68.7	69.52	69.5	67.29	61.33	56.47	51.74	45.88
SPP South - Energy Price - 1H2023	3157	8/23/2031	8/23/2031	41.39	41.16	39.62	40.13	40.23	40.61	40.06	40.06	38.45	40.19	45.5	46.08	49.59	54.58	58.49	60.29	62.44	67.73	67.17	59.55	57.09	51.01	48.43	45.6
SPP South - Energy Price - 1H2023	3158	8/24/2031	8/24/2031	41.32	41.16	38.61	38.61	38.61	38.61	38.45	38.45	38.45	41.18	42.84	44.85	41.26	45.8	46.66	48.82	49.67	49.99	49.85	50.45	50.33	45.69	40.05	40.23
SPP South - Energy Price - 1H2023	3159	8/25/2031	8/25/2031	38.89	38.81	38.81	38.89	38.8	38.89	46.87	46.87	46.87	46.87	50.74	47.43	50.79	49.98	54.68	53.14	54.05	54.39	54.36	54.83	55.06	51.34	41.88	39.38
SPP South - Energy Price - 1H2023	3160	8/26/2031	8/26/2031	39.38	39.38	39.38	37	35.97	39.38	48.78	48.58	46.47	48.58	49.19	49.19	49.19	50.31	57.17	55.08	55.08	55.08	58.1	55.08	49.19	49.19	40.34	39.5
SPP South - Energy Price - 1H2023	3161	8/27/2031	8/27/2031	39.51	39.51	39.51	39.51	38.94	39.51	46.57	47.22	46.43	48.84	52.09	55.73	56.98	58.97	67.01	68.19	72.37	67.01	68.14	67.01	64.25	58.08	52.1	43.33
SPP South - Energy Price - 1H2023	3162	8/28/2031	8/28/2031	41.13	40.23	40.23	40.23	40.23	41.43	52.31	49.87	49.46	49.88	52.31	55.9	57.41	57.44	59.42	58.29	59.07	59.6	59.07	63.63	55.9	55.9	44.37	41.68
SPP South - Energy Price - 1H2023	3163	8/29/2031	8/29/2031	40.84	40.84	40.73	41.68	41.79	44.28	52.87	55.53	55.53	57.35	59.87	62.86	58.22	56.42	59.92	63.33	61.32	61.68	62.38	55.53	51.97	49.57	40.84	40.84
SPP South - Energy Price - 1H2023	3164	8/30/2031	8/30/2031	40.84	40.23	40.73	40.23	40.23	40.84	40.53	39.57	39.57	40.06	41.43	48.41	51.36	50.92	49.93	51.36	52.09	50.7	53.12	52.65	48.41	43.69	40.84	40.84
SPP South - Energy Price - 1H2023	3165	8/31/2031	8/31/2031	40.84	40.84	39.73	39.73	39.73	39.73	39.83	39.57	39.57	39.57	39.81	41.51	48.41	48.41	48.41	48.41	45.32	44.74	47.98	48.41	48.41	48.41	41.44	40.84
SPP South - Energy Price - 1H2023	3166	9/1/2031	9/1/2031	35.26	35.17	35.17	34.3	34.64	35.26	42.61	41.39	41.34	42.07	42.61	42.61	42.61	44.88	42.61	46.87	47.51	48.45	52.26	51.56	50.63	50.27	41.97	41.97
SPP South - Energy Price - 1H2023	3167	9/2/2031	9/2/2031	34.94	36.14	35.89	35.69	34.71	37.99	45.16	41.93	40.7	41.2	41.2	43.1	43.1	45.62	44.79	44.67	44	45.47	46.04	45.84	46.04	45.63	37.26	35.23
SPP South - Energy Price - 1H2023	3168	9/3/2031	9/3/2031	34.5	34.64	33.84	33.31	33.89	34.09	40.48	39.69	37.25	37.3	35.46	35.46	35.46	35.46	35.46	35.46	35.46	40.97	40.48	40.97	40.97	40.12	33.69	33.26
SPP South - Energy Price - 1H2023	3169	9/4/2031	9/4/2031	32.64	32.64	33.55	32.64	33.04	33.95	40.82	37.47	35.34	37.11	35.34	35.34	35.33	35.34	35.34	35.34	40.34	40.82	45.58	45.51	40.82	40.82	35.24	34.09
SPP South - Energy Price - 1H2023	3170	9/5/2031	9/5/2031	33.29	33.89	33.29	33.29	34.09	34.64	41.59	40.08	39.35	40.08	40.08	40.08	40.08	44.24	43.89	43.87	44.42	44.57	44.9	44.39	43.35	40.56	32.39	32.39
SPP South - Energy Price - 1H2023	3171	9/6/2031	9/6/2031	32.39	33.29	32.39	32.39	30.61	32.39	50.19	49.47	49.39	51.73	53.17	53.17	53.17	55.32	54.13	53.17	54.13	53.17	55.7	60.45	55.98	56.29	32.75	30.58
SPP South - Energy Price - 1H2023	3172	9/7/2031	9/7/2031	30.64	29.61	30.77	29.61	29.7	30.01	48.74	49.09	49.01	47.3	51.73	47.93	51.74	51.74	53.17	53.17	53.17	63.18	55.32	62.45	58.29	53.17	32.39	32.39
SPP South - Energy Price - 1H2023	3173	9/8/2031	9/8/2031	30.71	32.46	32.46	30.74	32.46	33.36	39.25	38.15	36.17	37.49	35.84	36.61	36.61	35.33	38.3	35.33	35.24	36.73	43.72	40.63	38.3	37.21	32.71	30.7
SPP South - Energy Price - 1H2023	3174	9/9/2031	9/9/2031	31.49	31.12	31.51	31.51	31.26	32.64	38.23	36.61	35.98	35.98	35.98	35.98	35.98	35.98	35.98	39.92	41.06	36.73	41.57	41.06	41.06	37.56	32.71	30.46
SPP South - Energy Price - 1H2023	3175	9/10/2031	9/10/2031	30.83	30.83	30.83	31.79	31.02	32.64	41.5	41.5	41.5	42.02	42.02	46.94	46.94	46.94	46.07	46.13	46.7	46.61	47.04	47.04	47.04	42.02	34.7	34.7
SPP South - Energy Price - 1H2023	3176	9/11/2031	9/11/2031	34.17	33.68	33.17	33.31	34.1	34.1	41.4	41.4	40.89	39.56	39.56	38.97	35.83	37.08	35.83	35.83	35.83	40.89	38.95	37.62	40.89	35.83	32.82	32.26
SPP South - Energy Price - 1H2023	3177	9/12/2031	9/12/2031	30.05	29.57	30.62	30.48	30.22	32.18	37.05	34.9	34.9	34.9	34.9	32.11	32.11	32.11	32.11	32.11	34.9	34.9	35.02	35.33	35.33	34.9	29.42	29.42
SPP South - Energy Price - 1H2023	3178	9/13/2031	9/13/2031	29.42	29.42	29.42	29.42	29.42	29.42	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	48.86	51.04	52.51	52.82	51.39	49.55	29.94	29.42
SPP South - Energy Price - 1H2023	3179	9/14/2031	9/14/2031	29.42	29.42	29.42	29.42	29.42	29.42	46.99	46.99	46.99	46.99	46.99	46.99	46.99	51.39	47.28	51.39	47.28	51.39	52.51	52.68	51.34	51.39	30.07	30.44
SPP South - Energy Price - 1H2023	3180	9/15/2031	9/15/2031	29.06	29.55	29.94	29.81	29.99	31.77	38.52	38.75	38.7	37.25	36.76	35.18	37.2	39.42	39.42	39.88	40.31	40.38	43.86	41.79	40.46	39.42	32.71	31.03
SPP South - Energy Price - 1H2023	3181	9/16/2031	9/16/2031	30.49	30.27	30.36	30.62	31.03	31.44	38.34	38.44	36.88	34.21	34.21	35.31	35.33	35.78	37.19	34.21	35.33	39.08	39.08	37.3	35.36	34.21	28.75	28.75
SPP South - Energy Price - 1H2023	3182	9/17/2031	9/17/2031	28.83	28.83	28.83	28.83	28.83	28.83	34.29	34.29	34.29	34.29	34.29	34.29	22.83	34.29	34.29	34.29	34.29	35.33	39.61	35.33	35.56	34.29	29.34	29.85
SPP South - Energy Price - 1H2023	3183	9/18/2031	9/18/2031	30.33	29.3	29.69	29.69	29.63	29.69	34.78	34.78	12	34.77	34.78	34.78	34.78	34.78	34.78	34.78	37.49	43.95	45.03	44.79	40.18	40.18	34.26	33.52
SPP South - Energy Price - 1H2023	3184	9/19/2031	9/19/2031	32.64	32.64	31.5	32.37	32.64	32.64	39.21	38.55	38.12	37.81	36.48	35.3	35.85	38.17	37.3	36.39	37.93	39.6	39.6	39.15	37.23	36.21	29.33	28.81
SPP South - Energy Price - 1H2023	3185	9/20/2031	9/20/2031	28.81	28.81	28.81	28.81	28.81	28.81	46.02	12.18	5.51	10.42	6.93	2.28	15.23	17.25	19.77	21.9	22.71	46.02	46.02	46.02	46.02	46.02	28.81	28.81
SPP South - Energy Price - 1H2023	3186	9/21/2031	9/21/2031	28.81	28.81	28.81	28.81	28.81	28.81	46.02	12.18	5.51	2.16	11.33	2.28	15.23	17.25	19.77	21.9	30.7	46.02	46.02	46.02	46.02	46.02	28.81	25.76
SPP South - Energy Price - 1H2023	3187	9/22/2031	9/22/2031	23.84	23.84	21.09	24.64	24.64	24.67	29.97	29.97	29.97	31.86	32.62	30.55	31.1	34.32	34.62	34.62	35.17	36.23	37.28	37.7	34.62	34.62	27.61	26.89
SPP South - Energy Price - 1H2023	3188	9/23/2031	9/23/2031	29.58	29.58	29.39	29.58	30.39	30.39	37.37	37.36	37.36	37.28	37.53	37.53	37.53	40.67	40.28	40.63	40.67	41.56	41.57	41.57	40.67	37.53	32.76	30.39
SPP South - Energy Price - 1H2023	3189	9/24/2031	9/24/2031	29.52	27.63	29.33	29.52	30.32	30.32	37.46	37.46	36.35	37.08	36.08	37.46	37.46	38.91	38.91	38.91	37.46	40.63	41.49	41.49	38.91	37.25	30.32	30.32
SPP South - Energy Price - 1H2023	3190	9/25/2031	9/25/2031	31.31	30.85	31.24	31.31	31.31	32.17	38.94	37.45	36.94	34.15	37.23	37.19	38.32	38.94	37.46	38.69	37.69	43.04	43.83	43.83	39.39	39.39	32.17	31.31
SPP South - Energy Price - 1H2023	3191	9/26/2031	9/26/2031	30.19	29.39	29.39	29.39	29.39	30.94	37.32	36.82	36.21	33.03	33.06	32.3	32.3	32.3	32.3	32.3	32.3	37.32	37.32	36.94	32.3	32.3	26.92	26.91
SPP South - Energy Price - 1H2023	3192	9/27/2031	9/27/2031	26.91	26.91	26.91	26.91	26.91	26.91	42.99	12.18	10.65	9.87	11.33	2.28	2.85	17.25	17.25	21.9	22.71	42.99	42.99	42.99	42.99	42.99	26.91	24.67
SPP South - Energy Price - 1H2023	3193	9/28/2031	9/28/2031	13.74	12.75	10.86	11.8	11.35	11.02	16.84	3.56	0	0	0	0	0	5.3	4.93	5.3	4.79	42.99	42.99	42.99	42.99	42.99	11.35	12.34
SPP South - Energy Price - 1H2023	3194	9/29/2031	9/29/2031	11.35	11.35	10.15	11.8	11.35	13.37	30.47	10.22	8.98	7.98	8.67	9.65	20.55	30.47	30.47	30.47	30.47	34.01	35.2	35.2	34.89	34.77	25.15	25.15
SPP South - Energy Price - 1H2023	3195	9/30/2031	9/30/2031	28.68	28.68	28.68	28.68	28.68	28.68	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	38.97	38.99	38.99	38.99	37.59	30.86	29.27
SPP South - Energy Price - 1H2023	3196	10/1/2031	10/1/2031	19.8	19.8	19.8	19.8	19.8	21.5	26.68	26.68	27.47	27.67	27	26.21	26.8	26.8	27.72	27.8	28.84	28.84	27.81	27.8	26.84	26.36	20.08	19.8
SPP South - Energy Price - 1H2023	3197	10/2/2031	10/2/2031	20.08	20.08	20.08	20.41	20.08	22.02	26.63	25.28	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	26.85	24.93	24.93	24.93	24.93	20.08	20.08
SPP South - Energy Price - 1H2023	3198	10/3/2031	10/3/2031	20.33	20.33	20.33	20.33	20.33	20.33	25.2	25.2	25.2	25.2	25.2	25	24.46	25.2	25.2	24.37	25.2	25.2	25.2	25.2	25.2	25.2	20.33	20.33
SPP South - Energy Price - 1H2023	3199	10/4/2031	10/4/2031	20.33	20.33	20.33	20.33	20.33	20.33	28.58	28.58	14.58	7.42	0	0	0	0	0	3.15	11.06	25.14	28.58	28.58	14.21	13.3	9.56	9.07
SPP South - Energy Price - 1H2023	3200	10/5/2031	10/5/2031	14.87	13.78	20.33	20.33	20.33	20.33	28.58	17.13	7.31	7.42	8.07	2.06	7.61	8.07	10.72	11.61	28.58	31.28	31.82	30.92	30.52	28.58	20.33	20.33
SPP South - Energy Price - 1H2023	3201	10/6/2031	10/6/2031	22	19.25	20.23	19.48	19.25	21.98	28.47	26.57	26.19	26.57	26.19	26.57	26.57	26.57	26.57	26.57	28.47	28.47	31.34	31.46	28.47	27.22	22	22
SPP South - Energy Price - 1H2023	3202	10/7/2031	10/7/2031	22.64	21.67	21.67	21.67	21.67	20.82	27.17	26.55	25.45	25.28	25.28	25.28	25.28	25.28	25.28	25.45	25.45	25.45	25.45	25.45	25.28	25.28	18.25	18.25
SPP South - Energy Price - 1H2023	3203	10/8/2031	10/8/2031	18.2	18.2	18.2	18.2	18.2	18.2	25.4	25.4	25.28	6.79	7.31	6.91	20.83	9.12	25.28	25.28	25.4	25.4	25.4	25.4	25.4	26.19	22.2	20.76
SPP South - Energy Price - 1H2023	3204	10/9/2031	10/9/2031	18.73	18.73	18.72	18.72	8.81	18.73	25.98	9.55	1.49	4.89	1.31	1.58	2.39	2.68	2.25	10.47	25.28	25.28	25.98	25.98	25.98	25.98	21.38	21.38
SPP South - Energy Price - 1H2023	3205	10/10/2031	10/10/2031	21.46	21.46	21.46	21.46	21.46	21.46	27.5	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	27.88	29.55	29.88	28.73	27.88	23.39	23
SPP South - Energy Price - 1H2023	3206	10/11/2031	10/11/2031	23	23.39	23	23.39	23.39	23.76	33.41	32.89	32.89	32.89	32.89	33.82	33.4	32.89	30.72	26.42	32.89	33.4	33.4	32.89	30.65	28.92	20.51	19.9
SPP South - Energy Price - 1H2023	3207	10/12/2031	10/12/2031	20.43	20.43	21.46	22.55	23	22.21	30.17	28.73	31.23	30.17	30.17	30.17	27.75	26.42	21.43	29.14	26.42	30.17	30.17	30.17	30.17	27.75	19.74	19.74
SPP South - Energy Price - 1H2023	3208	10/13/2031	10/13/2031	20.88	20.93	20.95	20.99	21.09	22.55	28.33	27.79	27.24	27.24	27.24	25.51	25.51	25.51	25.51	25.51	27.45	28.89	29.69	28.53	27.72	25.51	23.39	23.39
SPP South - Energy Price - 1H2023	3209	10/14/2031	10/14/2031	23.39	21.47	21.95	23.39	23.39	23.78	33.28	29.07	27.9	27.9	27.9	27.9	26.07	26.07	26.07	26.07	26.07	27.5	28.38	27.9	27.54	26.56	20.48	18.81
SPP South - Energy Price - 1H2023	3210	10/15/2031	10/15/2031	18.48	18.48	21.09	19.58	21.09	22.74	27.47	27.37	25.71	27.47	26.19	27.47	25.71	25.71	25.71	26.9	27.45	29.17	29.97	29.38	29.45	29.42	23.39	23.39
SPP South - Energy Price - 1H2023	3211	10/16/2031	10/16/2031	23.39	23.5	23.5	23.75	23.5	24.24	27.67	27.63	26.19	25.84	25.84	25.28	25.84	13.07	25.84	25.4	25.84	31.29	30.21	32.96	32.96	29.56	22.78	21.71
SPP South - Energy Price - 1H2023	3212	10/17/2031	10/17/2031	21.77	21.77	21.4	21.05	22.45	23.39	28.62	26.68	25.41	25.28	25.28	25.28	24.38	24.38	25.28	24.38	25.93	27.56	30.87	30.87	27.31	25.28	22.12	19.43
SPP South - Energy Price - 1H2023	3213	10/18/2031	10/18/2031	18.37	19.7	19.42	19.43	19.7	20.97	30.9	27.69	7.31	24.31	27.69	25.99	27.69	27.69	27.69	27.69	27.69	32.89	32.75	32.75	31.03	30.17	19.69	19.7
SPP South - Energy Price - 1H2023	3214	10/19/2031	10/19/2031	19.7	19.69	19.7	19.7	20.37	20.66	31.3	27.69	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	29.69	32.2	32.75	29.62	30.13	19.7	21.59
SPP South - Energy Price - 1H2023	3215	10/20/2031	10/20/2031	25.28	23.39	23.39	23.39	25.21	24.24	33.03	30.13	27.72	27.72	27.72	27.72	27.72	27.65	28	27.72	27.72	35.82	35.79	32.19	32.19	32.19	25.28	24.24
SPP South - Energy Price - 1H2023	3216	10/21/2031	10/21/2031	23.39	23.39	23.39	23.39	23.39	23.39	29.3	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	29.7	30.72	30.06	28.01	27.9	21.58	21.58
SPP South - Energy Price - 1H2023	3217	10/22/2031	10/22/2031	21.33	21.33	21.5	20.8	19.17	21.5	28.21	27.48	25.28	25.28	25.28	25.28	28.21	27.48	24.77	25.28	25.28	28.21	28.21	28.21	28.21	26.19	19.17	19.47
SPP South - Energy Price - 1H2023	3218	10/23/2031	10/23/2031	8.82	8.61	19.47	19.47	19.47	21.65	26	25.37	25.37	25.28	23.34	23.34	25.37	25.28	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	19.47	19.47
SPP South - Energy Price - 1H2023	3219	10/24/2031	10/24/2031	19.31	19.31	19.31	19.31	19.31	19.31	25.19	25.19	25.19	25.19	25.19	25.19	23.18	25.19	25.19	24.5	25.19	25.19	25.19	25.19	25.28	25.19	21.46	21.46
SPP South - Energy Price - 1H2023	3220	10/25/2031	10/25/2031	21.46	21.47	19.31	20.86	19.31	21.46	27.14	29.5	26.79	7.42	27.14	27.14	26.79	17.26	18.53	13.9	29.05	30.18	30.18	30.18	30.18	30.18	21.47	21.01
SPP South - Energy Price - 1H2023	3221	10/26/2031	10/26/2031	19.31	20.28	20.99	19.76	19.98	20.27	29.32	27.82	27.14	4.98	1.71	2.06	2.06	0	0	3.15	27.14	30.18	31.01	30.18	30.4	30.18	21.46	21.47
SPP South - Energy Price - 1H2023	3222	10/27/2031	10/27/2031	19.75	19.41	19.75	19.41	19.7	21.59	26.16	26.61	25.31	25.31	25.31	25.31	25.31	25.31	25.31	25.31	28.35	28.66	31.63	28.68	27.72	28.35	21.59	19.41
SPP South - Energy Price - 1H2023	3223	10/28/2031	10/28/2031	19.7	19.7	19.7	19.7	19.7	19.7	25.62	25.28	5.62	5.71	1.31	1.58	2.02	2.68	2.25	8.92	16.85	23.61	25.62	25.62	16.85	10.6	9.32	9
SPP South - Energy Price - 1H2023	3224	10/29/2031	10/29/2031	6.81	6.93	6.66	6.9	7.52	19.54	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.48	25.45	25.45	25.45	25.47	25.45	25.45	25.45	19.54	19.54
SPP South - Energy Price - 1H2023	3225	10/30/2031	10/30/2031	19.01	19.01	19.01	19.01	19.01	19.01	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	24.87	19.01	18.96
SPP South - Energy Price - 1H2023	3226	10/31/2031	10/31/2031	17.38	17.1	17.38	17.38	17.38	17.38	23.06	23.06	25.06	25.79	25.79	25.79	25.28	25.79	25.79	25.79	25.79	26.04	26.04	26.04	25.79	25.28	19.44	19.27
SPP South - Energy Price - 1H2023	3227	11/1/2031	11/1/2031	20.1	19.57	19.44	19.48	19.57	19.44	34.91	34.95	37.73	35.02	37.73	37.73	34.71	34.71	34.71	36.29	37.32	37.85	38.32	37.85	37.73	34.09	19.44	19.44
SPP South - Energy Price - 1H2023	3228	11/2/2031	11/2/2031	19.44	19.44	19.44	19.44	19.44	19.44	34.09	20.2	3.18	4.04	4.04	2.09	2.27	0	3.13	1.99	3.89	8.68	30.12	29.25	27.2	28.12	6.72	16.68
SPP South - Energy Price - 1H2023	3229	11/3/2031	11/3/2031	18.97	18.97	18.97	17.45	18.97	18.97	31.91	29.79	29.79	29.35	29.79	29.79	29.79	29.79	29.79	29.79	29.79	33.33	33.46	33.22	31.91	31.91	21.06	21.06
SPP South - Energy Price - 1H2023	3230	11/4/2031	11/4/2031	21.25	21.25	21.25	21.25	21.25	21.83	30.53	32.74	30.11	31.91	31.91	31.91	31.91	31.91	30.11	30.11	31.91	33.74	35.3	33.19	33.59	33.74	23.35	23.74
SPP South - Energy Price - 1H2023	3231	11/5/2031	11/5/2031	23.04	23.04	20.97	22.27	21.1	23.04	32.97	33.4	32.82	32.82	32.82	32.2	31.91	31.91	29.33	29.33	29.33	29.33	29.33	29.33	29.33	29.33	18.63	18.63
SPP South - Energy Price - 1H2023	3232	11/6/2031	11/6/2031	18.85	10.7	10.12	13.22	18.85	18.85	29.63	29.63	29.63	29.63	29.63	27.26	22.91	27.26	29.63	29.63	29.63	33.15	33.15	33.7	33.15	33.15	23.06	23.44
SPP South - Energy Price - 1H2023	3233	11/7/2031	11/7/2031	24.31	24.84	22.06	22.06	22.06	23	33.4	32.65	30.95	30.3	21.71	25.81	25.94	25.76	6.59	6.6	30.95	30.95	30.95	30.95	30.95	30.95	19.86	10.22
SPP South - Energy Price - 1H2023	3234	11/8/2031	11/8/2031	19.86	19.86	19.86	19.86	19.86	19.86	34.81	34.81	11.21	4.04	7.78	8.27	8.27	8.89	9	8.81	34.81	38.68	38.68	36.11	34.81	34.81	19.86	19.86
SPP South - Energy Price - 1H2023	3235	11/9/2031	11/9/2031	19.86	19.86	19.86	19.86	19.86	19.86	34.81	34.81	34.81	4.04	4.85	2.09	2.27	2.02	3.13	1.99	34.81	34.81	34.81	34.81	34.81	22.89	14.19	7.17
SPP South - Energy Price - 1H2023	3236	11/10/2031	11/10/2031	6.78	6.78	7.03	6.96	7.56	7.94	9.72	9.09	2.33	2.96	2.96	1.53	1.67	1.48	2.3	1.46	7.1	30.62	30.62	30.62	22.68	16.77	5.9	6.29

SPP South - Energy Price - 1H2023	3237	11/11/2031	11/11/2031	6.15	6.78	6.84	6.89	7.98	21.95	32.89	32.89	31.91	32.89	30.25	31.99	32.89	15.52	15.66	31.92	32.89	32.89	32.89	33.52	32.89	32.89	21.95	7.17
SPP South - Energy Price - 1H2023	3238	11/12/2031	11/12/2031	22.64	22.64	22.64	22.64	22.64	22.96	34.59	35.55	34.38	34.67	33.8	33.8	33.8	33.8	33.8	33.8	33.8	38.82	38.82	37.77	34.19	35.13	24.84	24.84
SPP South - Energy Price - 1H2023	3239	11/13/2031	11/13/2031	22.42	22.42	22.42	22.42	22.42	22.42	32.9	32.9	31.91	14.76	6.73	6.06	6.06	6.51	6.59	6.46	32.11	32.9	32.9	32.9	32.9	32.11	22.42	22.42
SPP South - Energy Price - 1H2023	3240	11/14/2031	11/14/2031	20.68	20.68	20.68	20.68	20.68	20.68	30.62	30.62	30.62	18.42	6.73	10.37	10.37	8.23	30.62	30.62	31.05	33.9	34.33	30.62	30.62	30.62	20.68	20.68
SPP South - Energy Price - 1H2023	3241	11/15/2031	11/15/2031	20.68	20.68	20.68	20.68	20.68	20.68	36.44	36.25	36.25	36.25	32.24	36.25	8.27	8.89	9	8.81	15.7	36.25	36.25	36.25	36.25	36.25	12.24	7.17
SPP South - Energy Price - 1H2023	3242	11/16/2031	11/16/2031	7.23	7.36	7.07	7.33	7.43	7.36	27.29	17.98	13.57	36.25	36.25	31.41	30.92	8.89	9	36.25	36.25	36.25	36.25	36.25	36.25	36.25	20.68	20.68
SPP South - Energy Price - 1H2023	3243	11/17/2031	11/17/2031	18.72	18.72	18.72	18.72	18.72	18.72	28.06	28.06	28.06	27.06	28.06	28.06	6.59	28.06	28.06	28.06	28.06	29.35	28.06	28.06	28.06	28.06	18.72	18.72
SPP South - Energy Price - 1H2023	3244	11/18/2031	11/18/2031	20.71	20.71	20.71	20.71	20.71	23	31.96	33.86	31.54	30.66	30.66	30.66	30.66	30.66	30.66	30.66	30.66	34.46	35.68	33.56	31.38	32.4	22.31	22.52
SPP South - Energy Price - 1H2023	3245	11/19/2031	11/19/2031	22.95	22.4	23	22.48	22.27	23	35.14	37.42	33.65	33.18	33.63	33.04	32.66	33.94	32.66	32.66	33.84	40.67	39.14	37.42	37.42	37.42	24.84	24.16
SPP South - Energy Price - 1H2023	3246	11/20/2031	11/20/2031	21.97	21.49	21.36	21.36	21.36	22	32.21	32.21	31.91	14.76	6.73	6.06	6.06	1.48	2.3	6.06	7.1	32.21	32.21	32.21	32.21	32.21	21.36	21.36
SPP South - Energy Price - 1H2023	3247	11/21/2031	11/21/2031	21.15	20.76	20.76	20.8	20.76	21.4	31.83	33.84	31.42	31.42	31.42	31.42	31.42	31.42	11.25	31.42	31.42	31.42	31.42	31.42	31.42	31.42	20.76	20.76
SPP South - Energy Price - 1H2023	3248	11/22/2031	11/22/2031	20.76	20.76	20.76	20.76	20.76	20.76	37.23	39.57	36.41	36.41	36.4	36.4	36.4	36.4	36.4	36.41	36.41	39.41	38.96	36.41	36.41	39.57	23.09	23.09
SPP South - Energy Price - 1H2023	3249	11/23/2031	11/23/2031	20.76	21.42	20.76	20.76	20.76	20.76	36.41	36.41	36.41	36.41	36.41	36.41	8.34	2.02	3.13	1.99	36.4	36.41	36.41	36.41	36.4	36.4	20.76	20.76
SPP South - Energy Price - 1H2023	3250	11/24/2031	11/24/2031	23.6	23.6	23.6	23.6	23.6	23.6	35.14	35.14	35.14	35.14	35.14	35.14	35.14	35.14	35.14	35.14	35.14	37.49	40.26	35.71	36.38	35.14	24.84	24.84
SPP South - Energy Price - 1H2023	3251	11/25/2031	11/25/2031	24.84	23.14	23.14	23.14	23.14	24.84	34.75	36.78	34.61	35.47	34.54	34.58	34.54	34.54	34.54	34.54	34.54	36.76	36.16	36.07	35.05	34.54	23.14	23.14
SPP South - Energy Price - 1H2023	3252	11/26/2031	11/26/2031	22.8	22.8	22.8	22.8	22.8	22.8	34.09	34.38	35.26	35.28	35.87	35.91	34.09	35.36	35.6	35.77	38.83	39.5	39.58	39.06	38.06	38.83	24.84	24.84
SPP South - Energy Price - 1H2023	3253	11/27/2031	11/27/2031	24.84	24.84	24.1	22.83	24.84	24.84	34.67	37.79	34.09	34.09	34.09	34.09	34.09	34.09	34.09	34.09	36.34	39.06	38.71	37.98	34.09	34.09	22.85	24.84
SPP South - Energy Price - 1H2023	3254	11/28/2031	11/28/2031	23.09	23.51	23.51	21.13	21.13	21.13	31.9	31.9	31.9	31.9	31.9	31.9	31.9	23.1	28.05	27.85	31.9	31.9	31.9	31.9	31.9	31.9	21.13	21.13
SPP South - Energy Price - 1H2023	3255	11/29/2031	11/29/2031	21.13	21.13	21.13	21.13	21.13	21.13	37.04	37.04	37.04	37.04	37.04	37.04	37.04	37.04	40.26	37.04	38.11	38.56	42.84	40.26	37.04	37.04	21.13	21.13
SPP South - Energy Price - 1H2023	3256	11/30/2031	11/30/2031	21.13	21.13	23.51	21.13	21.13	21.13	37.04	37.04	37.04	37.04	37.04	37.04	37.04	37.04	37.04	37.04	37.04	38.56	39.4	39.09	37.04	37.04	22.96	21.13
SPP South - Energy Price - 1H2023	3257	12/1/2031	12/1/2031	27.33	27.33	27.33	27.33	27.33	28.14	31.74	32.95	32.81	32.87	32.77	31.43	33.94	32.87	33.93	32.81	32.88	34.82	32.91	32.81	33.39	32.75	32.68	33.2
SPP South - Energy Price - 1H2023	3258	12/2/2031	12/2/2031	33	32.78	32.09	32.06	31.74	33.46	33.56	32.84	32.34	31.31	29.29	27.93	27.93	27.93	27.93	27.93	30.88	32.84	32.86	32.84	32.84	34.25	28.71	32.57
SPP South - Energy Price - 1H2023	3259	12/3/2031	12/3/2031	30.62	32.09	32.13	31.37	30.25	29.49	33.03	34.02	33.39	31.03	28.9	28.81	28.81	28.81	28.9	28.81	31.03	34.02	33.73	33.97	34.01	35.13	33.46	33.85
SPP South - Energy Price - 1H2023	3260	12/4/2031	12/4/2031	33.46	33.46	33.46	31.24	31.24	33.46	34.34	34.34	32.89	31.73	31.32	31.44	31.03	31.03	30.21	31.03	31.44	34.34	34.34	35.24	34.34	34.34	32.81	30.4
SPP South - Energy Price - 1H2023	3261	12/5/2031	12/5/2031	33.46	33.46	33.77	33.66	31.44	30.32	32.78	35.63	34.04	32.78	32.78	33.04	32.78	32.78	32.78	32.78	33.68	37.55	38.05	38.05	38.05	37.55	34.72	34.05
SPP South - Energy Price - 1H2023	3262	12/6/2031	12/6/2031	33.46	33.77	33.77	33.66	33.77	33.77	39.93	40.93	39.81	39.44	35.73	35.73	35.73	35.73	35.73	35.73	36.81	40.92	39.81	38.84	38.84	36.45	32.95	30.32
SPP South - Energy Price - 1H2023	3263	12/7/2031	12/7/2031	30.32	30.32	30.32	30.32	30.32	30.32	35.73	35.75	35.73	35.73	9.75	8.95	8.53	13.51	19.52	35.73	35.73	39.44	39.44	39.44	38.84	38.84	30.32	30.32
SPP South - Energy Price - 1H2023	3264	12/8/2031	12/8/2031	32.23	32.23	32.23	32.23	32.23	32.23	34.59	33.68	28.74	1.6	1.41	1.14	23.31	1.74	1.92	33.47	34.59	39.62	39.62	39.62	39.62	39.62	35.4	35.13
SPP South - Energy Price - 1H2023	3265	12/9/2031	12/9/2031	35.31	34.67	35.85	36.02	35.56	36.45	40.1	40.67	40.67	39.9	36.68	36.1	35.01	35.01	35.12	35.01	36.04	38.22	38.44	38.18	39.24	36.71	35.74	34.05
SPP South - Energy Price - 1H2023	3266	12/10/2031	12/10/2031	34.91	35.81	35.82	35.35	35.22	36.05	41.04	41.64	41.47	41.04	41.04	37.17	36.69	35.41	36.79	36.03	36.97	39.22	41.04	41.04	40.87	39.5	36.61	34.05
SPP South - Energy Price - 1H2023	3267	12/11/2031	12/11/2031	34.99	35.87	34.99	35.68	34.99	34.99	38.66	38.66	38.01	38.66	36.78	36.78	36.78	36.78	36.78	36.78	36.78	42.2	42.6	36.78	36.78	40.29	34.99	34.99
SPP South - Energy Price - 1H2023	3268	12/12/2031	12/12/2031	32.64	32.09	32.66	31.92	32.74	31.92	35.63	35.75	33.87	33.87	32.15	31.03	7.21	6.47	31.03	33.87	33.87	34.32	33.87	33.87	33.87	33.87	31.92	31.92
SPP South - Energy Price - 1H2023	3269	12/13/2031	12/13/2031	31.92	31.92	31.92	31.92	31.92	31.92	37.62	37.62	37.62	37.62	16.95	19.24	21.22	21.39	37.62	37.62	37.62	39.44	39.44	39.48	39.48	37.62	31.92	31.92
SPP South - Energy Price - 1H2023	3270	12/14/2031	12/14/2031	31.92	31.92	31.92	31.92	31.92	31.92	37.62	37.62	37.62	37.62	37.62	37.62	37.62	37.62	37.62	37.62	38.73	41.95	42.77	39.48	41.95	41.95	35.59	34.05
SPP South - Energy Price - 1H2023	3271	12/15/2031	12/15/2031	33.46	33.46	33.46	33.46	33.46	33.46	34.25	34.32	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	34.31	33.64	33.64	33.64	31.68	31.68
SPP South - Energy Price - 1H2023	3272	12/16/2031	12/16/2031	31.46	31.46	31.46	31.46	31.46	31.54	33.44	33.44	33.44	33.44	33.44	33.44	33.44	31.03	31.03	32.33	33.44	33.44	34.29	34.29	33.44	33.44	33.46	33.46
SPP South - Energy Price - 1H2023	3273	12/17/2031	12/17/2031	33.46	33.46	33.46	33.46	33.46	33.32	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	34.47	38.3	38.02	38.3	37.29	34.67	33.91
SPP South - Energy Price - 1H2023	3274	12/18/2031	12/18/2031	32.74	32.74	32.66	29.41	29.41	29.41	31.49	31.49	31.49	31.49	31.03	11.69	31.03	28.97	31.49	31.49	31.49	31.49	31.49	31.49	31.49	32.99	32.47	32.72
SPP South - Energy Price - 1H2023	3275	12/19/2031	12/19/2031	30.28	30.84	30.28	30.28	30.28	30.28	31.73	34.23	33.73	34.14	31.22	30.98	30.19	30.02	29.53	29.68	30.78	34.01	34.23	34.23	34.23	34.23	31.11	31.85
SPP South - Energy Price - 1H2023	3276	12/20/2031	12/20/2031	31.85	31.11	31.11	31.11	31.11	31.54	36.97	39.44	38.61	39.44	38.94	35.92	35.69	33.97	35.69	35.69	37.37	38.09	38.85	38.57	38.91	39.44	31.85	31.85
SPP South - Energy Price - 1H2023	3277	12/21/2031	12/21/2031	31.11	30.84	30.74	30.59	31.11	30.59	36.68	36.68	37.54	39.44	39.29	38.98	38.33	37.58	37.93	36.68	39.08	40.87	40.87	42.87	41.4	40.5	33.46	34.05
SPP South - Energy Price - 1H2023	3278	12/22/2031	12/22/2031	33.46	33.46	33.46	33.46	33.46	33.46	34.63	35	35	34.6	32.01	30.67	29.87	29.77	29.84	29.77	30.55	34.6	34.6	34.6	34.6	34.6	33.46	31.52
SPP South - Energy Price - 1H2023	3279	12/23/2031	12/23/2031	30.84	30.12	31.24	30.59	28.09	28.09	30.25	30.25	30.25	26.4	25.24	7.04	6.71	6.47	6.8	26.45	30.25	30.25	31.21	32	30.38	30.25	28.09	30.99
SPP South - Energy Price - 1H2023	3280	12/24/2031	12/24/2031	30.12	30.48	30.21	30.12	29.98	30.12	31.41	32.17	31.03	31.32	31.03	30.43	29.81	29.92	29.39	29.39	30.47	34.08	34.08	34.08	34.08	34.08	30.95	30.38
SPP South - Energy Price - 1H2023	3281	12/25/2031	12/25/2031	30.95	30.95	30.95	30.95	30.95	30.95	34.08	34.46	34.08	32.87	30.23	30.11	29.73	29.31	29.31	29.31	30.15	34.08	32.12	30.35	31.16	31.45	29.67	27.1
SPP South - Energy Price - 1H2023	3282	12/26/2031	12/26/2031	27.37	27.37	27.37	27.37	27.37	30.43	31.47	33.77	33.3	33.81	32.63	31.47	31.03	30.32	30.25	29.83	31.88	32.93	32.85	34.18	32.85	32.62	30.44	30.43
SPP South - Energy Price - 1H2023	3283	12/27/2031	12/27/2031	29.02	27.37	30.43	30.43	30.43	30.43	36.34	36.86	32.27	32.27	32.27	32.27	32.27	32.27	32.27	32.27	32.27	36.1	36.1	32.27	35.87	35.48	30.1	27.69
SPP South - Energy Price - 1H2023	3284	12/28/2031	12/28/2031	27.69	27.69	30.1	28.97	30.26	27.69	35.48	35.87	32.27	32.27	32.27	32.27	32.27	32.27	32.27	32.27	32.27	35.87	36.86	36.86	36.86	36.1	31.27	31.27
SPP South - Energy Price - 1H2023	3285	12/29/2031	12/29/2031	29.81	29.81	29.81	29.81	29.81	29.81	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	34.33	36.1	34.5	32.67	31.62	29.81	29.81
SPP South - Energy Price - 1H2023	3286	12/30/2031	12/30/2031	29.54	29.54	29.54	29.81	31.74	32.13	34.12	36.72	36.72	34.14	34.12	34.12	33.97	33.03	32.69	32.75	32.3	34.08	34.84	33.49	31.37	31.37	29.54	29.54
SPP South - Energy Price - 1H2023	3287	12/31/2031	12/31/2031	26.44	26.44	26.44	26.44	26.44	26.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	29.37	32.68	29.65	28.44	28.44	28.44	29.36	26.44
SPP South - Energy Price - 1H2023	3288	1/1/2032	1/1/2032	26.15	26.15	26.15	26.15	27.03	26.15	31.99	31.99	31.99	31.98	31.98	31.99	31.98	31.99	31.99	31.99	34.35	36.5	37.49	37.36	35.87	33	29.07	29.07
SPP South - Energy Price - 1H2023	3289	1/2/2032	1/2/2032	31.15	31.15	31.15	31.15	31.15	31.15	37.37	37.37	37.37	37.37	37.37	33.91	33.91	34.38	37.37	37.37	37.37	37.37	37.37	37.37	37.37	37.37	31.15	31.15
SPP South - Energy Price - 1H2023	3290	1/3/2032	1/3/2032	31.15	31.15	31.15	31.15	31.15	31.15	41.37	41.37	41.37	41.37	41.37	41.37	41.37	41.37	41.37	41.37	41.37	43.5	44.04	41.37	41.37	41.37	31.15	31.15
SPP South - Energy Price - 1H2023	3291	1/4/2032	1/4/2032	31.15	31.15	31.15	31.15	31.15	31.15	41.37	41.37	41.37	41.37	37.3	34.15	38.2	8.51	9.97	41.37	41.37	41.37	41.37	41.37	41.37	41.37	31.15	31.15
SPP South - Energy Price - 1H2023	3292	1/5/2032	1/5/2032	28.41	28.41	28.41	28.41	28.41	28.41	34.42	34.42	34.42	34.42	34.42	34.42	31.66	8.38	6.41	6.52	29.73	34.42	34.42	34.42	34.42	34.42	28.41	28.41
SPP South - Energy Price - 1H2023	3293	1/6/2032	1/6/2032	28.21	28.21	28.21	28.21	28.21	28.21	37.18	37.18	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	35.3	40.03	40.54	40.54	40.54	40.03	32.01	31.41
SPP South - Energy Price - 1H2023	3294	1/7/2032	1/7/2032	28.22	30.48	30.48	30.48	30.48	30.48	39.01	38.92	35.21	33.32	33.32	33.32	33.32	33.32	33.32	33.32	33.32	36.08	37.31	36.09	36.09	33.71	27.39	27.39
SPP South - Energy Price - 1H2023	3295	1/8/2032	1/8/2032	27.12	27.12	27.22	28.06	27.44	29.18	36.07	37.41	33.03	33.03	33.03	33.03	33.03	33.03	33.03	33.03	33.03	36.01	38.68	38.68	38.17	36.01	28.34	28.31
SPP South - Energy Price - 1H2023	3296	1/9/2032	1/9/2032	27.65	27.74	27.65	28.31	28.07	28.41	35.94	35.95	36.1	36.33	36.33	35.86	34.5	31.99	31.56	31.12	31.29	34.85	35.88	35.92	34.13	32.45	27.65	24.9
SPP South - Energy Price - 1H2023	3297	1/10/2032	1/10/2032	24.9	24.9	24.9	24.99	24.9	24.9	33.07	35.95	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07	34.97	37.73	37.73	35.59	35.95	24.9	25.13
SPP South - Energy Price - 1H2023	3298	1/11/2032	1/11/2032	24.9	24.9	25	24.9	24.9	24.9	33.07	33.07	33.07	33.07	11.13	9.96	9.11	8.51	8.03	8.17	33.07	33.07	33.07	33.07	33.07	33.07	24.9	24.9
SPP South - Energy Price - 1H2023	3299	1/12/2032	1/12/2032	29.23	29.51	28.34	32.01	30.24	32.44	37.67	40.95	40.95	40.7	40.7	40.7	40.7	37.67	37.67	37.67	37.67	40.7	43.83	44.83	41.16	40.95	36.39	36.19
SPP South - Energy Price - 1H2023	3300	1/13/2032	1/13/2032	34.51	34.51	34.44	34.12	33.16	38.2	45.21	49.23	51.32	45.17	50.91	45.21	45.21	44.05	45.2	42.95	40.9	39.94	39.6	39.6	39.6	39.6	30.1	30.1
SPP South - Energy Price - 1H2023	3301	1/14/2032	1/14/2032	29.96	30.19	30.19	30.01	32.01	32.67	40.34	40.34	40.34	39.44	39.44	39.44	39.44	39.44	39.44	39.44	39.44	40.34	42.76	42.69	40.34	39.44	32.01	32.01
SPP South - Energy Price - 1H2023	3302	1/15/2032	1/15/2032	32.83	32.01	32.83	32.83	32.83	32.01	41.13	43.17	41.13	38.04	38.04	38.04	38.04	38.43	41.13	41.13	41.13	49.09	52.7	45.6	42.86	39.67	32.01	32.01
SPP South - Energy Price - 1H2023	3303	1/16/2032	1/16/2032	32.01	32.01	32.01	32.01	32.01	32.01	42.96	42.63	44.14	42.85	44.23	42.63	42.15	42.15	39.55	38.91	38.91	42.15	42.15	42.15	38.91	38.91	32.01	32.01
SPP South - Energy Price - 1H2023	3304	1/17/2032	1/17/2032	32.01	29.47	29.47	29.47	29.47	29.47	39.14	39.14	42.51	42.41	39.14	39.14	42.51	42.51	39.14	39.14	39.14	42.51	44.86	44.86	42.51	44.04	33.16	33.16
SPP South - Energy Price - 1H2023	3305	1/18/2032	1/18/2032	33.16	32.54	32.01	32.54	32.01	32.01	42.51	43.22	39.14	39.14	39.14	39.14	39.14	39.14	39.14	42.51	42.51	44.86	52.95	53.44	44.86	44.86	32.01	32.01
SPP South - Energy Price - 1H2023	3306	1/19/2032	1/19/2032	32.01	32.01	32.01	32.01	32.01	33.09	41.41	41.41	38.28	38.28	38.27	33.91	33.91	35.13	6.41	33.65	33.91	36.04	38.27	38.27	38.27	38.27	28.89	28.89
SPP South - Energy Price - 1H2023	3307	1/20/2032	1/20/2032	35.19	10.26	32.71	35.21	33.31	36.33	41.95	46.42	42.01	46.41	37.05	36.83	34.9	37.57	39.19	37.36	46.42	46.42	46.42	46.42	50.88	50.88	41.83	41.41
SPP South - Energy Price - 1H2023	3308	1/21/2032	1/21/2032	39.67	39.52	39.62	35.87	34.58	36.72	44.49	48.64	44.49	44.49	43.09	39.39	35.13	36.3	33.91	39.39	39.39	44.49	44.49	44.49	44.49	44.49	34.58	34.58
SPP South - Energy Price - 1H2023	3309	1/22/2032	1/22/2032	32.56	32.56	32.56	32.56	32.56	32.56	42.48	42.48	42.48	42.48	42.48	42.48	39.32	39.22	42.48	30.06	39.08	42.48	44.64	46.01	42.48	42.48	32.56	32.56
SPP South - Energy Price - 1H2023	3310	1/23/2032	1/23/2032	32.11	32.11	32.11	32.11	32.11	32.11	42	42	35.13	2.48	6.41	6.96	6.41	1.6	6.41	6.52	6.27	42	54.66	48.08	54.66	47.38	36.88	36.88
SPP South - Energy Price - 1H2023	3311	1/24/2032	1/24/2032	33.84	33.84	33.84	35.72	33.84	36.79	48.98	48.98	42.65	42.65	13.7	12.29	10.29	8.51	8.03	8.17	40.65	42.65	48.67	48.65	48.75	48.75	36.7	33.16
SPP South - Energy Price - 1H2023	3312	1/25/2032	1/25/2032	33.77	35.72	33.77	36.7	36.88	36.88	48.98	48.98	44.04	42.65	42.65	42.51	42.65	42.65	42.51	10.58	17.91	46.21	48.98	48.98	42.65	42.65	32.11	32.11
SPP South - Energy Price - 1H2023	3313	1/26/2032	1/26/2032	31.74	31.74	31.74	31.74	30.73	31.74	38.72	37.33	37.21	37.21	37.21	36.64	33.91	31.78	37.21	37.21	37.21	37.32	39.76	39.89	37.33	37.33	30.41	30.88
SPP South - Energy Price - 1H2023	3314	1/27/2032	1/27/2032	30.88	28.47	30.88	30.88	30.88	30.88	41.01	44.71	42.93	40.41	39.01	37.86	36.41	36.41	33.91	34.69	36.41	36.6	36.41	36.41	36.41	36.41	27.54	28.52
SPP South - Energy Price - 1H2023	3315	1/28/2032	1/28/2032	25.35	28.76	28.76	28.93	32.01	32.01	37.01	36.9	36.9	34.59	34.59	34.71	34.59	34.59	33.91	34.59	34.59	36.46	37.62	38.15	37.17	37.18	32.03	32.01
SPP South - Energy Price - 1H2023	3316	1/29/2032	1/29/2032	31.67	30.9	31.27	31.27	31.27	31.27	39.88	40.39	36.07	35.67	34.13	36.01	34.13	34.13	34.13	34.13	36.05	39.88	39.88	39.88	39.88	39.88	32.15	32.01
SPP South - Energy Price - 1H2023	3317	1/30/2032	1/30/2032	32.65	32.01	31.02	31.49	31.77	32.01	42.63	42.63	36.54	36.54	36.54	35.59	33.91	30.69	33.61	26.06	5.74	36.54	37.48	36.54	36.54	36.54	30.32	30.31
SPP South - Energy Price - 1H2023	3318	1/31/2032	1/31/2032	30.31	30.32	30.32	30.32	30.32	30.32	40.26	40.26	40.26	40.26	40.26	34.4	7.64	7.56	7.48	7.48	7.2	40.26	40.26	40.26	40.26	40.26	31.48	30.32
SPP South - Energy Price - 1H2023	3319	2/1/2032	2/1/2032	21.16	20.86	20.86	20.86	20.86	20.86	30.88	31.94	32.66	32.2	31.93	31.64	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	20.86	20.86

SPP South - Energy Price - 1H2023	3320	2/2/2032	2/2/2032	20.86	20.86	20.86	20.86	20.86	20.86	34.21	34.21	34.21	31.19	6.15	5.75	4.88	4.88	3.66	1.14	3.4	4.88	26.43	30.57	30.57	31.19	20.86	10.54
SPP South - Energy Price - 1H2023	3321	2/3/2032	2/3/2032	6.1	20.45	19.46	20.45	20.45	20.45	33.61	33.61	33.61	33.61	33.61	33.61	33.61	33.61	33.47	33.61	33.61	33.61	33.61	34.47	33.61	33.61	20.45	20.45
SPP South - Energy Price - 1H2023	3322	2/4/2032	2/4/2032	19	19	19	19	19	19	31.48	36.78	33.23	33.23	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	33.23	36.78	36.78	21.23	20.17
SPP South - Energy Price - 1H2023	3323	2/5/2032	2/5/2032	21.29	20.84	20.91	20.88	20.16	20.32	33.25	33.25	32.89	32.89	32.89	32.89	31.19	31.08	31.19	31.19	31.19	32.89	33.2	33.24	33.23	34.36	21.23	21.26
SPP South - Energy Price - 1H2023	3324	2/6/2032	2/6/2032	21.59	21.17	21.17	21.17	21.59	21.59	38.68	38.68	38.17	38.17	38.17	36.32	33.38	33.38	33.38	33.38	33.38	34.41	36.18	37.91	38.17	38.17	22.73	21.59
SPP South - Energy Price - 1H2023	3325	2/7/2032	2/7/2032	21.59	20.73	20.91	20.62	19.83	20.19	32.48	32.7	31.94	29.34	29.34	29.34	28.92	7.77	7.77	5.62	5.41	7.77	29.34	29.34	29.34	29.34	19.83	19.83
SPP South - Energy Price - 1H2023	3326	2/8/2032	2/8/2032	19.79	7.63	19.83	19.83	19.83	19.83	29.34	29.91	30.56	29.34	29.45	29.82	29.34	29.34	29.34	29.34	29.34	29.84	31.94	31.94	30.25	29.34	19.83	19.83
SPP South - Energy Price - 1H2023	3327	2/9/2032	2/9/2032	18.6	18.6	18.6	18.6	18.6	18.6	32.24	33.13	32.01	31.56	31.56	30.32	7.97	5.55	5.49	5.49	7.96	33.09	33.99	34	33.71	32.73	19.46	18.6
SPP South - Energy Price - 1H2023	3328	2/10/2032	2/10/2032	18.48	18.48	18.48	18.48	18.48	18.93	33.19	35.9	31.39	31.19	31.19	31.39	5.6	5.55	5.49	5.49	5.28	18.52	32.35	31.39	31.39	31.39	18.48	18.48
SPP South - Energy Price - 1H2023	3329	2/11/2032	2/11/2032	17.96	17.41	17.41	5.88	9.5	18.93	32.05	32.35	32.05	20.29	1.01	1.08	1.07	1.05	1	1.14	1.05	31.19	33.23	36.58	36.65	36.65	21.23	21.08
SPP South - Energy Price - 1H2023	3330	2/12/2032	2/12/2032	19.86	19.41	19.29	20.19	20.34	20.53	34.27	35.28	31.58	31.58	31.58	31.58	31.58	31.58	30.87	31.19	31.57	31.58	31.58	33.2	33.2	33.13	19.53	18.66
SPP South - Energy Price - 1H2023	3331	2/13/2032	2/13/2032	18.24	18.24	18.24	18.24	18.24	20.29	33.11	33.16	30.95	30.95	30.95	9.27	23.54	1.05	21.68	1.14	5.28	28.6	31.11	30.95	30.95	30.95	18.24	18.24
SPP South - Energy Price - 1H2023	3332	2/14/2032	2/14/2032	18.24	18.24	18.24	18.24	18.24	18.24	26.98	30.02	26.98	26.98	26.98	26.98	26.98	26.98	5.59	3.85	2.06	26.89	26.89	26.98	26.98	26.98	18.24	18.24
SPP South - Energy Price - 1H2023	3333	2/15/2032	2/15/2032	18.24	18.24	18.24	18.24	18.24	18.24	26.98	28.26	26.98	26.98	26.98	26.98	26.98	26.98	26.98	26.98	26.98	26.98	26.98	30.02	30.63	30.65	20.29	19.05
SPP South - Energy Price - 1H2023	3334	2/16/2032	2/16/2032	21.48	21.59	21.48	21.48	21.59	21.93	39.03	40.95	41.56	41.55	41.09	41.1	39.47	38.85	38.84	37.68	38.71	40.96	40.86	40.83	40.19	37.97	21.58	21.48
SPP South - Energy Price - 1H2023	3335	2/17/2032	2/17/2032	20.94	20.94	20.94	20.94	20.94	21.05	34.95	36.25	34.95	34.94	34.94	5.75	1.07	24.17	0	1.14	26.23	29.63	34.94	34.95	34.94	34.94	20.97	20.94
SPP South - Energy Price - 1H2023	3336	2/18/2032	2/18/2032	28.15	22.36	22.25	22.36	22.25	27.35	45.59	45.59	21.43	1.32	17.52	1.08	1.07	1.05	0	1.08	1.05	4.88	30.14	35.7	36.22	33.19	22.36	21.59
SPP South - Energy Price - 1H2023	3337	2/19/2032	2/19/2032	21.59	21.59	21.59	21.59	22.36	22.62	37.42	37.42	24.86	27.36	6.15	1.08	1.07	0	3.66	3.66	3.66	35.71	37.42	37.42	37.42	37.42	22.62	22.62
SPP South - Energy Price - 1H2023	3338	2/20/2032	2/20/2032	20.61	20.61	20.61	20.61	20.61	20.61	35.48	34.46	34.46	34.46	7.86	1.08	1.07	1.05	1	1.14	5.28	28.11	34.46	34.46	34.46	34.46	20.61	20.61
SPP South - Energy Price - 1H2023	3339	2/21/2032	2/21/2032	20.61	20.61	20.61	20.61	20.61	20.61	30.5	31.94	30.5	30.5	30.5	28.94	8.08	5.68	25.97	30.5	30.5	30.5	30.85	30.5	30.5	30.5	20.61	20.61
SPP South - Energy Price - 1H2023	3340	2/22/2032	2/22/2032	20.61	20.61	20.61	20.61	20.61	20.61	30.5	31.1	30.5	30.5	28.87	30.5	6.05	1.07	1.03	3.85	1.08	6.05	30.5	30.5	30.5	30.5	20.61	20.61
SPP South - Energy Price - 1H2023	3341	2/23/2032	2/23/2032	19.11	19.11	19.11	19.11	19.11	19.2	33.12	33.54	32.89	32.24	32.24	32.24	32.24	32.24	32.24	32.24	32.24	33.64	34.83	34.36	34.07	33.13	20.14	19.89
SPP South - Energy Price - 1H2023	3342	2/24/2032	2/24/2032	20.24	20.24	20.24	20.24	20.24	20.24	34.79	35.39	33.91	31.19	31.19	25.41	31.19	31.19	24.55	1.14	31.19	24.34	32.34	33.91	31.19	33.91	20.24	20.24
SPP South - Energy Price - 1H2023	3343	2/25/2032	2/25/2032	18.84	18.84	18.84	18.84	18.84	18.84	33.22	34.37	32.66	31.19	21.71	19.55	4.39	4.32	1.04	1.01	6.46	6.46	30.51	31.85	31.85	31.85	18.84	5.26
SPP South - Energy Price - 1H2023	3344	2/26/2032	2/26/2032	6.38	5.6	8.61	5.72	8.61	19.75	33.18	33.18	31.19	28.7	28.7	28.7	28.19	30.88	31.19	31.19	28.7	32.31	33.18	33.69	34.16	33.38	21.11	19.75
SPP South - Energy Price - 1H2023	3345	2/27/2032	2/27/2032	19.75	19.26	19.26	19.26	19.26	19.77	33.18	33.26	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	33.14	31.8	31.8	31.8	19.26	19.26
SPP South - Energy Price - 1H2023	3346	2/28/2032	2/28/2032	19.26	19.26	19.26	19.26	19.26	19.26	28.49	7.08	0.98	0.92	0.97	0.89	1.02	0.93	0.98	1.03	0.98	6.37	28.49	28.49	27.24	8.68	18.11	19.26
SPP South - Energy Price - 1H2023	3347	2/29/2032	2/29/2032	19.28	19.28	19.28	19.28	19.28	19.28	28.54	28.54	6.71	5.88	5.88	0.89	1.02	0.93	6.49	5.97	5.97	6.37	21.43	28.53	28.4	26.08	16.61	17.66
SPP South - Energy Price - 1H2023	3348	3/1/2032	3/1/2032	19.36	17.81	19.61	19.61	19.61	19.61	27.62	26.03	0.8	5.31	0.79	17.97	1.24	26.03	19.53	16.64	16.24	26.03	30.67	30.67	30.67	30.67	19.61	19.61
SPP South - Energy Price - 1H2023	3349	3/2/2032	3/2/2032	18.49	8.65	8.26	17.89	18.49	18.49	26.03	25.83	13.18	5.31	0.79	0.73	0.83	0.76	0.87	0.84	0.82	0.83	24.96	28.37	28.37	28.37	18.49	18.49
SPP South - Energy Price - 1H2023	3350	3/3/2032	3/3/2032	21.86	21.86	21.86	21.86	21.86	21.86	32.93	32.93	29.7	26.03	26.05	27.32	27.88	27.81	26.03	28.66	32.93	32.93	32.93	32.93	32.93	32.93	21.86	21.86
SPP South - Energy Price - 1H2023	3351	3/4/2032	3/4/2032	19.9	19.68	19.68	19.68	19.9	19.68	30.72	31.21	29.98	29.98	29.98	29.97	27.88	27.58	28.9	5.5	5.39	25.52	29.98	31.44	31.12	30.71	19.68	19.68
SPP South - Energy Price - 1H2023	3352	3/5/2032	3/5/2032	18.2	17.63	17.63	18.85	19.61	19.61	28.32	28.18	27.64	27.2	27.2	26.03	26.03	22.52	5.29	5.5	23.4	27.2	27.61	27.36	27.2	27.2	17.63	17.63
SPP South - Energy Price - 1H2023	3353	3/6/2032	3/6/2032	17.63	17.63	17.63	17.63	17.63	17.63	25.98	25.98	0.89	0.83	0.88	0.81	0.93	6.2	25.37	25.98	25.98	25.98	28.9	28.9	27.08	26.2	17.63	17.63
SPP South - Energy Price - 1H2023	3354	3/7/2032	3/7/2032	17.63	17.63	17.63	17.63	17.63	17.63	25.98	25.98	25.98	25.98	25.98	25.98	25.98	5.73	5.87	6.1	25.98	25.98	26.42	25.98	25.98	25.98	17.63	17.63
SPP South - Energy Price - 1H2023	3355	3/8/2032	3/8/2032	16.42	16.42	4.89	4.92	16.42	16.42	25.56	25.56	25.56	23.43	23.47	22.11	16.87	22.11	24.03	22.46	22.11	5.19	23.07	23.97	24.19	24.03	16.42	16.42
SPP South - Energy Price - 1H2023	3356	3/9/2032	3/9/2032	17.16	17.16	16.66	17.16	17.16	17.26	27.66	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	27.37	27.66	27.18	26.57	17.97	17.59
SPP South - Energy Price - 1H2023	3357	3/10/2032	3/10/2032	17.69	17.35	17.35	17.35	17.35	17.35	26.83	26.82	26.82	26.03	26.82	26.82	26.82	26.82	26.82	26.82	26.82	26.82	28.12	28.01	27.73	27.32	19.26	17.35
SPP South - Energy Price - 1H2023	3358	3/11/2032	3/11/2032	18.75	18.04	19.03	19.61	19.61	19.77	30.94	30.56	28.73	28.73	27.76	27.76	28.12	27.79	27.76	27.76	27.76	27.76	27.76	27.76	27.76	27.76	18.04	18.04
SPP South - Energy Price - 1H2023	3359	3/12/2032	3/12/2032	17.69	17.28	17.28	17.69	17.31	17.28	27	27.23	27.51	27.33	26.73	28.71	27.67	27.57	27.46	27.67	27.67	27.67	27.72	27.67	27.34	26.72	17.28	17.28
SPP South - Energy Price - 1H2023	3360	3/13/2032	3/13/2032	17.28	17.28	17.28	17.28	17.28	17.28	25.46	25.46	25.46	5.9	0.88	0.81	0	0.84	0.96	0.93	0.91	5.76	25.46	25.46	25.46	25.46	17.28	17.28
SPP South - Energy Price - 1H2023	3361	3/14/2032	3/14/2032	17.28	17.28	17.28	17.28	17.28	17.28	27.68	28.36	28.36	28.36	26.09	26.07	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	17.28	17.28
SPP South - Energy Price - 1H2023	3362	3/15/2032	3/15/2032	17.96	17.92	17.92	17.92	19.37	18.71	28.63	28.63	29.51	29.33	28.63	28.63	26.03	28.63	28.63	28.63	27.45	27.75	28.09	28.63	26.03	26.03	17.92	16.74
SPP South - Energy Price - 1H2023	3363	3/16/2032	3/16/2032	16.16	16.09	17.11	17.16	17.67	17.67	28.28	26.96	9.29	5.31	4.79	4.81	4.92	1.85	5.29	4.92	4.92	5.19	23.97	26.03	28.28	27.36	17.67	17.67
SPP South - Energy Price - 1H2023	3364	3/17/2032	3/17/2032	17.8	17.8	17.8	17.8	17.8	17.8	28.46	28.45	17.2	0.87	0.87	0.73	0.83	0.76	0.87	0.84	5.39	5.19	25.44	28.46	28.46	28.46	17.8	17.8
SPP South - Energy Price - 1H2023	3365	3/18/2032	3/18/2032	19.61	19.61	19.61	19.61	19.61	20.32	33.25	33.25	33.25	33.25	30.59	33.25	29.98	29.98	29.98	29.98	29.98	29.98	32.59	29.98	29.98	29.98	18.92	14.48
SPP South - Energy Price - 1H2023	3366	3/19/2032	3/19/2032	15	17.88	4.88	7.71	17.82	7.56	19.37	5.77	0.8	0.75	0.79	0.73	0	0.76	0.87	1	5.39	26.03	29.25	29.25	29.25	29.25	18.38	18.38
SPP South - Energy Price - 1H2023	3367	3/20/2032	3/20/2032	18.38	18.38	18.49	19.61	19.61	19.61	28.9	28.9	27.09	27.09	27.09	27.09	6.06	19.49	19.49	12.03	6.57	8.72	27.09	27.09	27.09	27.09	18.38	18.38
SPP South - Energy Price - 1H2023	3368	3/21/2032	3/21/2032	18.38	18.38	18.38	18.38	18.38	18.38	27.09	27.09	27.09	27.09	6.57	6.15	6.15	5.73	5.87	6.1	6.15	27.09	27.09	27.09	27.09	26.1	18.38	7.52
SPP South - Energy Price - 1H2023	3369	3/22/2032	3/22/2032	18.78	18.78	18.78	18.78	18.78	19.61	29.94	29.03	29.03	29.03	28.07	29.08	29.03	29.03	29.03	29.03	29.56	30.44	30.57	30.16	29.84	29.53	19.31	18.78
SPP South - Energy Price - 1H2023	3370	3/23/2032	3/23/2032	18.12	18.12	18.12	18.12	18.12	18.12	28.62	28.15	28.14	28.15	28.14	28.15	28.15	28.47	28.76	29.49	29.49	29.15	29.67	29.57	28.96	28.78	19.61	19.61
SPP South - Energy Price - 1H2023	3371	3/24/2032	3/24/2032	19.45	19.46	19.19	17.47	17.73	17.93	29.41	27.26	28.38	27.68	27.68	27.31	27.26	26.03	26.96	27.25	27.25	27.25	27.45	27.65	27.26	27.25	17.47	17.47
SPP South - Energy Price - 1H2023	3372	3/25/2032	3/25/2032	16.5	18.01	17.57	17.42	18.35	18.35	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	25.94	27.45	26.82	26.42	16.5	16.5
SPP South - Energy Price - 1H2023	3373	3/26/2032	3/26/2032	15.43	15.43	15.43	15.43	15.43	15.9	24.49	24.49	21.27	13.89	14.05	5.99	7.56	14.05	12.96	24.49	24.49	24.49	24.49	26.03	26.03	26.03	17.14	15.43
SPP South - Energy Price - 1H2023	3374	3/27/2032	3/27/2032	15.43	15.43	16.78	16.78	16.78	15.43	25.26	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	25.26	25.26	25.26	25.26	25.26	16.03	15.43
SPP South - Energy Price - 1H2023	3375	3/28/2032	3/28/2032	15.43	15.43	15.43	15.43	15.43	15.45	23.22	22.74	22.74	7.61	1.24	1.02	0.99	0.95	1.02	0.94	0.97	8.56	22.74	8.41	9.83	9.74	6.43	5.74
SPP South - Energy Price - 1H2023	3376	3/29/2032	3/29/2032	6.55	5.57	5.74	5.78	5.97	5.78	7.79	7.4	1.1	0.99	1.12	6.88	23.93	25.12	25.12	23.6	25.12	25.24	27.39	27.13	27.38	26.24	16.5	15.9
SPP South - Energy Price - 1H2023	3377	3/30/2032	3/30/2032	16.71	16.71	16.71	16.71	16.71	16.71	26.54	26.22	26.03	26.03	19.65	1.09	0.89	0.85	0.92	0.85	26.03	26.03	26.22	26.22	26.22	26.22	16.71	16.71
SPP South - Energy Price - 1H2023	3378	3/31/2032	3/31/2032	16.71	16.75	16.75	5.78	16.75	16.75	26.29	25.54	7.12	6.86	6.81	1.09	7.14	7.26	7.25	7.75	8.02	7.71	23.38	22.68	8.85	8.02	4.16	3.91
SPP South - Energy Price - 1H2023	3379	4/1/2032	4/1/2032	3.84	3.69	3.36	3.38	9.22	10.64	19.82	19.82	20.53	16	5.37	5.24	16.89	19.82	18.42	5.9	19.15	19.82	19.82	18.42	18.42	6.68	3.77	3.36
SPP South - Energy Price - 1H2023	3380	4/2/2032	4/2/2032	3.84	3.69	3.84	4.17	3.84	9.98	18.52	17.41	19.82	19.82	19.82	17.41	5.44	16.02	17.41	7.3	6.1	5.87	19.35	20.35	20.35	20.35	9.98	9.98
SPP South - Energy Price - 1H2023	3381	4/3/2032	4/3/2032	9.98	9.98	10.85	9.98	10.4	9.98	18.33	18.33	18.33	18.21	18.33	7.78	7.21	5.88	5.87	0.69	6.5	18.33	18.33	18.33	18.33	18.33	9.98	9.98
SPP South - Energy Price - 1H2023	3382	4/4/2032	4/4/2032	9.98	9.98	9.98	9.98	9.98	9.98	18.33	16.86	7.57	12.65	18.33	16.35	18.33	18.33	16.86	18.33	18.33	18.33	20.06	20.06	20.06	18.53	9.98	9.98
SPP South - Energy Price - 1H2023	3383	4/5/2032	4/5/2032	9.76	9.76	9.76	9.76	9.76	9.76	19.56	19.56	19.56	19.56	19.29	5.24	11.55	5.53	11.55	11.55	11.54	11.55	19.56	19.56	19.56	16.45	9.54	8.77
SPP South - Energy Price - 1H2023	3384	4/6/2032	4/6/2032	8.77	8.77	3.36	9.54	8.77	10.1	19.82	16.45	5.42	5.22	5.18	5.24	5.44	16.95	6.91	7.3	6.91	20.15	20.15	20.15	20.89	20.15	10.1	10.1
SPP South - Energy Price - 1H2023	3385	4/7/2032	4/7/2032	4.18	5.14	5.75	4.73	10.4	10.4	20.68	20.68	5.85	5.22	19.74	18.16	19.74	18.16	20.68	20.68	19.82	20.68	20.68	20.68	20.68	20.68	5.4	3.36
SPP South - Energy Price - 1H2023	3386	4/8/2032	4/8/2032	5.01	10.25	10.25	10.25	10.25	10.25	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.65	20.42	20.42	10.25	10.25
SPP South - Energy Price - 1H2023	3387	4/9/2032	4/9/2032	10.12	10.12	10.12	10.12	10.21	10.71	21.06	20.19	5.42	0.76	0.83	0.83	0.68	0.65	0.7	0.65	0.66	5.87	5.56	19.82	17.62	19.82	10.12	10.12
SPP South - Energy Price - 1H2023	3388	4/10/2032	4/10/2032	3.84	3.69	3.36	3.38	3.5	3.66	6.31	6	0.89	0	0	0	0	0	0	0	0.71	6.25	5.91	18.57	18.57	18.57	10.12	10.12
SPP South - Energy Price - 1H2023	3389	4/11/2032	4/11/2032	10.12	10.12	10.12	10.12	10.12	10.12	18.57	18.57	8.89	5.56	8.74	8.04	5.79	5.88	5.87	8.04	13.85	18.57	20.33	20.33	18.93	18.57	10.12	10.12
SPP South - Energy Price - 1H2023	3390	4/12/2032	4/12/2032	10.07	10.07	10.07	10.07	10.07	10.07	20.11	20.11	20.11	19.82	9.67	10.51	5.44	5.53	5.52	6.27	6.27	9.56	19.82	19.82	20.11	19.82	10.07	10.07
SPP South - Energy Price - 1H2023	3391	4/13/2032	4/13/2032	4.49	4.51	4.51	4.49	4.38	10.19	20.31	20.31	20.31	9.79	9.64	5.24	5.44	5.53	5.52	5.9	5.9	8.47	20.31	20.78	20.31	20.31	10.19	10.19
SPP South - Energy Price - 1H2023	3392	4/14/2032	4/14/2032	10.32	10.32	10.32	10.32	10.32	10.32	20.55	5.63	0.83	0.76	0	0.83	0.68	0.65	0.7	0.65	0.76	19.82	19.82	17.93	6.74	6.74	3.91	3.91
SPP South - Energy Price - 1H2023	3393	4/15/2032	4/15/2032	10.14	10.14	10.14	10.14	10.14	10.14	19.82	5.63	5.42	5.22	5.18	5.24	5.44	5.44	5.44	5.9	6.1	5.87	5.56	17.08	16.44	19.82	10.14	10.14
SPP South - Energy Price - 1H2023	3394	4/16/2032	4/16/2032	9.94	9.94	9.94	9.94	10.88	10.88	21.03	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	20.3	20.68	20.09	10.63	10.19
SPP South - Energy Price - 1H2023	3395	4/17/2032	4/17/2032	10.08	10.03	9.94	9.94	10.04	10.02	18.6	18.26	18.26	18.26	18.26	18.26	18.26	17.59	17.96	18.26	18.26	18.26	18.26	18.26	17.96	18.26	9.94	9.94
SPP South - Energy Price - 1H2023	3396	4/18/2032	4/18/2032	9.94	9.94	9.94	9.94	9.94	9.94	17.96	18.26	17.96	14.6	13.99	18.26	18.26	18.26	18.26	19.98	19.98	19.98	19.98	19.98	18.26	18.26	9.94	9.94
SPP South - Energy Price - 1H2023	3397	4/19/2032	4/19/2032	9.74	9.74	9.74	9.74	9.74	9.74	19.53	19.53	19.53	19.53	19.53	19.53	19.53	19.53	19.95	20.03	20.76	21.62	21.67	22.29	21.73	21.62	10.65	10.65
SPP South - Energy Price - 1H2023	3398	4/20/2032	4/20/2032	10.79	10.18	10.76	10.83	10.76	10.76	20.74	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.93	20.86	20.87	20.89	21	20.74	10.61	10.02
SPP South - Energy Price - 1H2023	3399	4/21/2032	4/21/2032	9.67	9.67	9.76	10.02	10.58	10.58	19.41	20.25	19.41	19.41	19.57	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	9.67	9.67
SPP South - Energy Price - 1H2023	3400	4/22/2032	4/22/2032	9.55	9.55	9.55	9.55	9.55	9.55	19.19	19.19	19.19	17.9	16.52	13.85	13.85	5.53	5.52	5.9	13.85	13.85	17.82	19.19	19.19	19.19	9.55	9.55
SPP South - Energy Price - 1H2023	3401	4/23/2032	4/23/2032	9.5	6.17	7.06	9.5	9.5	9.5	19.11	19.11	19.11	19.11	19.11	19.11	5.44	5.53	5.52	5.9	6.1	5.87	6.5	6.5	6.74	6.68	3.77	3.36
SPP South - Energy Price - 1H2023	3402	4/24/2032	4/24/2032	3.84	3.16	3.16	3.38	3.44	3.39	6.31	6	5.11	5.56	0.91	0.89	0.72	0.69	0.75	0.69	0.71	6.25	5.75	17.44	17.44	17.45	9.5	9.5

SPP South - Energy Price - 1H2023	3403	4/25/2032	4/25/2032	9.5	9.5	9.5	9.5	9.5	9.5	17.44	7.38	5.77	5.56	5.52	5.57	5.79	5.88	5.87	6.28	6.5	7.42	17.45	17.45	17.59	17.45	9.5	9.5
SPP South - Energy Price - 1H2023	3404	4/26/2032	4/26/2032	9.84	9.84	9.84	9.84	9.84	9.84	17.88	3.36	2.9	2.77	3.14	3.66	4.16	5	6.4	6.4	6.37	5.87	19.59	19.7	19.7	19.7	9.84	9.84
SPP South - Energy Price - 1H2023	3405	4/27/2032	4/27/2032	10.03	10.03	10.03	10.03	10.03	10.03	20.04	20.04	20.04	20.04	20.04	20.13	20.04	20.04	20.87	21.44	22.87	21.58	21.75	21.49	21.49	21.49	10.98	10.22
SPP South - Energy Price - 1H2023	3406	4/28/2032	4/28/2032	10.22	10.08	10.08	9.97	10.04	10.28	19.94	20.86	20.86	20.91	20.79	19.94	21.03	21.08	21.09	21.79	21.79	21.79	22.75	22.09	21.03	21.04	10.14	9.97
SPP South - Energy Price - 1H2023	3407	4/29/2032	4/29/2032	9.57	9.88	9.57	9.8	9.96	10.06	20.49	19.23	19.23	19.23	18.47	19.23	19.23	19.23	19.23	6.4	16.05	19.23	19.23	19.23	19.23	19.23	9.57	9.57
SPP South - Energy Price - 1H2023	3408	4/30/2032	4/30/2032	9.42	9.42	9.42	9.42	9.49	9.42	18.96	3.36	0.72	1.88	3.14	3.66	3.66	1.23	3.36	9.88	18.96	18.96	14.94	18.96	19.01	18.96	9.42	9.42
SPP South - Energy Price - 1H2023	3409	5/1/2032	5/1/2032	13.85	12.74	12.74	4.14	13.85	13.85	15.78	4.46	4.46	4.4	3.27	4.07	4.07	8.45	7.78	15.78	15.78	15.78	15.78	15.78	15.78	15.78	13.85	13.85
SPP South - Energy Price - 1H2023	3410	5/2/2032	5/2/2032	13.85	13.85	9.58	4.14	9.55	8.79	11.07	3.5	3.02	2.89	3.81	3.81	4.32	5.2	5.92	15.78	15.78	15.78	15.78	16.26	16.56	16.28	14.43	13.9
SPP South - Energy Price - 1H2023	3411	5/3/2032	5/3/2032	13.2	13.2	13.2	13.2	13.65	13.95	16.61	15.4	2.81	5.13	3.26	3.69	4.35	5.13	11.95	7.58	7.58	15.4	15.4	16.32	17.63	16.33	14.23	13.93
SPP South - Energy Price - 1H2023	3412	5/4/2032	5/4/2032	13.63	13.79	14.23	14.17	14.31	14.77	17.42	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	16.11	16.49	16.55	15.75	14.11	13.55
SPP South - Energy Price - 1H2023	3413	5/5/2032	5/5/2032	14.32	14.32	14.32	14.32	14.47	14.63	17.12	16.53	16.53	16.53	16.53	16.53	16.53	16.53	16.53	16.53	16.53	16.53	17.12	18.69	18.49	17.32	14.49	14.32
SPP South - Energy Price - 1H2023	3414	5/6/2032	5/6/2032	14.38	14.38	14.38	14.38	14.54	15.64	16.89	16.6	5.3	5.3	2.82	5.3	3.74	5.3	16.6	9.62	9.62	16.6	16.6	16.6	16.62	17.82	14.38	14.38
SPP South - Energy Price - 1H2023	3415	5/7/2032	5/7/2032	14.34	14.34	14.38	14.34	14.34	15.62	17.15	16.55	16.6	16.55	16.72	16.88	18.92	17.82	16.88	17.82	17.91	17.91	19.12	18.92	18.92	18.62	16.1	15.67
SPP South - Energy Price - 1H2023	3416	5/8/2032	5/8/2032	15.67	15.67	15.11	15.11	15.11	15.67	17.85	17.85	17.85	17.85	17.85	16.41	17.21	17.85	17.85	18.63	17.21	17.85	17.94	18.93	19.22	18.83	16.1	15.67
SPP South - Energy Price - 1H2023	3417	5/9/2032	5/9/2032	15.67	15.67	15.46	14.68	15.67	15.67	17.85	16.74	16.51	16.44	16.55	17.85	17.85	17.85	17.85	17.85	17.85	17.85	17.99	17.85	16.55	16.6	14.34	14.34
SPP South - Energy Price - 1H2023	3418	5/10/2032	5/10/2032	14.53	14.53	14.53	14.53	14.7	14.7	17.03	17.71	16.75	16.75	17.8	16.75	17.82	17.82	16.9	17.82	16.75	16.75	17.02	16.75	16.75	17.19	14.53	14.53
SPP South - Energy Price - 1H2023	3419	5/11/2032	5/11/2032	14.65	14.65	14.65	15.93	14.65	15	16.86	16.86	16.86	7.98	2.82	3.29	3.74	6.91	16.86	16.87	16.87	16.87	16.87	16.87	16.87	16.87	14.65	14.65
SPP South - Energy Price - 1H2023	3420	5/12/2032	5/12/2032	14.89	14.89	5.91	14.89	14.89	15.25	17.1	17.1	17.1	17.82	17.1	17.1	17.1	17.82	17.1	17.82	17.82	17.82	17.82	18.74	17.96	18.37	15.47	14.89
SPP South - Energy Price - 1H2023	3421	5/13/2032	5/13/2032	15.32	15.2	15.07	15.06	15.06	15.56	17.27	17.27	17.7	17.82	17.82	17.82	18.46	17.89	17.92	19.72	17.82	17.82	17.82	18.08	19.37	17.92	15.63	15.06
SPP South - Energy Price - 1H2023	3422	5/14/2032	5/14/2032	14.94	14.95	14.95	14.94	14.94	15.31	17.82	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.82	17.82	17.79	16.34	16.34
SPP South - Energy Price - 1H2023	3423	5/15/2032	5/15/2032	14.94	14.95	14.94	14.94	15.05	14.94	17.02	17.02	17.75	18.41	17.34	17.1	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.32	17.02	14.94	14.94
SPP South - Energy Price - 1H2023	3424	5/16/2032	5/16/2032	14.94	14.94	14.94	14.94	14.94	14.94	15.91	17.02	17.02	17.02	5.78	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.02	17.02	14.94	14.94
SPP South - Energy Price - 1H2023	3425	5/17/2032	5/17/2032	15.47	15.47	15.47	15.47	15.47	15.87	17.68	17.47	17.68	15.43	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	18.68	17.68	15.47	15.47
SPP South - Energy Price - 1H2023	3426	5/18/2032	5/18/2032	15.59	15.59	15.59	15.59	15.84	15.59	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	15.59	15.59
SPP South - Energy Price - 1H2023	3427	5/19/2032	5/19/2032	7.68	4.7	9.98	5.88	15.39	12.09	16.41	3.03	2.61	2.49	2.82	3.29	3.74	5.57	5.12	5.75	5.72	5.28	15.15	17.6	17.6	17.6	15.39	15.39
SPP South - Energy Price - 1H2023	3428	5/20/2032	5/20/2032	15.24	4.7	5.68	5.34	12.87	6.17	12.58	3.03	2.61	2.49	2.82	3.29	3.74	17.45	12.37	7.99	17.45	17.45	17.45	17.45	18.87	17.45	15.24	15.24
SPP South - Energy Price - 1H2023	3429	5/21/2032	5/21/2032	14.57	14.57	14.57	14.57	14.57	14.57	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	14.57	14.57
SPP South - Energy Price - 1H2023	3430	5/22/2032	5/22/2032	14.57	14.45	14.42	14.57	14.34	14.49	14.89	3.5	14.52	2.89	14.89	16.6	16.6	16.6	16.6	16.6	18.14	18.14	18.14	18.14	16.6	16.6	14.57	14.57
SPP South - Energy Price - 1H2023	3431	5/23/2032	5/23/2032	5.8	13.4	14.23	14.57	13.4	14.57	16.6	16.56	16.2	16.6	16.6	16.6	16.6	16.6	16.6	15.27	9.16	6.11	16.6	16.6	16.6	17.1	14.57	14.57
SPP South - Energy Price - 1H2023	3432	5/24/2032	5/24/2032	13.18	13.18	13.18	13.18	13.18	13.18	14.11	12.98	12.98	14.49	15.39	15.39	15.39	15.39	17.61	15.39	17.62	17.61	17.61	17.78	17.61	16.36	13.75	13.18
SPP South - Energy Price - 1H2023	3433	5/25/2032	5/25/2032	15.12	15.12	15.12	15.12	15.12	15.12	17.33	17.33	17.33	17.33	17.5	18.57	18.84	18.68	17.33	19.52	18.79	19.79	19.79	19.79	19.79	19.79	16.6	15.36
SPP South - Energy Price - 1H2023	3434	5/26/2032	5/26/2032	16.34	16.64	17.07	16.56	15.85	16.73	18.16	17.81	17.81	17.81	18.46	17.81	17.81	17.81	17.81	17.9	17.81	17.81	17.81	17.82	17.81	17.81	6.81	7.35
SPP South - Energy Price - 1H2023	3435	5/27/2032	5/27/2032	15.7	15.7	2.89	2.63	15.7	15.7	17.82	17.92	17.92	17.9	17.82	17.82	17.92	17.92	17.92	17.92	17.92	17.92	17.92	17.92	17.92	17.92	15.7	15.7
SPP South - Energy Price - 1H2023	3436	5/28/2032	5/28/2032	15.98	15.98	15.98	2.63	15.98	15.98	18.02	17.92	17.82	1.29	17.82	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	15.98	15.98
SPP South - Energy Price - 1H2023	3437	5/29/2032	5/29/2032	15.98	15.98	3.07	15.98	15.98	15.98	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.43	18.2	16.09	16.36
SPP South - Energy Price - 1H2023	3438	5/30/2032	5/30/2032	15.98	15.98	15.98	15.98	16.08	16.25	18.48	18.23	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.63	18.2	19.46	19.61	18.23	19.58	18.2	16.09	15.98
SPP South - Energy Price - 1H2023	3439	5/31/2032	5/31/2032	15.98	15.98	15.98	15.98	15.98	15.98	17.82	17.82	13.5	16.39	18.2	18.16	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.98	18.97	18.2	16.95	16.36
SPP South - Energy Price - 1H2023	3440	6/1/2032	6/1/2032	21.87	21.87	22.2	21.87	22.17	22.2	24.84	24.84	24.84	25.23	25.24	24.84	27.79	26.89	27.32	28.42	28.11	28.7	29.37	29.39	30.4	28.7	24.52	24.52
SPP South - Energy Price - 1H2023	3441	6/2/2032	6/2/2032	24.18	24.18	23.93	23.76	24.06	24.18	26.61	25.11	25.11	25.11	25.11	25.11	27.29	25.11	28.37	28.71	28.37	28.71	28.71	28.71	28.32	26.33	24.18	22.14
SPP South - Energy Price - 1H2023	3442	6/3/2032	6/3/2032	21.31	21.33	21.19	21.02	21.15	21.33	24.39	23.84	23.84	23.84	23.84	23.84	23.84	23.84	24.39	24.39	23.84	24.14	23.84	24.56	25.58	24.39	20.86	20.86
SPP South - Energy Price - 1H2023	3443	6/4/2032	6/4/2032	20.69	20.69	20.69	20.69	20.69	20.69	23.68	23.68	23.68	23.68	24.08	27.12	27.12	27.12	27.12	23.68	27.12	27.12	26.09	27.12	27.12	27.12	23.61	22.56
SPP South - Energy Price - 1H2023	3444	6/5/2032	6/5/2032	20.81	20.69	20.69	20.81	20.99	21.11	20.83	20.86	20.83	20.74	21.75	21.24	22.58	22.58	23.19	23.19	22.58	22.58	23.15	22.58	22.67	22.67	21.59	21.3
SPP South - Energy Price - 1H2023	3445	6/6/2032	6/6/2032	21.31	21.16	22.56	22.56	22.56	22.26	20.83	20.74	20.71	20.71	20.71	20.71	20.71	20.71	20.71	20.71	20.71	21.61	21.89	23.19	23.11	22.61	21.31	22.56
SPP South - Energy Price - 1H2023	3446	6/7/2032	6/7/2032	24.76	23.13	23	22.83	23.12	23.52	27.16	27.2	27.76	27.79	27.79	27.79	27.2	25.62	25.62	25.62	25.62	25.62	25.93	25.62	25.62	26.32	22.67	23.27
SPP South - Energy Price - 1H2023	3447	6/8/2032	6/8/2032	24.91	24.97	24.96	24.63	24.92	24.95	28.32	29.37	29.15	27.54	27.54	27.54	27.54	27.87	31.44	29.7	29.24	27.96	29.26	30.52	29.7	29.7	26.94	24.63
SPP South - Energy Price - 1H2023	3448	6/9/2032	6/9/2032	25.25	8.21	25.25	25.25	25.54	25.66	28.36	28.57	30.57	29.11	29.47	29.51	29.35	30.57	32.13	32.13	30.57	30.57	29.53	30.58	30.43	29.57	27	25.9
SPP South - Energy Price - 1H2023	3449	6/10/2032	6/10/2032	25.63	25.28	25.2	25.26	25.53	25.65	27.75	29.26	29.25	29.54	30.54	30.54	31.54	32.85	33.38	34.47	33.38	31.92	31.92	31.92	31.54	29.95	24.72	24.72
SPP South - Energy Price - 1H2023	3450	6/11/2032	6/11/2032	24.36	24.64	24.32	24.42	24.64	24.8	25.97	26.07	25.65	25.65	25.65	25.65	25.65	26.23	25.65	25.65	25.65	25.65	25.65	29.33	28.6	26.68	24.8	23.49
SPP South - Energy Price - 1H2023	3451	6/12/2032	6/12/2032	22.7	22.7	22.7	22.7	22.7	22.7	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	23.14	22.87	22.72	22.87	22.7
SPP South - Energy Price - 1H2023	3452	6/13/2032	6/13/2032	22.7	22.7	22.7	22.7	22.7	22.7	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	22.72	24.82	24.82	22.7	23.06
SPP South - Energy Price - 1H2023	3453	6/14/2032	6/14/2032	24.81	24.81	24.81	24.81	24.81	24.81	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.72	27.73	28.15	27.72	24.81	24.81
SPP South - Energy Price - 1H2023	3454	6/15/2032	6/15/2032	23.82	23.82	23.82	23.82	23.82	23.82	25.07	23.51	5.66	26.73	26.75	26.75	26.75	26.75	26.75	26.75	26.75	26.75	26.75	26.75	28.75	26.75	26.04	24.42
SPP South - Energy Price - 1H2023	3455	6/16/2032	6/16/2032	23.17	23.1	23.17	23.17	23.17	23.17	25.71	25.71	25.71	25.71	25.71	25.71	27.79	29.39	29.26	28.92	28.1	29.39	29.7	29.76	29.7	29.7	29.13	24.86
SPP South - Energy Price - 1H2023	3456	6/17/2032	6/17/2032	26.33	26.33	24.08	24.08	24.1	24.37	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	30.21	30.84	30.84	30.84	30.84	31.2	30.84	27.06	26.34
SPP South - Energy Price - 1H2023	3457	6/18/2032	6/18/2032	26.85	26.85	25.84	26.68	26.44	26.68	28.24	28.93	29.44	29.48	29.53	30.53	31.35	31.35	31.73	34	33.43	31.73	33.16	33.49	33.16	31.35	27.77	27.6
SPP South - Energy Price - 1H2023	3458	6/19/2032	6/19/2032	27.6	26.85	26.85	26.68	26.44	26.85	25.41	25.09	26.88	26.88	27.62	27.68	27.62	28.88	27.18	26.88	26.88	26.88	27.68	27.62	26.88	24.72	26.85	24.9
SPP South - Energy Price - 1H2023	3459	6/20/2032	6/20/2032	25.77	24.92	24.7	24.55	24.6	24.87	24.68	24.89	24.79	27.05	26.88	26.88	27.62	27.62	27.62	26.88	26.88	26.88	26.88	26.88	26.88	27.01	27.6	26.85
SPP South - Energy Price - 1H2023	3460	6/21/2032	6/21/2032	27.73	25.92	25.34	25.39	25.63	25.75	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	28.24	30.23	29.51	27.73	25.34
SPP South - Energy Price - 1H2023	3461	6/22/2032	6/22/2032	26.03	25.62	25.62	25.62	25.76	26.02	28.63	28.94	29.53	28.52	28.52	28.52	30.03	30.57	31	29.53	28.52	28.52	28.52	28.63	29.53	29.53	27.84	26.22
SPP South - Energy Price - 1H2023	3462	6/23/2032	6/23/2032	26.92	28.58	28.58	28.23	27.98	27.66	28.98	28.98	28.98	28.98	29.33	28.98	28.98	28.98	29.09	28.98	28.98	28.98	28.98	29.15	29.63	29.97	27.02	26.7
SPP South - Energy Price - 1H2023	3463	6/24/2032	6/24/2032	26.78	26.82	26.69	26.82	26.66	26.82	29.25	29.25	29.25	29.25	29.25	29.25	29.25	29.32	29.53	29.25	30.36	29.57	30.36	30.36	30.86	30.57	28.86	28.86
SPP South - Energy Price - 1H2023	3464	6/25/2032	6/25/2032	26.24	27.81	27.81	25.57	27.81	27.81	28.42	28.35	28.31	28.31	29.52	29.53	29.52	29.89	32.3	32.3	29.58	30.95	30.95	30.95	31.37	30.62	27.81	27.81
SPP South - Energy Price - 1H2023	3465	6/26/2032	6/26/2032	27.81	27.81	27.62	27.31	26.82	26.34	26.32	26.42	27.84	27.84	27.84	27.84	28.61	28.62	28.62	28.61	27.84	27.84	27.84	27.84	28.19	27.84	25.47	26.18
SPP South - Energy Price - 1H2023	3466	6/27/2032	6/27/2032	26.12	25.76	25.84	26.36	26.3	26.27	26.32	25.67	26.13	25.43	25.43	25.79	27.84	27.84	28.57	28.03	28.03	28.61	27.84	27.84	27.84	27.84	26.62	25.97
SPP South - Energy Price - 1H2023	3467	6/28/2032	6/28/2032	25.09	24.42	24.35	24.38	24.58	25.25	28.9	30.21	30.78	30.45	30.78	30.78	30.78	30.78	30.78	29.51	30.5	29.45	29.5	29.5	29.46	28.84	24.5	24.93
SPP South - Energy Price - 1H2023	3468	6/29/2032	6/29/2032	24.8	24.93	24.71	24.54	24.74	24.74	29.97	30.2	30.63	31.3	31.3	31.3	34.89	34.72	34.89	34.11	34.89	32.1	32.1	34.89	34.89	34.89	29.04	27.69
SPP South - Energy Price - 1H2023	3469	6/30/2032	6/30/2032	27.92	27.34	26.96	26.96	27.71	27.69	30.48	29.45	29.48	30.21	29.54	33	32.66	34.2	31.46	31.38	31.66	30.54	31.84	31.84	31.84	31.46	27.82	26.09
SPP South - Energy Price - 1H2023	3470	7/1/2032	7/1/2032	33.34	31.35	28.96	28.57	32.43	31.74	35.04	34.78	35.53	35.53	35.53	38.67	39.48	40.42	41.27	41.67	38.09	39.01	41.64	39.87	39.72	40.24	33.61	28.56
SPP South - Energy Price - 1H2023	3471	7/2/2032	7/2/2032	38.02	37.4	37.3	36.83	37.31	37.63	44.8	44.54	51.16	50.56	47.06	49.46	56.09	56.09	56.09	56.09	50.94	58.51	63.87	56.09	53.9	48.17	39.3	40.71
SPP South - Energy Price - 1H2023	3472	7/3/2032	7/3/2032	40.71	37.97	37.21	36.83	37.31	36.78	41.18	41.87	44.3	41.65	40.78	45.89	54.15	53.68	53.28	58.49	52.24	53.44	53.28	44.3	44.3	43.25	38.94	38.72
SPP South - Energy Price - 1H2023	3473	7/4/2032	7/4/2032	38.02	37.6	36.18	36.18	36.12	35.47	37.86	38.52	38.4	40.27	39.69	39.69	40.78	41.87	40.78	40.78	39.69	36.31	39.69	40.24	40.78	40.78	36.18	34.39
SPP South - Energy Price - 1H2023	3474	7/5/2032	7/5/2032	35.21	34.12	35.21	35.21	35.21	35.47	40.52	39.96	37.47	38.68	38.76	42.8	42.8	42.8	42.8	42.8	39.49	40.16	41.61	39.59	41.5	41.5	34.47	35.21
SPP South - Energy Price - 1H2023	3475	7/6/2032	7/6/2032	36.09	35.67	34.63	35.06	37.91	36.17	44.5	44.41	44	46.14	45.57	45.57	47.38	46.14	49.09	49.5	49.09	46.14	51.63	45.57	49.79	49.09	39.3	39.3
SPP South - Energy Price - 1H2023	3476	7/7/2032	7/7/2032	39.3	38.48	37.52	37.52	37.52	38.48	44.92	45.17	45.73	45.73	48.78	47.14	45.73	45.73	43.11	44.99	41.7	45.17	45.73	45.73	45.73	45.73	38.57	38.57
SPP South - Energy Price - 1H2023	3477	7/8/2032	7/8/2032	36.48	35.32	36.48	36.48	37.27	37.49	44.11	44.11	41.58	43.09	43.86	43.92	44.11	44.11	44.63	44.11	44.63	44.63	46.65	47.88	43.62	46.82	44.53	37.49
SPP South - Energy Price - 1H2023	3478	7/9/2032	7/9/2032	37.09	37.09	36.09	36.09	36.09	37.09	40.29	41.54	40.75	43.71	44.22	44.22	46.13	44.22	46.2	46.2	49.3	49.3	46.2	45.61	46.49	45.53	40.71	39.3
SPP South - Energy Price - 1H2023	3479	7/10/2032	7/10/2032	38.43	38.48	37.09	37.09	37.09	36.81	40.68	40.68	39.64	40.68	39.78	40.68	40.68	40.12	42.48	42.7	41.81	43.91	44.3	45.89	44.3	44.3	38.43	37.09
SPP South - Energy Price - 1H2023	3480	7/11/2032	7/11/2032	37.09	36.09	36.09	36.89	36.92	36.78	40.04	39.52	40.5	39.51	40.5	40.39	40.68	42	45.38	44.3	49.66	49.66	49.66	55.53	49.66	49.66	39.3	39.3
SPP South - Energy Price - 1H2023	3481	7/12/2032	7/12/2032	38.22	38.12	38.02	37.22	37.9	38.22	45.37	44.82	44.83	48.29	50.7	50.7	50.7	45.37	50.7	50.7	45.37	50.7	50.7	50.7	45.37	45.61	39.3	39.3
SPP South - Energy Price - 1H2023	3482	7/13/2032	7/13/2032	38.76	39.3	39	38.62	37.71	39.3	47.04	50.08	46.07	48.95	54.28	53.39	54.16	53.93	59.76	67.45	60.22	60.22	55.34	55.74	54.53	54.65	41.19	39.73
SPP South - Energy Price - 1H2023	3483	7/14/2032	7/14/2032	39.41	39.1	39.1	39.1	39.1	39.1	45.69	45.69	43.77	45.55	42.46	46.27	47.48	49.36	47.84	51.79	51.79	51.82	54.44	54.58	46.27	46.27	39.1	39.11
SPP South - Energy Price - 1H2023	3484	7/15/2032	7/15/2032	39.3	39.3	39.3	39.3	39.3	39.3	43.11	44.8	41.21	43.37	45.35	46.95	46.95	46.95	46.15	46.62	43.19	43.19	47.61	52.01	46.99	50.28	40.41	39.75
SPP South - Energy Price - 1H2023	3485	7/16/2032	7/16/2032	39.3	38.13	38.13	38.13	38.13	38.1	43.19	45.08	43.86	44.35	45.79	45.79	43.13	45.79	45.79	45.79	45.79	45.79	46.37	47.54	47.65	47.05	39.44	39.2

SPP South - Energy Price - 1H2023	3486	7/17/2032	7/17/2032	39.2	39.2	38.13	38.13	38.13	38.1	42.11	41.48	42.98	42.99	42.98	41.48	42.99	44.19	44.19	44.19	44.3	44.19	46.25	43.2	43.66	44.14	39.2	38.13
SPP South - Energy Price - 1H2023	3487	7/18/2032	7/18/2032	38.13	34.83	34.83	34.83	38.13	36.38	39.27	41.47	40.97	39.69	40.08	42.99	42.99	42.87	39.54	44.19	39.54	39.54	42.99	44.19	44.3	44.19	39.2	38.79
SPP South - Energy Price - 1H2023	3488	7/19/2032	7/19/2032	38.65	36.74	36.64	37.66	37.41	36.78	42.27	43.5	42.91	43.35	44.8	44.8	46.95	45.98	50.01	50.01	50.01	50.44	51.96	51.07	52.51	50.01	41.59	40.01
SPP South - Energy Price - 1H2023	3489	7/20/2032	7/20/2032	38.85	39.3	37.96	37.96	38.06	37.96	44.57	44.57	44.57	44.57	41.98	45.11	45.11	46.04	48.34	45.17	50.38	44.57	52.33	48.34	46.53	50.24	40.71	37.89
SPP South - Energy Price - 1H2023	3490	7/21/2032	7/21/2032	37.2	36.4	36.4	37.2	37.2	36.4	39.54	39.14	41.3	38.94	41.56	44.03	44.03	40.5	44.03	43.97	44.55	44.03	49.7	49.7	44.03	44.55	37.41	37.41
SPP South - Energy Price - 1H2023	3491	7/22/2032	7/22/2032	35.66	36.65	35.66	36.65	36.65	36.78	42.64	42.42	43.27	43.27	45.71	50.18	48.44	50.58	52.86	50	49.69	50.47	50.85	51.11	51.22	51.72	43.52	39.3
SPP South - Energy Price - 1H2023	3492	7/23/2032	7/23/2032	37.96	37.31	37.01	36.28	37.31	36.78	42.9	43.39	45.23	52.55	51.98	55.87	55.87	50.01	56.23	56.23	56.23	56.23	57.04	56.23	55.32	51.26	44.38	43.06
SPP South - Energy Price - 1H2023	3493	7/24/2032	7/24/2032	39.41	39.3	38.88	39.3	39.18	39.3	42.55	42.95	41.53	43.72	43.88	44.42	47.64	44.3	47.64	46.97	47.64	44.42	53.82	54.27	54.4	46.79	39.3	37.7
SPP South - Energy Price - 1H2023	3494	7/25/2032	7/25/2032	37.73	36.28	35.3	35.3	36.21	35.3	39.8	39.8	37.47	39.8	39.8	40.9	41.55	44.04	45.88	45.56	45.1	44.3	50.18	44.3	45.89	45.56	39.3	38.8
SPP South - Energy Price - 1H2023	3495	7/26/2032	7/26/2032	36.67	35.17	36.14	36.59	36.19	36.59	42.77	40.95	40.95	41.94	42.77	43.98	50.18	46.2	48.13	46.16	50.64	54.43	56.46	54.51	50.64	48.13	41.23	37.56
SPP South - Energy Price - 1H2023	3496	7/27/2032	7/27/2032	36.42	36.42	36.07	36.42	35.92	35.45	41.46	42.1	41.61	43.54	43.54	43.05	50.07	50.07	50.05	48.65	49.39	49.82	55.4	50.25	50.4	50.61	39.3	39.08
SPP South - Energy Price - 1H2023	3497	7/28/2032	7/28/2032	37.35	36.73	36.38	34.92	35.8	35.8	42.84	43.11	43.91	43.92	45.76	48.93	48.93	50.41	50.45	49.07	49.85	50.18	50.28	50.28	50.28	43.91	40.49	38.07
SPP South - Energy Price - 1H2023	3498	7/29/2032	7/29/2032	36.17	37.06	37.18	37.18	37.28	38.03	44.32	43.79	42.93	44.31	44.31	50.99	51.41	56.78	51.02	49.59	50.43	51.41	52.37	52.15	51.41	49.41	38.26	38.26
SPP South - Energy Price - 1H2023	3499	7/30/2032	7/30/2032	36.85	37.99	36.44	37.57	38.27	39.3	43.47	42.98	43.47	43.98	43.98	43.47	43.98	49	50.58	49.17	49	47.97	49	49	44.78	43.47	36.85	35.44
SPP South - Energy Price - 1H2023	3500	7/31/2032	7/31/2032	35.76	34.59	32.79	34.32	35.47	32.79	39.3	40.42	41.54	41.54	44.3	44.3	44.36	44.82	44.75	47.57	44.3	41.54	45.89	41.54	41.26	41.59	35.86	35.86
SPP South - Energy Price - 1H2023	3501	8/1/2032	8/1/2032	34.79	36.23	36.27	35.21	37.3	36.42	32.14	32.74	32.1	32.1	32.74	35.1	36.07	36.07	38.56	36.07	37.59	38.56	39.68	43.05	42.84	37.21	38.06	37.47
SPP South - Energy Price - 1H2023	3502	8/2/2032	8/2/2032	34.16	34.16	34.16	34.16	34.16	35.09	40.68	40.68	40.68	40.68	41.09	41.78	41.09	43.26	43.97	43.91	45.84	46.18	46.05	46.74	46.05	46.05	39.13	40.19
SPP South - Energy Price - 1H2023	3503	8/3/2032	8/3/2032	40.19	40.19	40.19	39.1	39.1	40.98	45.75	44.29	44.1	44.59	45.56	45.56	46.12	51.57	51.93	55.21	54.29	57.02	58.26	54.29	53.77	47.84	40.98	40.98
SPP South - Energy Price - 1H2023	3504	8/4/2032	8/4/2032	40.92	36.36	37.85	39.81	39.81	39.81	44.32	44.71	41.9	43.65	45.5	46.26	46.26	46.26	46.26	46.26	46.26	46.84	46.84	48.94	46.63	46.26	40.92	39.81
SPP South - Energy Price - 1H2023	3505	8/5/2032	8/5/2032	40.28	40.28	36.79	37.54	40.28	39.1	44.72	43.47	46.24	44.1	46.73	46.48	46.73	47.33	43.05	47.33	48.99	48.25	51.24	47.33	46.73	46.73	40.28	40.28
SPP South - Energy Price - 1H2023	3506	8/6/2032	8/6/2032	40.05	40.05	40.05	40.04	40.05	40.98	43.42	42.07	42.67	41.76	42.95	43.34	46.49	46.63	46.63	47.09	46.49	47.09	47.29	48.41	46.63	46.49	40.98	40.05
SPP South - Energy Price - 1H2023	3507	8/7/2032	8/7/2032	40.04	40.05	40.05	39.91	39.4	38.89	36.48	35.58	35.75	36.4	36.02	36.4	38.4	38.56	38.56	38.56	38.56	38.74	37.69	38.56	38.74	38.56	41.17	40.98
SPP South - Energy Price - 1H2023	3508	8/8/2032	8/8/2032	40.55	40.05	40.98	40.05	40.04	40.04	37.69	36.4	36.4	37.69	37.69	37.69	38.4	38.74	38.56	38.74	38.74	40.01	38.93	40.2	39.75	38.56	40.98	40.98
SPP South - Energy Price - 1H2023	3509	8/9/2032	8/9/2032	40.42	40.42	39.3	40.26	40.42	40.98	44.93	45.44	45.24	46.87	46.87	47.47	49.36	47.47	54.86	53.42	54.24	54.93	53.28	55.15	52.35	47.47	40.98	40.71
SPP South - Energy Price - 1H2023	3510	8/10/2032	8/10/2032	40.72	40.38	40.02	39.61	40.48	40.71	46.07	46.07	44.61	44.7	50	54.17	53.89	54.35	54.4	58.38	53.58	53.35	53.8	54.34	54.6	50.96	40.72	40.72
SPP South - Energy Price - 1H2023	3511	8/11/2032	8/11/2032	34.44	34.44	34.44	34.44	34.44	34.44	39.24	39.1	37.28	37.8	39.67	40.44	41.64	41.81	45.6	43.65	44.84	44.84	46.02	46.46	44.84	43.07	34.67	34.44
SPP South - Energy Price - 1H2023	3512	8/12/2032	8/12/2032	31.62	31.4	31.09	31.09	31.62	32.19	36.85	35.99	35.17	36.85	36.85	37.14	38.82	40.87	41.64	41.64	40.66	41.64	41.64	42.35	41.65	40.66	36.4	37.39
SPP South - Energy Price - 1H2023	3513	8/13/2032	8/13/2032	32.22	31.4	30.92	30.72	30.59	32.91	36.46	36.65	36.37	36.65	36.65	37.53	40.07	40.5	40.41	40.93	40.07	41.62	42.13	41.78	40.72	40.88	36.03	36.03
SPP South - Energy Price - 1H2023	3514	8/14/2032	8/14/2032	32.39	32.71	31.34	31.84	32.03	32.19	31.29	31.91	33.6	35.17	37.53	38.56	38.56	39.95	38.62	38.85	38.56	38.56	37.72	37.87	36.54	34.81	35.76	34.2
SPP South - Energy Price - 1H2023	3515	8/15/2032	8/15/2032	31.75	32.06	31.34	31.55	31.41	31.33	30.52	30.86	28.8	30.04	30.32	33.91	31.09	37.22	34.57	34.37	33.28	33.91	36.8	38.56	37.62	37.89	37.31	36.03
SPP South - Energy Price - 1H2023	3516	8/16/2032	8/16/2032	38.26	37.61	37.54	37.54	37.03	37.54	43.05	42.32	41.51	41.98	43.02	46.68	47.39	44.1	44.98	47.39	47.39	43.6	49.42	49.97	50.24	47.39	38.63	37.54
SPP South - Energy Price - 1H2023	3517	8/17/2032	8/17/2032	41.04	40.66	40.3	39.92	39.92	40.98	45.64	44.82	43.39	46.37	46.37	46.96	50.41	50.46	49.61	53.24	51.32	52.59	54.36	54.88	52.59	51.13	40.98	40.98
SPP South - Energy Price - 1H2023	3518	8/18/2032	8/18/2032	41.01	41.01	41.01	40.98	40.98	41.01	47.76	46.12	43.52	44.99	47.14	47.29	48.07	48.07	53.93	53.93	52.91	52.73	57.03	57.79	53.93	52.36	42.45	41.89
SPP South - Energy Price - 1H2023	3519	8/19/2032	8/19/2032	40.98	40.98	40.98	40.98	40.98	41.79	47.7	46.19	45.22	47.31	51.46	53.49	53.49	55.82	55.59	55.89	57.03	57.03	70.11	67.74	57.78	56.81	56.16	50.93
SPP South - Energy Price - 1H2023	3520	8/20/2032	8/20/2032	42.5	42.09	42.45	40.98	42.3	42.59	50.15	46.51	46.32	45.97	54.41	53.68	53.48	53.9	60.78	61.28	63.8	63.72	66.36	62.31	57	54.58	51.78	47.77
SPP South - Energy Price - 1H2023	3521	8/21/2032	8/21/2032	41.28	40.39	40.39	40.39	40.39	40.39	38.01	38.01	37.56	38.01	40.74	44.88	49.49	49.89	52.35	56.3	57.2	63.42	63.42	54.19	52.92	50.56	48.05	43.96
SPP South - Energy Price - 1H2023	3522	8/22/2032	8/22/2032	40.98	40.39	40.39	40.33	39.3	40.39	38.01	36.98	38.01	38.56	38.56	39.44	38.56	39.95	41.56	45.01	46.34	49.6	49.47	47.39	46.56	41.56	40.6	40.98
SPP South - Energy Price - 1H2023	3523	8/23/2032	8/23/2032	40.6	40.6	40.6	40.6	40.6	40.6	44.28	45.95	45.95	45.95	46.53	45.95	48.61	46.53	53.99	52.06	53.37	53.68	53.59	54.16	52.06	47.93	40.98	40.98
SPP South - Energy Price - 1H2023	3524	8/24/2032	8/24/2032	41.19	40.98	40.98	37.61	37.67	40.98	46.65	46.24	44.25	47.63	47.63	47.63	48.26	47.63	56.19	49.93	54.12	54.16	56.17	56.73	48.26	48.26	41.19	40.98
SPP South - Energy Price - 1H2023	3525	8/25/2032	8/25/2032	40.98	40.98	40.98	40.98	40.55	40.98	44.25	44.8	43.34	47.76	47.81	52.42	56.17	61.36	64.31	66.61	70.89	64.37	64.29	63.45	61.91	57.26	50.62	42.5
SPP South - Energy Price - 1H2023	3526	8/26/2032	8/26/2032	43.04	41.85	41.85	41.85	41.85	41.85	49.09	48.28	48.28	48.28	48.28	52.97	54.98	57.28	57.42	56.11	56.93	57.29	57.28	58.7	57.28	54.98	43.04	42.61
SPP South - Energy Price - 1H2023	3527	8/27/2032	8/27/2032	41.56	42.7	41.67	42.45	43.17	43.19	52	54.62	54.62	55.69	57.85	58	56.19	54.75	56.9	59.17	58.67	58	58.04	54.98	54.62	54.38	42.73	42.73
SPP South - Energy Price - 1H2023	3528	8/28/2032	8/28/2032	42.23	41.56	41.67	41.56	41.56	41.76	39.11	39.11	39.11	39.11	39.11	47.64	49.71	49.71	49.71	49.69	50.38	49.71	52.72	51.87	47.73	40.7	42.01	42.22
SPP South - Energy Price - 1H2023	3529	8/29/2032	8/29/2032	41.56	41.56	40.98	40.98	40.98	41.56	39.11	39.11	38.56	39.11	39.11	39.94	45.77	47.91	47.91	47.91	44.08	44.5	46.77	47.91	47.91	47.91	42.01	41.56
SPP South - Energy Price - 1H2023	3530	8/30/2032	8/30/2032	38.13	38.1	38.2	37.16	36.6	38.3	41.66	39.75	38.81	39.75	41.71	41.73	40.86	43.19	42.26	42.96	42.66	43.97	47.57	49.59	46.62	45.66	41.36	40.98
SPP South - Energy Price - 1H2023	3531	8/31/2032	8/31/2032	41.32	41.79	41.42	41.36	40.98	42.67	48.36	45.51	44.49	45.5	45.99	46.07	46.07	50.4	50.11	49.86	47.74	50.84	51.5	50.8	51.5	50.57	42.45	41.04
SPP South - Energy Price - 1H2023	3532	9/1/2032	9/1/2032	32.25	32.25	31.43	32.2	32.2	32.2	38.38	37.4	34.79	34.8	33.65	33.93	33.8	33.65	33.65	33.65	33.65	42.05	38.39	42.7	42.31	38.38	32.2	30.89
SPP South - Energy Price - 1H2023	3533	9/2/2032	9/2/2032	31.17	31.17	31.41	31.17	31.33	32.2	38.66	34.79	33.46	34.58	34.52	33.46	33.46	33.46	34.78	34.58	38.66	38.66	43.44	42.63	38.66	40.43	33.01	32.04
SPP South - Energy Price - 1H2023	3534	9/3/2032	9/3/2032	32.04	31.73	31.73	31.73	32.19	32.2	39.2	37.86	37.09	37.86	37.86	37.86	37.86	42.85	42.88	42.88	42.88	42.88	42.88	42.35	41.11	39.73	30.48	30.87
SPP South - Energy Price - 1H2023	3535	9/4/2032	9/4/2032	30.87	31.73	30.97	30.87	29.78	30.87	44.91	44.91	44.91	45.92	47.2	47.2	47.2	47.89	47.89	47.88	47.89	47.2	48.82	54.7	48.71	49.4	30.87	29.13
SPP South - Energy Price - 1H2023	3536	9/5/2032	9/5/2032	29.14	28.87	29.65	29.1	28.76	28.57	43.32	43.05	43.55	41.95	45.91	45.91	45.92	47.2	47.89	47.89	47.2	57.76	47.89	56.14	56.14	47.2	30.87	30.87
SPP South - Energy Price - 1H2023	3537	9/6/2032	9/6/2032	29.14	30.87	30.87	29.25	30.87	31.73	37.05	36.29	33.9	35.41	33.9	36.29	36.29	33.38	36.29	35.81	33.18	35.75	42.18	38.33	36.66	35.24	30.87	29.13
SPP South - Energy Price - 1H2023	3538	9/7/2032	9/7/2032	29.88	29.94	30.05	29.91	29.67	30.32	35.23	34.7	33.9	33.95	33.95	33.95	33.95	33.95	33.95	37.08	38.73	35.04	39.22	38.73	38.73	34.54	30.44	28.95
SPP South - Energy Price - 1H2023	3539	9/8/2032	9/8/2032	29.31	30.27	30.27	30.27	29.58	32.1	38.39	39.14	38.55	39.65	39.65	44.48	44.48	44.48	43.9	44.48	44.47	44.41	44.48	45.74	44.48	39.65	33.18	33.18
SPP South - Energy Price - 1H2023	3540	9/9/2032	9/9/2032	32.39	31.55	31.55	31.55	32.2	32.2	39.06	39.06	37.92	37.23	36.24	35.18	33.81	34.72	33.81	33.81	33.81	38.57	36.56	34.8	38.57	33.81	30.48	30.82
SPP South - Energy Price - 1H2023	3541	9/10/2032	9/10/2032	29.59	28.8	29.59	29.11	28.87	30.32	34.5	33.12	33.12	33.12	33.12	30.47	30.47	30.47	30.47	30.47	33.09	33.12	33.12	33.12	33.12	33.12	28.15	28.15
SPP South - Energy Price - 1H2023	3542	9/11/2032	9/11/2032	28.15	28.15	28.15	28.15	28.33	28.35	42.77	41.86	41.86	41.86	41.86	41.86	41.86	41.86	41.86	41.86	42.35	45.79	46.84	46.44	45.82	44.43	28.61	28.15
SPP South - Energy Price - 1H2023	3543	9/12/2032	9/12/2032	28.14	28.14	28.15	28.15	28.15	28.15	41.86	41.86	41.86	41.86	41.86	41.86	41.86	45.82	41.86	45.82	42.15	45.82	46.49	46.5	44.71	44.68	28.76	29.07
SPP South - Energy Price - 1H2023	3544	9/13/2032	9/13/2032	28.13	28.47	28.82	28.81	28.86	30.47	36.63	36.81	36.61	34.75	34.64	32.81	34.58	37.44	37.44	37.9	38	38.11	41.13	39.34	38.42	37.44	30.47	30.47
SPP South - Energy Price - 1H2023	3545	9/14/2032	9/14/2032	29.89	29.89	29.89	29.89	29.89	29.9	36.08	36.29	33.93	32.27	32.27	32.72	32.72	33.99	35.08	32.27	33.9	36.85	36.85	35.04	33.5	32.27	27.33	27.33
SPP South - Energy Price - 1H2023	3546	9/15/2032	9/15/2032	27.44	27.44	27.44	27.44	27.44	27.44	32.39	32.39	32.39	32.39	32.39	32.39	23.83	32.38	32.39	32.39	32.39	32.72	37.41	34.68	33.74	32.39	27.9	28.36
SPP South - Energy Price - 1H2023	3547	9/16/2032	9/16/2032	28.98	29.09	29.5	29.01	29.09	28.41	33.02	33.02	11.66	32.72	33.02	33.02	33.02	33.02	34.76	34.76	36.76	42.28	43.21	42.65	38.14	38.14	32.2	30.92
SPP South - Energy Price - 1H2023	3548	9/17/2032	9/17/2032	30.89	30.89	29.99	30.66	30.79	30.79	36.91	36.31	35.25	35.03	34.25	33.45	34.04	36.11	35.33	34.47	36.08	37.35	37.35	36.91	34.74	34.27	27.85	28.31
SPP South - Energy Price - 1H2023	3549	9/18/2032	9/18/2032	27.39	27.39	27.39	27.39	27.39	27.39	40.73	10.25	8.96	8.77	5.83	10.25	12.81	14.51	16.63	18.42	19.1	40.73	40.73	40.73	40.73	40.73	27.39	27.39
SPP South - Energy Price - 1H2023	3550	9/19/2032	9/19/2032	27.39	27.39	27.39	27.38	27.39	27.38	40.73	10.25	8.96	1.81	9.53	10.48	12.81	14.51	16.63	18.42	23.27	40.73	40.73	40.73	40.73	40.73	27.38	27.38
SPP South - Energy Price - 1H2023	3551	9/20/2032	9/20/2032	23.44	23.44	23.44	23.44	23.44	23.44	28.25	28.25	28.25	28.5	29.94	28.25	28.25	32.34	32.64	32.64	32.64	34.43	35.36	35.07	32.64	32.34	26.25	26.25
SPP South - Energy Price - 1H2023	3552	9/21/2032	9/21/2032	28.13	28.43	28.04	28.43	28.76	28.9	35.01	34.63	34.59	34.86	35.01	35.39	35.81	38.53	37.84	38.53	38.53	38.53	39.22	39.3	38.31	35.39	30.28	28.46
SPP South - Energy Price - 1H2023	3553	9/22/2032	9/22/2032	28.07	26.57	27.46	27.29	28.26	28.84	34.87	34.59	31.64	34.38	32.72	34.95	34.95	37.69	35.92	37.48	37.34	38.36	39.13	39.22	37.69	34.36	28.84	27.25
SPP South - Energy Price - 1H2023	3554	9/23/2032	9/23/2032	29	28.52	28.91	29.68	29.77	30.32	35.96	34.5	32.71	32.71	33.98	33.28	32.72	34.71	34.54	35.89	34.67	40.88	41.45	41.33	37.16	36.72	29.86	29.77
SPP South - Energy Price - 1H2023	3555	9/24/2032	9/24/2032	27.95	27.49	27.95	27.73	27.95	27.95	34.62	33.16	31.26	30.71	30.46	30.46	30.46	30.46	30.46	30.46	30.46	34.62	34.82	32.87	30.46	30.46	25.58	25.58
SPP South - Energy Price - 1H2023	3556	9/25/2032	9/25/2032	25.58	25.58	25.58	25.58	25.58	25.58	38.05	10.25	8.96	8.3	9.53	9.53	2.4	14.51	16.63	18.42	19.1	38.05	38.05	38.05	38.05	38.05	22.83	17.2
SPP South - Energy Price - 1H2023	3557	9/26/2032	9/26/2032	12.41	11.51	11.17	10.66	10.87	9.96	14.16	2.99	2.74	2.5	0	0	0	4.93	4.14	4.46	4.14	38.05	38.05	38.05	21.16	38.05	12.47	12.03
SPP South - Energy Price - 1H2023	3558	9/27/2032	9/27/2032	11.79	11.51	11.17	10.66	10.25	10.66	12.89	10.83	7.06	7.18	7.8	10.83	16.55	25.06	28.72	28.72	28.72	29.73	32.72	32.72	31.91	30.42	24.41	23.9
SPP South - Energy Price - 1H2023	3559	9/28/2032	9/28/2032	27.26	27.26	27.26	27.26	27.26	27.26	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	33.57	36.77	35.12	35.21	33.9	29.1	28.74
SPP South - Energy Price - 1H2023	3560	9/29/2032	9/29/2032	27.54	27.4	27.4	27.4	27.4	29.35	34.27	34.47	34.72	34.72	34.47	33.07	33.52	34.17	33.56	34.47	34.73	35.98	36.21	35.45	35.26	34.04	29.24	27.4
SPP South - Energy Price - 1H2023	3561	9/30/2032	9/30/2032	27.96	27.61	27.61	30.21	30.21	30.21	34.38	34.1	32.96	32.57	32.57	32.57	32.57	32.57	32.57	32.57	32.57	33.58	33.37	32.94	32.57	32.57	27.61	27.61
SPP South - Energy Price - 1H2023	3562	10/1/2032	10/1/2032	16.03	16.03	16.03	16.03	16.03	16.03	26.45	26.45	26.45	26.45	26.45	26.45	25.86	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	26.45	16.03	16.03
SPP South - Energy Price - 1H2023	3563	10/2/2032	10/2/2032	16.03	16.03	16.03	16.03	16.03	16.03	30.32	27.48	7.6	1.83	0	1.83	1.83	1.83	1.83	3.28	13.67	13.19	30.32	20.49	11.8	13.14	7.2	6.95
SPP South - Energy Price - 1H2023	3564	10/3/2032	10/3/2032	6.82	6.65	7.1	7.23	16.03	16.03	30.32	8.05	7.6	3.62	3.62	2.14	2.73	3.62	3.04	9.6	30.32	31.4	33.74	32.23	31.47	30.32	16.03	16.03
SPP South - Energy Price - 1H2023	3565	10/4/2032	10/4/2032	15.81	15.31	15.31	15.31	15.31	15.31	27.25	26.78	26.78	26.78	26.78	26.78	26.78	26.78	26.78	26.78	27.76	29.76	30.56	29.76	28.93	27.25	15.36	15.31
SPP South - Energy Price - 1H2023	3566	10/5/2032	10/5/2032	15.25	15.25	15.23	15.23	15.25	15.25	26.78	25.94	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	14.67	14.67
SPP South - Energy Price - 1H2023	3567	10/6/2032	10/6/2032	14.43	14.43	14.43	14.43	14.43	14.43	25.48	25.48	25.48	5.87	7.43	7.1	21.6	8.78	21.59	25.48	25.48	25.48	25.48	25.48	25.48	26.76	16.02	14.43
SPP South - Energy Price - 1H2023	3568	10/7/2032	10/7/2032	14.83	14.83	6.62	6.55	6.28	14.83	26.07	9.82	1.53	1.39	1.35	1.63	2.07	2.52	2.32	9.17	26.07	26.07	26.08	26.08	26.1	26.08	14.83	14.83

SPP South - Energy Price - 1H2023	3569	10/8/2032	10/8/2032	14.9	14.9	14.9	14.9	14.9	16.56	27.12	26.18	26.18	26.18	26.18	26.18	26.18	26.18	26.18	26.18	26.18	27.12	28.34	28.89	28.3	26.76	16.56	16.56
SPP South - Energy Price - 1H2023	3570	10/9/2032	10/9/2032	16.56	16.56	15.98	16.56	16.56	16.96	32.86	32.18	31.32	31.32	31.32	32.18	31.32	31.32	28.81	28.18	31.32	31.32	33.66	31.32	31.32	30	15.96	14.9
SPP South - Energy Price - 1H2023	3571	10/10/2032	10/10/2032	15.55	14.9	16.22	16.56	16.56	16.56	28.18	28.18	30.63	29.19	28.18	28.18	20.26	28.18	28.18	28.18	28.18	28.18	30.63	28.18	28.18	28.18	14.9	14.9
SPP South - Energy Price - 1H2023	3572	10/11/2032	10/11/2032	15.38	15.32	15.16	14.92	15.09	16.18	28.52	28.15	28.15	27.93	26.84	25.69	25.69	25.69	25.69	26.76	27.93	28.52	28.83	28.52	27.63	25.7	16.18	16.18
SPP South - Energy Price - 1H2023	3573	10/12/2032	10/12/2032	16.66	15.74	16.66	16.66	16.66	17.87	30.89	29.23	29.23	28.41	27.72	27.72	26.31	26.31	26.31	26.31	26.31	26.76	28.61	26.77	26.76	26.31	15.41	14.99
SPP South - Energy Price - 1H2023	3574	10/13/2032	10/13/2032	14.72	14.72	15.31	14.72	15.25	16.36	27.28	27.36	27.6	28.32	26.76	27.72	26.06	26.76	26.76	26.76	26.76	28.32	29.1	29.1	28.99	28.32	16.36	16.36
SPP South - Energy Price - 1H2023	3575	10/14/2032	10/14/2032	16.4	16.48	16.4	16.85	16.85	16.85	28.85	28.85	26.76	25.98	25.98	11.32	25.98	11	25.98	25.98	25.98	28.85	31.71	31.33	31.31	28.85	16.4	15.69
SPP South - Energy Price - 1H2023	3576	10/15/2032	10/15/2032	15.94	15.94	15.93	15.69	16.11	16.37	28.46	28.16	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	26.76	28.16	30.31	28.46	28.16	25.38	15.94	14.35
SPP South - Energy Price - 1H2023	3577	10/16/2032	10/16/2032	14.35	15.1	14.35	14.35	15.54	15.94	30.14	27.15	27.15	14.51	27.15	27.15	27.15	27.15	27.15	27.15	30.14	30.14	30.97	30.14	30.14	30.14	14.35	14.35
SPP South - Energy Price - 1H2023	3578	10/17/2032	10/17/2032	15.07	14.82	14.86	14.7	14.88	15.1	30.14	29.51	21.33	10.89	8.39	27.15	24.98	14.06	23.51	27.15	27.15	30.14	30.84	30.74	29.16	30.14	15.35	15.94
SPP South - Energy Price - 1H2023	3579	10/18/2032	10/18/2032	16.47	16.47	16.47	16.47	16.92	16.92	29.26	28.94	26.76	26.76	27.72	26.76	26.76	26.15	28.94	26.76	28.94	31.36	32.12	29.26	28.94	28.94	16.8	16.47
SPP South - Energy Price - 1H2023	3580	10/19/2032	10/19/2032	16.8	16.8	16.8	16.8	16.8	16.8	29.37	26.72	26.49	26.49	26.49	26.49	26.49	26.49	26.49	26.49	26.49	28.41	29.77	29.77	27.53	26.49	16.18	15.11
SPP South - Energy Price - 1H2023	3581	10/20/2032	10/20/2032	15.22	15.22	15.22	15.22	15.22	15.96	27.68	26.65	26.65	26.65	26.65	24.94	26.65	26.65	25.81	26.65	26.65	26.65	26.65	26.65	26.65	26.65	10.45	11.36
SPP South - Energy Price - 1H2023	3582	10/21/2032	10/21/2032	8.92	8.72	15.53	15.53	15.53	17.27	28.11	27.58	27.1	27.1	26.76	26.76	27.1	27.1	27.1	27.1	27.1	27.57	27.1	27.1	27.1	27.1	15.53	15.53
SPP South - Energy Price - 1H2023	3583	10/22/2032	10/22/2032	15.35	15.35	15.35	15.35	15.35	15.35	27.57	26.84	26.84	26.84	26.84	26.84	26.76	26.84	26.84	25.97	26.84	26.84	26.84	26.84	27.72	26.84	17.07	17.07
SPP South - Energy Price - 1H2023	3584	10/23/2032	10/23/2032	17.07	17.07	15.7	17.07	15.35	17.07	29.03	32.28	29.03	11.28	29.03	29.03	29.03	17.94	19.27	18.29	32.28	33.17	33.17	32.28	32.28	33.17	17.07	17.07
SPP South - Energy Price - 1H2023	3585	10/24/2032	10/24/2032	15.7	17.07	15.94	15.7	15.87	16.09	29.97	29.03	29.03	1.83	1.78	2.14	1.97	0	0	3.28	29.03	32.28	33.18	33.17	32.28	32.28	17.07	17.07
SPP South - Energy Price - 1H2023	3586	10/25/2032	10/25/2032	15.41	15.41	15.41	15.41	15.41	15.41	26.54	27.4	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	27.4	29.93	31.15	29.93	28.38	27.4	15.83	15.41
SPP South - Energy Price - 1H2023	3587	10/26/2032	10/26/2032	15.83	15.83	15.83	15.83	15.83	15.83	26.16	26.16	5.78	5.87	5.87	5.87	5.87	2.75	5.87	6.11	26.16	26.16	26.16	26.16	26.16	26.16	7.2	6.95
SPP South - Energy Price - 1H2023	3588	10/27/2032	10/27/2032	5.27	5.36	5.14	5.33	5.81	15.61	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.84	25.87	25.84	25.84	26.27	27.37	25.84	25.84	25.84	15.61	15.61
SPP South - Energy Price - 1H2023	3589	10/28/2032	10/28/2032	15.02	15.02	15.02	15.02	15.02	15.02	25.27	25.48	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	15.02	15.02
SPP South - Energy Price - 1H2023	3590	10/29/2032	10/29/2032	14.39	8.27	14.39	14.39	14.39	14.39	24.05	25.46	24.85	26.76	26.76	26.76	24.62	24.62	26.76	26.76	26.76	28.22	28.35	28.22	25.31	24.15	14.78	14.39
SPP South - Energy Price - 1H2023	3591	10/30/2032	10/30/2032	14.67	14.48	14.39	14.41	14.39	14.39	27.87	27.89	27.64	27.95	27.53	27.28	27.22	27.22	27.22	27.22	27.22	30.07	30.22	29.75	28.73	27.22	14.39	14.39
SPP South - Energy Price - 1H2023	3592	10/31/2032	10/31/2032	14.39	14.39	14.39	14.39	14.39	14.39	27.22	27.22	3.17	3.17	3.81	1.64	1.79	1.59	2.46	1.56	7.61	27.22	27.22	27.22	27.22	27.22	14.39	14.39
SPP South - Energy Price - 1H2023	3593	11/1/2032	11/1/2032	19.12	19.12	19.12	19.12	19.12	21.8	31.16	29.72	29.58	28.66	29.58	29.58	29.58	29.6	29.72	29.72	30.79	32.52	32.52	31.39	31.16	31.16	24.31	25.2
SPP South - Energy Price - 1H2023	3594	11/2/2032	11/2/2032	24.31	24.31	24.31	24.38	22.66	24.32	31.34	31.4	29.74	31.34	30.79	30.29	30.29	30.7	29.74	29.74	31.34	37.71	33.18	32.4	31.51	37.71	25.2	25.2
SPP South - Energy Price - 1H2023	3595	11/3/2032	11/3/2032	24.01	24.01	23.11	23.65	23.7	24.45	31.08	30.77	30.77	35.59	29.72	29.96	29.62	29.62	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	18.04	18.04
SPP South - Energy Price - 1H2023	3596	11/4/2032	11/4/2032	19.03	19.03	19.03	19.03	19.03	19.03	29.46	29.46	29.46	29.46	27.4	27.1	21.34	27.1	27.97	27.1	29.46	31.32	32.71	37.31	31.4	31.44	25.69	25.2
SPP South - Energy Price - 1H2023	3597	11/5/2032	11/5/2032	25.2	25.2	23.81	24.5	24.27	24.41	31.65	31.52	29.89	25.76	16.19	16.26	16.36	16.21	5.96	5.84	29.72	29.89	29.89	29.89	29.89	29.89	19.38	15.39
SPP South - Energy Price - 1H2023	3598	11/6/2032	11/6/2032	19.38	19.38	19.38	19.38	19.38	19.38	33.81	33.81	10.99	3.96	8.65	8.12	8.12	8.72	8.83	8.65	36.92	38.57	40.42	38.57	34.43	33.82	19.38	19.38
SPP South - Energy Price - 1H2023	3599	11/7/2032	11/7/2032	19.38	19.38	19.38	19.38	19.38	19.38	33.82	33.82	33.81	3.96	4.76	2.05	2.23	1.99	3.08	1.95	33.81	33.81	33.81	33.81	33.81	33.11	19.38	7.06
SPP South - Energy Price - 1H2023	3600	11/8/2032	11/8/2032	6.97	6.69	6.97	6.97	7.57	7.86	9.03	8.22	2.11	2.68	2.68	1.39	1.51	1.34	2.08	1.32	6.42	30.1	29.01	28.64	14.01	14.01	6.63	6.2
SPP South - Energy Price - 1H2023	3601	11/9/2032	11/9/2032	6.06	6.69	6.75	6.79	7.87	15.5	35.79	35.82	29.72	29.72	21.31	29.72	30.79	16.04	10.4	29.72	33.6	33.6	33.6	34.38	33.6	33.6	22.42	12.42
SPP South - Energy Price - 1H2023	3602	11/10/2032	11/10/2032	25.2	25.2	25.2	25.2	25.2	25.2	36.83	36.83	36.83	36.83	36.83	36.83	34.46	34.46	34.46	34.88	36.83	47.08	45.01	36.83	36.83	36.83	26.51	26.51
SPP South - Energy Price - 1H2023	3603	11/11/2032	11/11/2032	26.24	25.2	25.2	25.2	25.2	25.2	34.19	34.19	29.72	8.73	6.09	5.49	5.48	5.9	5.96	5.84	29.72	33.01	34.19	32.43	30.51	29.72	22.9	22.9
SPP South - Energy Price - 1H2023	3604	11/12/2032	11/12/2032	20.65	20.65	20.65	20.65	20.65	20.65	31.44	31.44	31.44	10.88	6.09	10.04	9.75	9.96	27.03	31.13	32.56	33.74	35.9	31.44	32.33	31.44	23.68	23.6
SPP South - Energy Price - 1H2023	3605	11/13/2032	11/13/2032	23.6	23.6	20.65	23.53	23.6	23.6	43.98	36.04	36.04	26.31	17.81	16.24	8.12	8.72	8.83	8.65	20.75	36.04	36.04	36.04	33.17	30.87	7.22	7.06
SPP South - Energy Price - 1H2023	3606	11/14/2032	11/14/2032	7.13	7.25	6.97	7.22	7.33	7.22	15.62	12.6	10.99	36.04	30.39	15.92	15.99	8.72	3.7	36.04	37.03	36.59	36.04	36.04	36.04	36.04	20.65	20.97
SPP South - Energy Price - 1H2023	3607	11/15/2032	11/15/2032	19.29	18.56	19.81	18.56	21.15	21.14	31.34	30.36	29.7	8.73	16.19	29.45	5.48	30.19	29.72	29.72	30.36	31.34	31.34	31.34	30.79	30.36	18.56	21.14
SPP South - Energy Price - 1H2023	3608	11/16/2032	11/16/2032	21.15	24.15	25.2	25.2	26.11	26.15	34.79	35.72	34.5	34.5	34.5	33.98	33.98	33.98	34.33	34.5	34.5	40.01	36.85	36.09	35.16	35.04	25.2	25.65
SPP South - Energy Price - 1H2023	3609	11/17/2032	11/17/2032	25.39	25.39	25.39	25.39	25.38	25.39	36.05	38.91	35.8	38.91	35.8	35.8	35.8	40.01	35.8	35.8	40.7	46.05	47.21	46.22	45.28	45.28	33.63	26.7
SPP South - Energy Price - 1H2023	3610	11/18/2032	11/18/2032	23.51	21.95	21.82	21.82	21.82	22.2	30.11	30.11	29.72	8.73	6.09	5.49	5.48	1.34	2.08	5.84	6.42	29.72	30.11	30.11	30.11	30.11	21.82	21.82
SPP South - Energy Price - 1H2023	3611	11/19/2032	11/19/2032	21.52	21.15	21.15	21.18	22.19	23.08	30.95	33.62	29.29	29.29	29.29	29.29	29.29	13.65	10.18	28.57	29.29	29.29	30.05	29.29	29.29	29.29	21.15	21.15
SPP South - Energy Price - 1H2023	3612	11/20/2032	11/20/2032	21.15	21.15	21.15	21.15	21.15	21.15	37.19	38.02	36.9	36.9	36.51	36.51	16.74	21.53	17.88	36.9	36.9	39.99	39.39	39.3	39.12	39.69	22.75	23.52
SPP South - Energy Price - 1H2023	3613	11/21/2032	11/21/2032	21.15	21.15	21.15	21.15	21.15	21.15	36.9	36.9	36.9	36.9	36.9	36.9	8.65	1.99	3.08	1.95	33.08	36.9	36.9	36.9	36.9	36.9	21.15	21.15
SPP South - Energy Price - 1H2023	3614	11/22/2032	11/22/2032	24.11	24.11	24.11	24.11	24.11	24.11	32.86	32.86	32.86	32.86	32.86	32.86	32.86	32.86	32.86	32.86	32.86	34.77	37.68	32.86	32.86	32.86	25.2	25.2
SPP South - Energy Price - 1H2023	3615	11/23/2032	11/23/2032	25.2	23.64	23.64	23.64	23.64	25.2	32.3	32.75	32.3	32.31	32.3	32.3	32.36	32.3	32.3	32.3	32.3	34.24	32.77	33.11	32.3	32.3	23.64	23.64
SPP South - Energy Price - 1H2023	3616	11/24/2032	11/24/2032	23.29	23.29	23.29	23.29	23.29	23.29	31.88	31.88	32.07	31.89	32.73	32.04	31.9	31.88	31.88	31.88	33.85	34.42	36.56	35.43	33.85	33.85	25.2	23.74
SPP South - Energy Price - 1H2023	3617	11/25/2032	11/25/2032	24.89	24.89	23.29	23.33	24.89	24.89	31.91	32.41	31.88	31.88	31.88	31.87	31.88	31.88	31.87	31.88	31.88	34.73	34.53	33.03	31.88	31.88	23.29	25.2
SPP South - Energy Price - 1H2023	3618	11/26/2032	11/26/2032	23.14	23.6	23.6	21.21	21.21	21.21	29.37	29.37	29.37	29.37	29.37	29.37	29.37	6.02	21.3	6.07	29.37	29.37	29.37	29.37	29.37	29.37	21.21	21.21
SPP South - Energy Price - 1H2023	3619	11/27/2032	11/27/2032	21.21	21.21	21.21	21.21	21.21	21.21	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	40.23	37.01	37.01	38.13	42.7	40.23	37.01	37.01	21.21	21.21
SPP South - Energy Price - 1H2023	3620	11/28/2032	11/28/2032	21.21	21.21	23.6	21.21	21.21	21.21	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	29.11	37.01	38.5	39.33	39.02	37.01	37.01	23.06	21.21
SPP South - Energy Price - 1H2023	3621	11/29/2032	11/29/2032	22.91	23.53	21.65	21.65	23.53	23.53	30.79	33.62	30.77	31.84	30.77	30.77	33.62	32.34	33.41	31.38	32.68	33.62	33.62	32.35	33.39	32.73	24.15	24.18
SPP South - Energy Price - 1H2023	3622	11/30/2032	11/30/2032	24.11	24.13	24.16	24.03	24.02	24.02	32.64	32.41	30.61	29.82	29.82	29.82	29.82	29.82	29.82	29.82	30.25	34.21	33.63	33.7	33.63	34.21	23.82	24.02
SPP South - Energy Price - 1H2023	3623	12/1/2032	12/1/2032	30.52	32.13	32.19	31.58	29.57	28.76	34.78	36.79	35.68	33.78	30.29	30.29	30.29	30.29	30.41	30.29	33.78	36.12	35.75	36.09	37.1	37.01	32.29	33.23
SPP South - Energy Price - 1H2023	3624	12/2/2032	12/2/2032	33.57	33.57	33.57	31	33.57	33.49	37.43	37.43	35.78	34.15	33.78	33.92	33.78	33.78	32.65	33.78	33.92	37.01	37.01	37.87	37.07	37.01	32.42	30.72
SPP South - Energy Price - 1H2023	3625	12/3/2032	12/3/2032	32.95	32.95	33.02	32.95	31.72	29.59	35.65	38.54	36.17	34.76	34.77	35.2	34.83	35.03	34.76	34.76	35.75	39.88	40.39	40.39	39.88	39.88	33.87	33.87
SPP South - Energy Price - 1H2023	3626	12/4/2032	12/4/2032	32.95	32.98	33.02	32.95	32.95	33.49	35.78	35.78	34.81	34.8	31.26	31.26	31.26	31.26	31.26	31.26	32.18	35.46	35.46	34.62	33.98	32.89	32.16	29.59
SPP South - Energy Price - 1H2023	3627	12/5/2032	12/5/2032	29.59	29.59	29.59	29.59	29.59	29.59	31.26	33.23	31.26	31.26	8.52	7.81	9.57	17.05	17.05	31.26	31.26	34.81	34.86	34.8	34.64	34.64	29.59	29.59
SPP South - Energy Price - 1H2023	3628	12/6/2032	12/6/2032	32.28	32.28	32.28	32.28	32.28	32.28	36.83	36.83	30.77	1.69	1.5	1.2	7.1	6.84	7.1	33.78	36.83	37.37	43.03	37.37	37.37	37.37	34.16	34.16
SPP South - Energy Price - 1H2023	3629	12/7/2032	12/7/2032	34.16	33.57	34.77	34.77	34.77	36.25	43.55	43.55	43.55	41.23	39.43	39.18	37.29	37.29	37.29	37.29	39.25	40.53	40.53	37.33	40.53	39.81	35.71	35.24
SPP South - Energy Price - 1H2023	3630	12/8/2032	12/8/2032	34.92	35.81	35.85	35.44	35.23	35.93	44.57	48.29	44.57	42.71	42.71	39.29	39.29	38.18	39.29	38.18	39.29	42.71	44.57	44.57	42.92	41.5	36.58	34.06
SPP South - Energy Price - 1H2023	3631	12/9/2032	12/9/2032	35.04	36.26	36.13	36.62	35.4	35.04	39.67	39.67	39.67	39.67	39.67	39.67	39.67	39.67	39.67	39.67	39.67	42.57	42.86	39.67	39.67	39.67	35.04	35.04
SPP South - Energy Price - 1H2023	3632	12/10/2032	12/10/2032	32.35	32.34	32.55	31.96	32.55	31.96	38.87	38.78	36.51	36.51	36.51	33.59	33.59	33.59	33.78	36.51	36.51	36.51	36.51	36.51	36.51	36.51	32.29	31.96
SPP South - Energy Price - 1H2023	3633	12/11/2032	12/11/2032	31.96	31.96	31.96	31.96	31.96	31.96	33.76	33.76	33.76	33.76	14.8	19.3	33.76	33.76	33.76	33.76	33.76	35.46	35.46	35.46	35.46	33.76	31.96	31.96
SPP South - Energy Price - 1H2023	3634	12/12/2032	12/12/2032	31.96	31.96	31.96	31.96	31.96	31.96	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	34.75	37.65	37.66	35.46	37.66	36.9	34.77	34.06
SPP South - Energy Price - 1H2023	3635	12/13/2032	12/13/2032	33.57	33.57	33.57	33.57	33.57	33.57	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	31.73	31.73
SPP South - Energy Price - 1H2023	3636	12/14/2032	12/14/2032	31.05	31.05	31.05	31.05	31.05	31.05	35.58	36	35.58	35.58	35.58	35.58	33.78	33.78	33.78	35.58	35.58	36.01	36.08	36.09	36.03	36.03	33.57	32.98
SPP South - Energy Price - 1H2023	3637	12/15/2032	12/15/2032	32.93	33.57	32.98	33.57	33.17	32.61	35.69	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	36.74	39.03	38.74	39.94	37.68	33.83	33.57
SPP South - Energy Price - 1H2023	3638	12/16/2032	12/16/2032	32.18	32.18	32.18	28.91	28.91	28.91	33.39	33.39	33.38	33.38	33.38	11.15	33.38	14.06	33.38	33.39	33.39	33.39	33.39	33.39	33.39	35.73	31.9	32.18
SPP South - Energy Price - 1H2023	3639	12/17/2032	12/17/2032	29.41	29.87	29.41	29.41	29.41	29.41	33.57	35.75	34.97	35.5	33.03	33.19	32.27	31.84	31.24	31.82	32.57	35.75	36.23	36.23	36.23	36.23	33.57	33.04
SPP South - Energy Price - 1H2023	3640	12/18/2032	12/18/2032	32.79	32.72	32.32	31.99	31.6	31.41	34.74	35.37	34.65	35.7	34.03	31.07	31.07	29.83	31.07	31.07	32.49	34.2	34.86	34.62	34.64	34.57	31.62	32.2
SPP South - Energy Price - 1H2023	3641	12/19/2032	12/19/2032	30.02	29.87	29.83	29.74	30.25	29.7	33.06	35.36	35.46	35.46	35.24	35.46	33.97	32.62	33.94	31.8	34.75	37.86	37.86	38.14	36.77	36.08	34.14	34.06
SPP South - Energy Price - 1H2023	3642	12/20/2032	12/20/2032	33.8	34.62	33.69	34.18	33.57	33.49	37.12	40.44	40.44	37.3	34.17	33.32	31.82	31.82	31.82	31.82	33.11	37.16	37.3	37.03	36.48	37.17	34.22	31.31
SPP South - Energy Price - 1H2023	3643	12/21/2032	12/21/2032	30.36	29.31	29.31	29.31	27.63	27.63	32.07	32.07	32.07	28.69	12.96	7.44	7.1	6.84	7.19	28.74	32.07	32.21	33.51	34.52	33.63	33.89	27.63	30.45
SPP South - Energy Price - 1H2023	3644	12/22/2032	12/22/2032	29.07	29.32	29.07	29.07	28.98	29.07	33.78	33.78	33.78	33.78	32.72	31.84	31.28	31.48	30.92	30.91	32.25	35.88	35.88	35.88	35.88	35.88	30.68	29.07
SPP South - Energy Price - 1H2023	3645	12/23/2032	12/23/2032	31.32	31.26	31.32	31.32	31.3	30.8	36.73	37.77	37.33	35.76	32.43	33.13	31.85	31.85	31.85	31.85	33.11	36.97	34.97	33.13	34.18	34.38	30.25	27.42
SPP South - Energy Price - 1H2023	3646	12/24/2032	12/24/2032	27.28	27.28	27.28	27.28	27.28	30.33	34.06	35.79	35.8	35.98	34.06	34.06	32.73	32.86	32.81	32.37	33.39	35.75	35.54	36.19	34.97	34.24	30.33	30.11
SPP South - Energy Price - 1H2023	3647	12/25/2032	12/25/2032	29.43	28.46	30.33	30.33	30.33	30.33	32.54	32.68	28.82	28.82	28.82	28.82	28.82	28.82	28.82	28.82	28.82	32.92	32.92	28.82	32.04	32.04	30.33	27.9
SPP South - Energy Price - 1H2023	3648	12/26/2032	12/26/2032	30.02	30.33	30.33	29.64	30.09	27.9	31.63	32.04	28.82	28.82	28.82	28.82	28.82	28.82	28.82	28.82	28.82	32.04	32.92	32.92	32.92	32.92	31.17	31.16
SPP South - Energy Price - 1H2023	3649	12/27/2032	12/27/2032	29.45	29.45	29.45	29.45	29.45	29.45	33.93	33.93	33.93	33.93	33.93	33.93	33.93	33.93	33.93	33.93	33.93	36.76	38.3	37.15	35.64	34.01	30.82	29.45
SPP South - Energy Price - 1H2023	3650	12/28/2032	12/28/2032	28.66	28.66	28.66	30.82	31.76	31.68	37.07	38.79	38.79	38.79	37.07	37.07	36.79	35.32	35.09	35.48	33.85	35.95	36.8	35.89	33.13	33.13	28.66	28.66
SPP South - Energy Price - 1H2023	3651	12/29/2032	12/29/2032	24.69	24.69	24.69	24.69	24.69	24.69	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	29.06	30.45	32.83	31.39	29.06	29.06	29.06	27.38	24.69

SPP South - Energy Price - 1H2023	3652	12/30/2032	12/30/2032	31.51	31.51	31.51	31.51	32.25	31.51	36.05	36.05	36.05	35	36.04	36.04	33.16	36.04	36.05	36.05	37.07	37.5	38.75	38.52	36.05	36.05	33.57	31.51
SPP South - Energy Price - 1H2023	3653	12/31/2032	12/31/2032	30.48	30.48	30.48	30.48	30.48	30.48	34.99	35.97	34.99	34.99	34.99	33.78	33.78	34.99	34.99	34.99	34.99	34.99	34.99	34.99	34.99	34.99	30.48	30.48
SPP South - Energy Price - 1H2023	3654	1/1/2033	1/1/2033	31.08	31.08	31.08	31.08	31.08	31.08	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.46	37.36	37.36	37.36	37.36	31.08	31.08
SPP South - Energy Price - 1H2023	3655	1/2/2033	1/2/2033	31.08	31.08	31.08	31.08	31.08	31.08	37.35	37.35	37.36	37.35	10.21	9.14	8.36	7.81	7.37	9.37	7.21	37.36	37.36	37.36	37.36	37.36	31.08	31.08
SPP South - Energy Price - 1H2023	3656	1/3/2033	1/3/2033	29.85	29.85	29.85	29.85	29.85	29.85	42.29	42.29	42.29	42.29	42.29	11.59	8.63	8.06	7.61	7.74	2.14	41.55	42.29	42.29	42.29	42.29	29.85	29.85
SPP South - Energy Price - 1H2023	3657	1/4/2033	1/4/2033	29.28	29.28	29.28	29.28	29.28	29.28	44.18	44.24	41.57	41.57	10.54	41.57	41.57	41.57	41.57	41.57	41.57	44.18	44.26	44.24	44.18	44.24	32.6	29.28
SPP South - Energy Price - 1H2023	3658	1/5/2033	1/5/2033	28.53	28.53	28.53	28.53	28.53	28.53	40.62	40.62	40.62	40.62	40.62	40.62	40.62	40.62	40.62	40.62	40.62	41.8	44.12	40.66	40.62	40.62	28.53	28.53
SPP South - Energy Price - 1H2023	3659	1/6/2033	1/6/2033	28.29	28.29	28.29	28.29	28.29	28.29	40.33	40.33	40.33	40.33	40.33	40.33	40.33	40.33	40.33	40.33	40.33	41.54	44.18	44.17	40.33	40.33	28.29	29.1
SPP South - Energy Price - 1H2023	3660	1/7/2033	1/7/2033	29.1	29.1	29.1	29.1	29.1	29.1	41.55	44.19	44.19	43.59	41.55	41.55	38.41	38.27	37.68	37.68	37.68	38.52	39.5	39.31	37.68	37.68	29.1	26.19
SPP South - Energy Price - 1H2023	3661	1/8/2033	1/8/2033	26.19	26.19	26.19	26.19	26.19	26.19	31.48	34.22	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	34.98	36.08	36.28	34.98	34.98	29.1	29.1
SPP South - Energy Price - 1H2023	3662	1/9/2033	1/9/2033	29.1	29.1	28.47	28.47	26.19	26.19	31.48	34.22	34.22	31.48	31.48	12.5	11.23	7.81	7.37	7.97	31.48	31.87	31.48	33.04	31.48	31.48	26.19	26.19
SPP South - Energy Price - 1H2023	3663	1/10/2033	1/10/2033	29.35	29.35	29.35	29.35	29.35	29.35	41.66	47.85	45.29	41.66	41.66	44.09	43.82	42.31	41.66	41.66	43.15	47.91	49.38	49.38	48.25	45.73	33.48	33.48
SPP South - Energy Price - 1H2023	3664	1/11/2033	1/11/2033	33.48	33.48	33.48	33.48	32.17	35.89	52.84	52.84	52.84	52.84	52.84	52.49	52.68	50.54	52.59	52.84	50.24	45.93	45.93	45.23	45.23	45.23	32.17	32.17
SPP South - Energy Price - 1H2023	3665	1/12/2033	1/12/2033	31.32	31.32	31.32	31.32	31.32	31.32	44.29	46.83	45.87	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	45.87	45.88	45.87	45.87	44.15	31.32	31.32
SPP South - Energy Price - 1H2023	3666	1/13/2033	1/13/2033	30.45	30.45	30.55	30.64	30.45	30.45	46.26	47.39	43.05	43.05	43.05	43.05	43.05	43.05	43.8	43.05	43.05	46.99	50.34	46.34	43.88	43.05	30.45	30.45
SPP South - Energy Price - 1H2023	3667	1/14/2033	1/14/2033	31.09	31.09	31.09	31.29	31.09	31.09	48.46	49.15	51.28	45.11	45.15	45.15	44.35	44.27	43.89	43.87	43.87	44.3	44.6	43.87	43.87	43.87	31.09	31.09
SPP South - Energy Price - 1H2023	3668	1/15/2033	1/15/2033	31.09	31.09	31.09	31.09	31.09	31.09	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	31.09	31.09
SPP South - Energy Price - 1H2023	3669	1/16/2033	1/16/2033	31.09	31.09	31.09	31.09	31.09	31.09	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	40.25	40.25	40.25	37.38	31.09	31.09
SPP South - Energy Price - 1H2023	3670	1/17/2033	1/17/2033	30.95	30.95	30.95	31.14	30.95	31.09	43.68	45.91	43.68	43.68	43.68	43.05	43.68	43.68	7.61	40.19	41.95	43.68	43.68	43.68	43.68	43.68	30.95	30.95
SPP South - Energy Price - 1H2023	3671	1/18/2033	1/18/2033	35.71	35.71	35.71	35.71	35.71	35.71	49.7	49.7	49.7	49.7	49.7	45.72	45.72	45.72	45.72	42.54	49.7	49.7	49.7	49.7	49.7	49.7	35.71	35.71
SPP South - Energy Price - 1H2023	3672	1/19/2033	1/19/2033	37.52	37.52	37.52	37.52	37.52	37.52	51.99	51.99	51.99	51.99	41.99	38.69	38.16	36.59	36.03	38.43	41	51.99	51.99	51.99	51.99	51.99	37.52	36.93
SPP South - Energy Price - 1H2023	3673	1/20/2033	1/20/2033	33.63	33.63	33.63	33.48	33.63	33.63	47.07	47.07	47.07	47.07	47.07	47.07	45.9	45.83	47.07	41.38	47.07	47.07	47.07	47.07	47.07	47.07	33.63	33.63
SPP South - Energy Price - 1H2023	3674	1/21/2033	1/21/2033	33.39	33.39	33.2	32.95	33.02	33.39	44.44	44.44	11.99	2.94	2.56	2.53	2.01	1.9	7.61	7.74	7.44	46.77	47.85	47.53	46.77	46.77	33.39	33.39
SPP South - Energy Price - 1H2023	3675	1/22/2033	1/22/2033	33.39	33.39	33.39	33.39	33.39	33.39	40.13	40.13	40.13	40.13	10.21	9.14	8.36	7.81	7.37	7.5	40.13	40.13	40.13	40.13	40.13	40.13	33.39	33.39
SPP South - Energy Price - 1H2023	3676	1/23/2033	1/23/2033	33.39	33.39	33.39	33.39	33.39	33.39	40.13	40.13	40.13	40.13	40.13	36.92	40.13	40.13	15.16	7.5	7.21	40.13	40.13	40.13	40.13	40.13	33.39	33.39
SPP South - Energy Price - 1H2023	3677	1/24/2033	1/24/2033	28.81	28.81	28.81	28.81	28.81	28.81	40.98	40.98	40.98	40.98	40.98	40.98	36.2	12.78	40.98	40.98	40.98	40.98	41.41	41.1	40.98	40.98	28.81	28.81
SPP South - Energy Price - 1H2023	3678	1/25/2033	1/25/2033	28.02	28.02	28.02	28.02	28.02	28.02	39.98	42.65	43.51	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	39.98	28.02	28.02
SPP South - Energy Price - 1H2023	3679	1/26/2033	1/26/2033	27.9	27.9	27.9	27.9	27.9	27.9	41.7	42.54	43.3	39.84	39.84	41.46	39.84	39.84	39.84	39.84	39.84	44.06	45.64	45.62	45.64	45.56	32.87	32.9
SPP South - Energy Price - 1H2023	3680	1/27/2033	1/27/2033	32.95	32.45	32.45	32.45	32.45	32.99	50.47	54.51	45	43.31	42.97	42.25	41.4	41.4	41.4	41.4	41.74	46.07	48.46	48.46	48.46	48.46	34.37	33.48
SPP South - Energy Price - 1H2023	3681	1/28/2033	1/28/2033	35.24	34.31	34.37	34.37	34.2	35.17	54.28	54.28	46.49	46.49	46.49	46.49	41.61	41.55	43.38	34.01	6.82	46.49	46.49	46.49	46.49	46.49	33.17	33.17
SPP South - Energy Price - 1H2023	3682	1/29/2033	1/29/2033	33.17	33.17	33.17	33.17	33.17	33.17	39.87	39.87	39.87	39.87	16.03	7.19	7.01	6.94	6.87	6.87	6.61	39.87	39.87	39.87	39.87	39.87	33.17	33.17
SPP South - Energy Price - 1H2023	3683	1/30/2033	1/30/2033	33.17	33.17	33.17	33.48	33.17	33.17	39.87	40.37	41.53	41.44	40.44	40.37	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	33.17	33.17
SPP South - Energy Price - 1H2023	3684	1/31/2033	1/31/2033	29.62	29.62	29.62	29.62	29.62	29.62	42	42	42	40.54	7.94	7.43	7.24	7.16	4.73	1.48	6.82	27.96	39.4	39.95	39.95	41.55	29.62	29.62
SPP South - Energy Price - 1H2023	3685	2/1/2033	2/1/2033	9.48	19.74	19.74	19.74	19.74	19.74	34.67	34.67	34.67	33.1	33.1	33.1	31.97	28.85	5.45	28.95	28.86	34.67	34.67	34.67	34.67	34.67	19.74	19.74
SPP South - Energy Price - 1H2023	3686	2/2/2033	2/2/2033	18.34	18.34	18.34	18.34	18.34	18.34	32.46	34.45	32.46	34.06	32.46	32.46	32.46	32.46	32.46	32.46	32.46	32.46	34.06	34.07	34.98	34.46	19.36	18.34
SPP South - Energy Price - 1H2023	3687	2/3/2033	2/3/2033	19.26	19.26	19.26	19.26	19.26	19.26	33.92	33.92	33.92	33.92	33.92	33.92	31.97	31.97	33.1	31.97	33.56	33.92	33.92	33.92	33.92	34.99	20.63	20.14
SPP South - Energy Price - 1H2023	3688	2/4/2033	2/4/2033	20.34	19.14	19.14	19.48	20.63	20.63	36.6	38.04	36.64	35.28	34.13	34.06	33.72	33.72	33.72	33.72	33.72	34.13	35.89	35.89	35.62	35.57	20.63	20.36
SPP South - Energy Price - 1H2023	3689	2/5/2033	2/5/2033	20.11	19.14	19.14	19.14	19.14	19.14	36.99	37.34	35.64	35.64	35.64	34.71	35.64	35.64	35.15	9.1	6.3	35.64	35.64	35.64	35.64	35.64	19.14	19.14
SPP South - Energy Price - 1H2023	3690	2/6/2033	2/6/2033	19.14	9.65	19.14	19.14	19.14	19.14	35.64	35.64	35.64	35.64	35.64	35.64	35.64	35.64	35.64	35.64	35.64	35.92	36.27	36.71	36.7	35.64	19.14	19.14
SPP South - Energy Price - 1H2023	3691	2/7/2033	2/7/2033	17.84	17.84	17.84	17.84	17.84	17.94	33.43	34.25	33.26	31.66	31.66	31.66	25.41	5.51	5.45	5.45	25.41	32.54	34.01	34.02	33.72	33.35	18.29	17.84
SPP South - Energy Price - 1H2023	3692	2/8/2033	2/8/2033	17.77	17.77	17.77	17.77	17.77	17.86	33.18	34.02	32.28	31.97	32.28	32.28	7.83	5.51	5.45	5.45	5.25	31.97	33.26	32.28	32.28	32.28	17.77	17.77
SPP South - Energy Price - 1H2023	3693	2/9/2033	2/9/2033	18.27	18.27	18.27	8.93	18.27	18.27	33.07	33.07	33.07	5.05	1	1.07	1.04	1.04	1	0	1.04	4.85	33.07	33.07	34.07	34.42	19.33	19.35
SPP South - Energy Price - 1H2023	3694	2/10/2033	2/10/2033	18.7	18.19	18.19	18.61	18.73	18.6	33.94	34.58	31.97	32.94	32.9	31.66	30.96	30.86	25.18	25.47	28.86	31.97	32.94	33.69	33.6	32.94	18.19	18.19
SPP South - Energy Price - 1H2023	3695	2/11/2033	2/11/2033	17.6	17.6	17.6	17.6	17.6	17.6	32.01	33.1	32.01	29.64	28.13	28.02	26.17	5.51	5.45	5.45	5.25	29.44	32.29	32.01	32.01	32.01	17.6	17.6
SPP South - Energy Price - 1H2023	3696	2/12/2033	2/12/2033	17.6	17.6	17.6	17.6	17.6	17.6	33.79	35.62	32.77	32.77	32.77	32.77	32.77	32.77	32.22	4.48	4.06	32.77	32.77	32.77	32.77	32.77	17.6	17.6
SPP South - Energy Price - 1H2023	3697	2/13/2033	2/13/2033	17.6	17.6	17.6	17.6	17.6	17.6	32.77	33.88	32.77	32.77	32.77	32.77	32.77	32.77	32.77	32.77	32.77	32.77	32.77	33.3	36.47	36.47	18.46	18.02
SPP South - Energy Price - 1H2023	3698	2/14/2033	2/14/2033	20.78	20.78	20.78	20.78	20.78	20.78	38.23	38.55	39.6	39.69	39.6	39.16	37.87	37.61	37.68	37.78	37.2	39.18	38.92	39.34	39.06	38.44	20.78	20.78
SPP South - Energy Price - 1H2023	3699	2/15/2033	2/15/2033	20.74	20.74	20.74	20.74	20.74	20.74	36.98	38.38	36.98	36.98	36.98	5.71	2.1	26.19	1	23.12	26.86	32.44	36.98	36.98	36.98	36.98	20.74	20.74
SPP South - Energy Price - 1H2023	3700	2/16/2033	2/16/2033	27.19	26.34	26.15	26.34	24.23	26.34	47.19	47.19	28.65	18.2	31.97	25.7	24.8	5.51	20.96	5.45	7.9	34.98	47.19	47.19	47.19	45.1	23.69	23.1
SPP South - Energy Price - 1H2023	3701	2/17/2033	2/17/2033	21.67	21.84	21.84	21.84	21.84	21.84	38.72	38.72	29.23	31.97	30.51	1.07	25.98	1.04	30.51	30.98	30.63	38.72	38.72	39.22	39.67	39.46	21.84	21.84
SPP South - Energy Price - 1H2023	3702	2/18/2033	2/18/2033	20.46	20.63	20.22	20.63	20.63	20.63	38.11	37.55	36.15	36.15	28.82	5.71	5.57	1.04	5.45	5.45	5.25	29.64	35.33	36.15	36.15	36.15	20.22	20.22
SPP South - Energy Price - 1H2023	3703	2/19/2033	2/19/2033	20.22	20.22	20.22	20.22	20.22	20.22	37.64	38.68	37.64	37.64	37.64	37.64	37.64	6.62	36.66	37.64	37.64	37.64	38.24	37.79	38.41	37.64	20.22	20.22
SPP South - Energy Price - 1H2023	3704	2/20/2033	2/20/2033	20.22	20.22	20.22	20.22	20.22	20.22	37.64	37.64	37.64	37.64	37.64	37.64	34.63	4.25	4.37	6.55	1.25	35.62	37.64	37.64	37.64	37.64	20.22	20.22
SPP South - Energy Price - 1H2023	3705	2/21/2033	2/21/2033	18.6	18.85	18.83	18.85	20.55	20.55	38.16	38.16	35.16	34.24	34.24	34.24	34.24	34.24	34.24	34.24	34.24	38.16	38.24	38.16	38.16	35.21	20.55	20.55
SPP South - Energy Price - 1H2023	3706	2/22/2033	2/22/2033	21.36	20.65	21.36	20.63	20.65	21.79	40.13	40.13	35.98	34.79	33.1	30.74	31.97	31.97	25.64	17.6	31.97	29.13	35.82	35.98	33.41	35.98	19.53	19.54
SPP South - Energy Price - 1H2023	3707	2/23/2033	2/23/2033	18.01	18.01	18.01	18.01	18.01	18.01	33.98	33.98	33.55	31.19	27.24	27.09	4.37	4.29	4.42	1	6.42	30.53	33.25	33.55	33.55	33.55	18.01	18.01
SPP South - Energy Price - 1H2023	3708	2/24/2033	2/24/2033	19.06	19.06	19.06	19.06	19.06	19.06	35.22	35.22	35.02	33.33	32.62	32.22	31.97	34.03	35.03	35.03	31.97	35.22	35.22	35.66	39.27	36.5	21.25	20.71
SPP South - Energy Price - 1H2023	3709	2/25/2033	2/25/2033	20.71	20.71	20.63	20.71	20.71	20.71	38.42	39.4	37.75	37.29	35.72	36.03	35.22	35.22	35.17	34.47	34.47	34.55	36.74	36.8	34.47	34.47	18.85	19.23
SPP South - Energy Price - 1H2023	3710	2/26/2033	2/26/2033	18.59	18.59	18.59	18.59	18.59	18.59	34.77	34.61	7.83	1.17	1.13	1.04	1.19	1.08	1.24	1.2	1.17	7.43	34.61	34.61	34.61	34.61	18.59	18.59
SPP South - Energy Price - 1H2023	3711	2/27/2033	2/27/2033	18.59	18.59	18.59	18.59	18.59	18.59	34.61	34.61	34.61	1.08	1.13	1.04	1.19	1.08	1.24	1.2	1.19	7.43	8.5	20.66	18.73	18.73	10.93	10.06
SPP South - Energy Price - 1H2023	3712	2/28/2033	2/28/2033	13.7	13.37	13.57	12.48	13.52	17.05	27.66	22.15	0.95	0.89	0.94	16.52	8.62	29.19	12.66	10.69	15.2	31.97	34.27	40.13	34.13	39.9	20.17	19.9
SPP South - Energy Price - 1H2023	3713	3/1/2033	3/1/2033	8.39	4.95	4.96	4.96	5.39	4.43	9.26	9.09	6.45	4.65	0.69	0.64	0.73	0.66	0.76	0.74	0.71	0.73	23.24	27.41	29.03	29.38	20.4	19.7
SPP South - Energy Price - 1H2023	3714	3/2/2033	3/2/2033	22.1	22.1	22.1	22.1	22.1	22.17	34.04	34.04	26.49	23.53	23.53	24.3	24.37	23.58	23.53	25.3	30.57	34.03	34.7	34.78	34.04	34.34	25.24	22.1
SPP South - Energy Price - 1H2023	3715	3/3/2033	3/3/2033	23.47	23.4	20.42	23.11	23.34	22.76	31.93	31.93	31.93	31.93	30.32	28.43	24.87	24.37	24.55	4.82	4.72	22.48	30.49	31.93	31.93	32.28	23.02	22.71
SPP South - Energy Price - 1H2023	3716	3/4/2033	3/4/2033	21.14	21.14	21.14	21.14	21.14	21.14	29.26	29.23	28.32	25.38	24.37	22.46	22.46	4.52	4.64	4.82	4.72	23.74	27.95	28.32	27.95	27.37	17.87	17.87
SPP South - Energy Price - 1H2023	3717	3/5/2033	3/5/2033	17.87	18.12	17.87	19.7	19.7	19.7	26.4	23.95	0.78	0.74	0.77	0.72	0.82	0.78	0.85	23.95	23.95	26.4	27.45	28.26	27.45	27.45	19.98	19.92
SPP South - Energy Price - 1H2023	3718	3/6/2033	3/6/2033	19.7	19.7	20.14	19.7	20.05	20.48	27.45	26.4	23.95	23.95	23.95	23.95	23.95	5.07	5.2	22.64	23.95	26.4	27.19	27.34	26.4	26.51	19.7	19.7
SPP South - Energy Price - 1H2023	3719	3/7/2033	3/7/2033	17.98	17.91	16.6	16.6	17.85	18.57	27.17	26.01	23.81	21.84	20.35	20.03	4.31	20.03	20.86	20.03	20.03	4.55	21.32	22.68	23.53	23.53	16.6	16.6
SPP South - Energy Price - 1H2023	3720	3/8/2033	3/8/2033	16.94	16.94	16.94	16.94	16.94	19.7	27.9	27.11	24.23	24.23	24.22	24.37	25.85	24.23	27.02	27.21	25.6	27.5	27.5	27.59	27.59	27.59	19.7	19.7
SPP South - Energy Price - 1H2023	3721	3/9/2033	3/9/2033	20.23	20.23	19.7	19.7	19.7	19.7	28.49	26.8	25.11	23.53	25.1	28.49	26.7	24.37	26.21	28.49	28.49	28.49	28.54	28.88	28.49	28.54	20.92	19.7
SPP South - Energy Price - 1H2023	3722	3/10/2033	3/10/2033	20.92	19.7	20.33	20.92	21.51	22.37	29.8	29.61	29.22	29.22	26.88	24.37	29.22	29.22	29.22	29.22	26.94	26.92	28.15	28.76	28.68	26.75	19.7	18.81
SPP South - Energy Price - 1H2023	3723	3/11/2033	3/11/2033	19.7	19.7	19.7	19.7	19.69	19.61	27.95	26.37	27.95	25.71	25.06	28.34	28.34	28.34	28.34	28.34	28.34	28.34	28.34	28.34	28.34	24.91	17.61	17.54
SPP South - Energy Price - 1H2023	3724	3/12/2033	3/12/2033	7	5.78	7.61	7.62	4.69	4.43	6.45	6.45	5.38	0.83	0.77	0.72	0	0.74	0.85	0.83	0.83	5.1	23.51	23.51	23.51	23.51	17.54	17.54
SPP South - Energy Price - 1H2023	3725	3/13/2033	3/13/2033	17.54	17.54	16.14	17.54	18.24	17.54	26.4	26.4	26.91	26.4	26.4	26.4	24.31	23.72	26.4	25.95	26.23	26.19	25.94	26.4	23.51	23.51	17.61	17.54
SPP South - Energy Price - 1H2023	3726	3/14/2033	3/14/2033	18.32	18.32	18.32	18.32	18.32	18.32	27.46	27.11	27.46	27.46	26.21	26.15	22.64	27.11	27.46	27.11	23.53	23.53	24.95	25.09	23.53	6.2	5.2	4.65
SPP South - Energy Price - 1H2023	3727	3/15/2033	3/15/2033	4.91	4.89	4.75	4.73	4.69	7.4	23.8	6.47	4.79	4.65	4.2	4.21	4.31	4.52	4.64	4.55	4.72	4.55	21.1	23.53	25.16	24.37	18.12	18.12
SPP South - Energy Price - 1H2023	3728	3/16/2033	3/16/2033	18	18	5.51	18	17.94	18.35	27.06	24.86	10.92	4.65	4.2	0.64	0.73	0.76	0.76	0.74	4.72	4.55	24.37	27.06	27.06	27.06	19.7	19.7
SPP South - Energy Price - 1H2023	3729	3/17/2033	3/17/2033	19.9	19.9	19.9	19.9	19.9	20.35	28.61	29.96	29.41	31.28	28.87	28.5	27.67	27.4	27.63	27.27	27.27	27.27	27.96	27.73	27.27	27.27	19.9	19.7
SPP South - Energy Price - 1H2023	3730	3/18/2033	3/18/2033	18.7	18.7	18.7	18.7	18.7	18.7	24.88	19.54	0.7	0.66	0.69	0.64	0	0.66	2.94	2.7	19.95	23.53	25.81	25.81	25.81	25.81	18.7	18.7
SPP South - Energy Price - 1H2023	3731	3/19/2033	3/19/2033	18.7	18.7	18.7	18.7	19.7	19.7	26.4	25.19	25.06	25.06	25.06	25.06	11.02	11.92	11.92	4.62	1.61	14.35	25.06	25.06	25.06	25.06	18.7	18.7
SPP South - Energy Price - 1H2023	3732	3/20/2033	3/20/2033	18.7	18.7	18.7	18.7	18.7	18.7	25.77	25.06	25.06	25.06	25.06	25.06	25.06	23.06	25.06	5.41	5.3	25.06	25.06	25.06	25.06	25.06	18.7	18.7
SPP South - Energy Price - 1H2023	3733	3/21/2033	3/21/2033	19.13	19.13	19.13	19.13	19.13	21.35	30.21	26.83	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	27.01	26.92	26.83	26.83	26.83	19.7	19.45
SPP South - Energy Price - 1H2023	3734	3/22/2033	3/22/2033	18.59	18.74	18.59	18.59	18.59	19.04	26.3	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	26.3	26.18	25.94	26.3	27.77	27.89	26.3	19.53	19.62

SPP South - Energy Price - 1H2023	3735	3/23/2033	3/23/2033	19.43	19.05	19.05	17.82	18.8	18.28	25.35	24.74	25.04	25.05	24.74	24.74	24.74	23.53	23.53	23.53	24.37	24.26	24.74	24.74	24.74	24.74	17.82	17.82
SPP South - Energy Price - 1H2023	3736	3/24/2033	3/24/2033	16.68	16.68	16.68	17.15	17.82	18.36	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	24.97	23.53	23.34	16.68	16.68
SPP South - Energy Price - 1H2023	3737	3/25/2033	3/25/2033	15.6	15.6	15.6	15.6	15.6	15.6	22.03	22.03	9.51	10.47	10.36	5.28	5.43	10.36	9.57	22.03	22.03	22.03	22.03	24.29	23.53	23.53	17.34	15.6
SPP South - Energy Price - 1H2023	3738	3/26/2033	3/26/2033	15.6	15.6	15.6	16.45	15.6	15.6	23.24	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	21.67	23.24	23.24	23.24	22.73	22.73	16.17	15.6
SPP South - Energy Price - 1H2023	3739	3/27/2033	3/27/2033	15.6	15.6	15.6	15.6	15.6	15.6	20.91	20.91	20.91	6.74	1.1	0	0.84	0	0	0.84	0.84	0.9	20.91	7.44	8.7	8.63	6.26	5.59
SPP South - Energy Price - 1H2023	3740	3/28/2033	3/28/2033	6.38	5.59	5.59	5.63	5.81	5.63	19.83	6.48	0.96	0.87	0.98	6.03	19.02	20.44	20.44	16.33	22.61	22.61	24.72	24.5	24.55	23.38	16.07	16.07
SPP South - Energy Price - 1H2023	3741	3/29/2033	3/29/2033	16.89	16.89	16.89	16.89	16.89	16.89	24.49	23.6	23.6	23.6	23.53	0.96	0.78	6.71	6.35	6.8	23.6	23.6	23.6	23.6	23.6	23.6	16.89	16.89
SPP South - Energy Price - 1H2023	3742	3/30/2033	3/30/2033	17.35	17.35	17.35	17.35	17.35	17.35	24.17	24.17	21.22	6.36	6.36	6.03	6.26	6.36	6.35	6.8	11.25	21.28	23.53	23.53	23.53	22.65	17.35	17.35
SPP South - Energy Price - 1H2023	3743	3/31/2033	3/31/2033	6.38	17.42	5.59	17.47	17.47	17.47	24.31	24.31	24.31	23.69	23.69	22.24	23.53	24.31	21.65	6.8	22.63	23.53	23.53	23.53	23.53	21.73	6.26	5.59
SPP South - Energy Price - 1H2023	3744	4/1/2033	4/1/2033	5.86	5.86	5.86	5.97	11.7	11.7	13.95	13.7	13.47	13.47	13.47	13.36	5.8	4.8	8.07	10.95	5.76	12.18	13.47	14.05	14.05	14.05	11.7	11.7
SPP South - Energy Price - 1H2023	3745	4/2/2033	4/2/2033	11.7	11.7	12.08	11.7	11.79	11.7	15.8	15.8	15.8	14.54	15.8	7.98	5.92	4.83	4.82	0.57	5.33	15.8	15.8	15.8	15.8	15.8	11.7	11.7
SPP South - Energy Price - 1H2023	3746	4/3/2033	4/3/2033	11.7	11.7	11.7	11.7	11.7	11.7	15.8	15.8	6.36	12.37	15.8	14.54	15.8	15.8	14.54	15.8	15.8	15.8	17.3	17.3	17.3	15.93	11.7	11.7
SPP South - Energy Price - 1H2023	3747	4/4/2033	4/4/2033	11.48	11.48	11.48	11.48	11.48	11.48	13.85	13.85	13.85	13.85	13.85	3.45	12.86	4.51	9.73	6.55	8.02	7.98	13.85	13.85	13.85	13.47	11.48	11.48
SPP South - Energy Price - 1H2023	3748	4/5/2033	4/5/2033	9.43	4.12	3.75	5.16	5.04	11.8	13.47	3.71	3.57	3.44	3.41	3.45	3.58	5.22	5.15	4.8	12.55	13.95	14.19	14.19	14.31	14.19	11.8	11.8
SPP South - Energy Price - 1H2023	3749	4/6/2033	4/6/2033	7.61	12.17	12.41	12.41	12.41	12.41	14.83	14.83	11.65	10.67	13.47	12.4	12.66	11.69	13.25	14.83	12.83	13.26	14.35	13.97	14.83	13.95	12.41	12.04
SPP South - Energy Price - 1H2023	3750	4/7/2033	4/7/2033	12.04	12.04	12.04	12.04	12.04	12.04	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	14.14	12.04	12.04
SPP South - Energy Price - 1H2023	3751	4/8/2033	4/8/2033	11.83	11.83	11.83	11.83	11.83	11.99	14.07	13.93	3.57	0.52	0.56	0.55	0.45	0.43	0.46	0.52	0.44	3.87	3.66	13.47	13.65	13.47	11.83	11.83
SPP South - Energy Price - 1H2023	3752	4/9/2033	4/9/2033	4.28	4.12	3.75	3.78	3.9	3.78	5.18	4.92	0.73	0	0	0	0	0	0	0	0.58	5.13	4.85	15.98	15.98	15.98	11.83	11.83
SPP South - Energy Price - 1H2023	3753	4/10/2033	4/10/2033	11.83	11.83	11.83	11.83	11.83	11.83	15.98	15.98	6.57	4.56	7.14	7.14	4.75	4.83	5.78	5.78	10.22	15.98	17.5	17.5	17.29	15.98	11.83	11.83
SPP South - Energy Price - 1H2023	3754	4/11/2033	4/11/2033	11.78	11.78	11.78	11.78	11.78	11.78	13.87	13.87	13.87	13.47	7.22	7.21	3.58	3.64	3.64	4.81	4.02	12.08	13.57	13.87	13.87	13.87	11.78	11.78
SPP South - Energy Price - 1H2023	3755	4/12/2033	4/12/2033	11.95	11.95	5.93	9.1	11.95	11.95	14.06	14.05	14.05	5.84	5.7	3.45	3.58	3.64	3.64	3.89	4.02	13.33	14.06	14.09	14.06	14.06	11.95	11.95
SPP South - Energy Price - 1H2023	3756	4/13/2033	4/13/2033	12.13	12.13	12.13	12.13	12.13	12.13	14.23	3.71	0.55	3.44	0.56	3.45	0.45	3.44	3.64	5.24	5.24	14.23	14.23	14.23	13.89	13.47	12.13	12.13
SPP South - Energy Price - 1H2023	3757	4/14/2033	4/14/2033	11.88	11.88	11.88	11.88	11.88	11.88	13.47	3.71	3.57	3.44	3.41	3.45	3.58	3.64	3.58	3.89	3.98	3.87	3.66	13.47	13.47	13.98	11.88	11.88
SPP South - Energy Price - 1H2023	3758	4/15/2033	4/15/2033	11.63	11.63	11.63	11.63	12.73	12.73	14.82	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.72	13.87	14.27	13.72	12.58	11.63
SPP South - Energy Price - 1H2023	3759	4/16/2033	4/16/2033	11.63	11.63	11.63	11.63	11.63	11.97	17.08	15.71	15.71	15.71	15.71	15.71	15.71	6.36	6.96	14.51	15.71	15.71	15.71	15.71	14.78	15.71	10.7	11.63
SPP South - Energy Price - 1H2023	3760	4/17/2033	4/17/2033	11.63	11.63	11.63	11.63	11.63	11.63	15.71	15.71	14.45	4.63	6.01	15.71	15.71	14.45	15.71	16.19	16.21	16.24	17.2	16.17	15.71	15.71	11.63	11.63
SPP South - Energy Price - 1H2023	3761	4/18/2033	4/18/2033	11.39	11.39	11.39	11.39	11.39	11.81	13.76	13.47	13.46	13.46	13.46	13.46	13.46	13.46	13.46	13.46	13.47	13.67	13.95	14.29	14.18	13.95	12.46	11.75
SPP South - Energy Price - 1H2023	3762	4/19/2033	4/19/2033	12.68	12.55	12.7	12.7	12.7	12.7	14.33	13.69	13.69	13.69	13.69	13.69	13.69	13.47	13.69	13.47	13.69	13.69	13.95	13.96	13.95	13.95	12.19	12.09
SPP South - Energy Price - 1H2023	3763	4/20/2033	4/20/2033	11.36	12.24	12	12.43	12.43	12.43	14.28	14.29	13.44	13.44	13.44	13.44	13.44	12.15	11.88	13.44	11.12	13.44	13.44	13.44	13.44	13.44	11.17	11.17
SPP South - Energy Price - 1H2023	3764	4/21/2033	4/21/2033	11.17	11.17	11.17	11.17	11.17	11.17	13.24	13.24	13.24	13.24	11.43	11.43	11.43	3.64	3.64	11.43	11.54	12.93	13.24	13.24	13.24	13.24	11.17	11.17
SPP South - Energy Price - 1H2023	3765	4/22/2033	4/22/2033	11.13	11.13	11.13	11.13	11.13	11.13	13.2	13.2	13.2	13.2	13.2	13.2	13.09	12.15	11.74	13.2	13.2	13.1	13.2	13.2	13.2	4.4	4.21	3.75
SPP South - Energy Price - 1H2023	3766	4/23/2033	4/23/2033	4.28	4.12	3.75	3.78	3.9	3.78	5.18	4.92	4.74	4.56	4.53	4.58	4.74	4.74	4.81	5.06	5.33	5.13	4.85	15.04	15.04	15.04	11.13	11.13
SPP South - Energy Price - 1H2023	3767	4/24/2033	4/24/2033	11.13	11.13	11.13	11.13	11.13	11.13	15.04	12.75	4.74	4.56	4.53	12.71	12.82	12.71	13.82	12.71	15.04	15.04	15.04	16.45	16.45	15.16	11.13	11.13
SPP South - Energy Price - 1H2023	3768	4/25/2033	4/25/2033	11.55	11.55	11.55	11.55	11.55	11.55	11.87	9.98	1.91	1.83	2.07	2.41	10.59	10.74	13.61	13.47	13.61	13.61	13.61	13.63	13.61	13.61	11.55	11.55
SPP South - Energy Price - 1H2023	3769	4/26/2033	4/26/2033	11.75	11.75	11.75	11.75	11.75	11.75	13.82	13.82	13.82	13.82	13.82	15.12	15.45	15.76	15.76	15.76	15.96	15.76	15.76	15.76	15.76	15.76	13.22	12.87
SPP South - Energy Price - 1H2023	3770	4/27/2033	4/27/2033	12.75	11.94	11.74	11.65	11.82	11.94	14.06	14.08	13.89	13.97	14.2	13.71	14.3	14.31	14.3	14.72	14.31	14.31	14.81	15.1	14.31	14.1	11.65	11.65
SPP South - Energy Price - 1H2023	3771	4/28/2033	4/28/2033	11.29	11.3	11.29	11.29	11.43	11.82	14.21	13.33	13.33	13.33	12.72	13.33	13.33	13.33	13.1	1.95	4.19	13.33	13.33	13.33	13.33	13.33	11.29	11.29
SPP South - Energy Price - 1H2023	3772	4/29/2033	4/29/2033	11.08	11.08	11.08	11.08	11.21	11.08	13.12	11.19	1.91	1.24	2.07	2.41	2.74	2.74	2.74	6.95	13.12	13.12	12.07	13.12	13.12	13.12	11.08	11.08
SPP South - Energy Price - 1H2023	3773	4/30/2033	4/30/2033	11.08	11.08	11.08	11.08	11.08	11.33	15.38	14.97	5.56	5.56	3.48	4.64	3.63	6.05	5.56	9.11	9.61	14.97	14.97	14.97	14.97	14.97	11.08	11.08
SPP South - Energy Price - 1H2023	3774	5/1/2033	5/1/2033	13.72	13.72	13.72	13.72	13.72	13.72	16.6	4.46	3.02	2.89	4.83	3.81	4.46	5.2	6.47	16.6	16.6	16.6	16.6	16.6	16.99	16.74	13.91	13.83
SPP South - Energy Price - 1H2023	3775	5/2/2033	5/2/2033	12.94	12.94	12.94	12.94	13.41	13.91	19.38	16.93	2.98	5.17	4.76	3.48	3.96	4.76	5.42	1.42	6.06	6.52	16.93	16.93	16.97	16.93	12.95	12.95
SPP South - Energy Price - 1H2023	3776	5/3/2033	5/3/2033	12.95	12.95	12.95	13.2	13.43	13.67	18.11	16.95	16.95	16.95	16.95	16.95	16.95	16.95	16.95	15.59	16.95	16.95	16.95	16.95	16.95	16.95	12.95	12.95
SPP South - Energy Price - 1H2023	3777	5/4/2033	5/4/2033	13.52	13.52	13.52	13.52	13.52	13.81	17.59	17.59	17.58	17.58	17.58	17.59	17.58	17.58	17.58	17.58	11.44	17.59	17.59	19.47	19.47	17.59	13.52	13.52
SPP South - Energy Price - 1H2023	3778	5/5/2033	5/5/2033	14.08	14.08	14.08	14.08	14.08	14.69	18.22	6.5	4.76	2.64	2.99	3.48	3.96	4.76	5.42	6.09	6.06	6.52	18.22	18.22	18.22	18.22	14.08	14.08
SPP South - Energy Price - 1H2023	3779	5/6/2033	5/6/2033	14.05	14.05	14.05	14.05	14.05	14.39	18.19	18.19	18.19	18.19	18.19	18.19	18.61	18.19	18.19	18.19	18.19	18.19	18.19	18.19	18.19	18.57	14.28	14.05
SPP South - Energy Price - 1H2023	3780	5/7/2033	5/7/2033	14.05	14.05	14.05	14.05	14.23	14.39	17.5	17.45	17.46	17.14	17	17	17	17	17	17	17	17	17	17.46	18.58	17.46	15.27	14.05
SPP South - Energy Price - 1H2023	3781	5/8/2033	5/8/2033	14.05	14.05	14.05	14.05	14.23	14.39	17.5	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14.05	14.05
SPP South - Energy Price - 1H2023	3782	5/9/2033	5/9/2033	14.12	14.12	14.12	14.12	14.12	14.12	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	18.26	14.12	14.12
SPP South - Energy Price - 1H2023	3783	5/10/2033	5/10/2033	14.3	14.3	14.3	14.3	14.3	14.3	18.47	17.65	17.65	17.65	2.99	5.2	7.32	18.47	18.47	18.63	18.47	18.47	18.47	18.48	18.72	18.47	14.3	14.3
SPP South - Energy Price - 1H2023	3784	5/11/2033	5/11/2033	14.51	14.51	14.51	14.51	14.51	14.79	18.71	18.71	18.71	18.71	18.71	18.71	18.84	19.15	18.71	19.15	18.71	18.8	19.15	20.11	19.88	19.65	14.66	14.51
SPP South - Energy Price - 1H2023	3785	5/12/2033	5/12/2033	14.66	14.71	14.66	14.66	14.66	15.05	18.88	18.88	18.88	19.47	18.88	19.47	20.16	19.92	20.19	21.56	19.47	21.16	21.56	21.56	21.56	20.93	16.04	14.96
SPP South - Energy Price - 1H2023	3786	5/13/2033	5/13/2033	14.96	14.94	14.96	14.62	14.84	15	19.47	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	19.96	19.95	20.18	21.5	21.5	20.14	15.99	15.99
SPP South - Energy Price - 1H2023	3787	5/14/2033	5/14/2033	15.98	15.1	14.62	14.62	14.62	14.62	17.68	18.18	19.22	19.34	19.34	19.34	19.22	17.68	17.68	17.68	17.68	17.68	17.68	19.34	19.34	17.68	14.62	14.62
SPP South - Energy Price - 1H2023	3788	5/15/2033	5/15/2033	14.62	14.62	14.62	14.62	14.62	14.62	17.68	17.68	17.68	17.68	7.71	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	17.68	14.62	14.62
SPP South - Energy Price - 1H2023	3789	5/16/2033	5/16/2033	15.1	15.1	15.1	15.1	15.1	15.52	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.38	19.47	19.38	15.1	15.1
SPP South - Energy Price - 1H2023	3790	5/17/2033	5/17/2033	15.3	15.3	15.3	15.3	15.3	15.3	19.47	19.47	19.47	19.47	19.29	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.6	19.6	19.6	15.3	15.3
SPP South - Energy Price - 1H2023	3791	5/18/2033	5/18/2033	4.82	4.43	4.12	3.9	3.9	4.24	4.7	3.2	2.76	2.64	2.99	3.48	3.96	4.76	5.42	6.09	6.06	5.6	19.28	19.28	19.28	19.28	15.02	15.02
SPP South - Energy Price - 1H2023	3792	5/19/2033	5/19/2033	14.84	13.84	13.84	14.84	14.84	14.84	16.65	3.2	2.76	2.64	2.99	3.48	3.96	19.08	19.08	18.79	19.08	19.08	19.08	19.08	19.11	19.08	14.84	14.84
SPP South - Energy Price - 1H2023	3793	5/20/2033	5/20/2033	14.26	14.26	14.26	14.26	14.26	14.26	18.43	18.43	18.43	18.43	18.43	18.43	18.43	16.95	17.98	18.43	18.43	18.43	18.43	18.43	18.43	14.52	13.12	14.26
SPP South - Energy Price - 1H2023	3794	5/21/2033	5/21/2033	4.82	4.43	4.43	4.81	4.43	4.81	5.05	3.5	4.56	2.89	5.72	17.25	17.25	17.25	17.26	18.78	18.86	18.86	18.86	18.86	17.38	17.26	14.26	14.26
SPP South - Energy Price - 1H2023	3795	5/22/2033	5/22/2033	14.26	14.26	14.06	14.26	14.26	14.26	17.25	17.25	7.15	17.26	17.26	17.26	17.26	17.26	17.25	12.81	8.09	17.25	17.26	17.89	17.26	17.76	14.26	14.26
SPP South - Energy Price - 1H2023	3796	5/23/2033	5/23/2033	12.69	12.69	12.69	12.69	12.69	12.69	14.55	14.04	14.04	14.55	16.65	16.65	16.65	16.65	16.77	16.65	19.06	17.78	17.43	19.06	17.78	16.65	13.23	12.69
SPP South - Energy Price - 1H2023	3797	5/24/2033	5/24/2033	14.78	14.78	14.78	14.78	15.02	14.78	19.01	19.01	19.01	19.01	19.19	19.08	20.64	19.01	19.01	19.14	19.01	20.65	20.65	21.14	21.01	21.37	16.16	14.78
SPP South - Energy Price - 1H2023	3798	5/25/2033	5/25/2033	15.31	15.78	16.3	15.78	15.59	16.25	19.61	19.61	19.61	19.61	20.37	19.61	19.61	19.7	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	15.31	15.31
SPP South - Energy Price - 1H2023	3799	5/26/2033	5/26/2033	15.41	15.41	6.75	15.41	15.41	15.41	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	19.72	15.41	15.41
SPP South - Energy Price - 1H2023	3800	5/27/2033	5/27/2033	15.68	15.68	15.68	5.86	15.68	15.68	20.03	20.03	20.03	17.51	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	15.68	15.68
SPP South - Energy Price - 1H2023	3801	5/28/2033	5/28/2033	15.68	15.68	15.68	15.68	15.68	15.68	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	20.38	19.8	20.62	20.16	15.68	15.69
SPP South - Energy Price - 1H2023	3802	5/29/2033	5/29/2033	15.68	15.68	15.68	15.69	16.78	16.2	19.55	18.97	18.97	18.97	18.97	20.16	20.16	20.16	20.37	20.62	20.77	20.77	20.38	19.8	20.62	18.97	15.68	15.68
SPP South - Energy Price - 1H2023	3803	5/30/2033	5/30/2033	15.68	15.68	15.68	15.68	15.68	15.68	19.64	17.36	7.82	9.56	17.36	19.47	19.47	19.47	20.03	20.03	20.03	20.03	20.03	20.47	20.03	20.03	15.68	15.68
SPP South - Energy Price - 1H2023	3804	5/31/2033	5/31/2033	15.18	15.18	15.18	15.18	15.28	15.42	19.46	19.46	19.46	19.46	19.46	19.46	19.47	19.47	19.47	20.23	19.47	20.38	22.21	22.21	22.21	21.01	16.61	16.61
SPP South - Energy Price - 1H2023	3805	6/1/2033	6/1/2033	22.88	22.88	22.88	22.88	22.88	22.88	24.82	23.15	23.15	23.15	23.15	23.15	24.41	23.15	24.82	25.81	24.82	25.81	24.85	23.15	23.15	23.15	20.96	20.96
SPP South - Energy Price - 1H2023	3806	6/2/2033	6/2/2033	19.98	19.98	19.98	19.98	19.98	19.98	22.22	22.22	22.22	22.22	22.22	22.22	22.22	20.67	22.22	22.22	22.22	22.22	22.22	22.22	22.22	22.22	19.82	9.17
SPP South - Energy Price - 1H2023	3807	6/3/2033	6/3/2033	19.82	19.82	19.82	7.82	19.82	19.83	22.07	22.07	22.07	22.07	22.07	22.66	22.07	23.07	24.19	22.07	22.07	22.07	23.77	23.07	23.73	24.84	20.01	19.83
SPP South - Energy Price - 1H2023	3808	6/4/2033	6/4/2033	19.83	19.82	19.82	19.83	19.83	19.83	19.86	19.86	19.86	19.86	19.86	19.86	21.35	21.66	21.66	21.66	21.66	21.66	19.86	19.86	20.29	20.23	19.83	19.83
SPP South - Energy Price - 1H2023	3809	6/5/2033	6/5/2033	19.83	19.83	19.83	19.83	20.47	19.9	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86	20.96	20.23	21.59	19.83	20.27
SPP South - Energy Price - 1H2023	3810	6/6/2033	6/6/2033	21.72	21.72	21.72	21.72	21.72	21.93	24.06	25.14	25.26	25.81	25.99	25.99	25.81	25.81	23.91	25.81	25.81	24.08	27.29	26.13	26.03	25.99	23.01	23.73
SPP South - Energy Price - 1H2023	3811	6/7/2033	6/7/2033	23.97	24.03	23.97	23.59	23.97	23.97	27.29	27.97	27.85	27.39	28.36	28.32	27.39	29.3	29.66	29.66	29.66	29.3	29.56	33.09	31.55	29.66	26.45	23.59
SPP South - Energy Price - 1H2023	3812	6/8/2033	6/8/2033	24.19	24.19	25.32	25.64	25.94	25.64	27.41	28.82	29.94	29.94	30.32	30.32	30.32	30.32	33.95	33.95	31.33	30.68	30.32	31.6	31.33	30.32	27.05	26.48
SPP South - Energy Price - 1H2023	3813	6/9/2033	6/9/2033	25.92	25.92	25.92	25.92	25.92	25.92	26.46	27.39	27.39	28.36	29.4	29.4	29.76	29.76	30.89	33.27	33.27	30.64	30.89	30.98	30.21	29.4	23.91	23.72
SPP South - Energy Price - 1H2023	3814	6/10/2033	6/10/2033	23.76	23.72	23.72	23.72	23.72	23.76	24.01	24.11	23.91	23.91	23.91	23.91	23.91	24.21	23.91	23.91	23.91	23.91	23.91	26.61	25.69	24.88	23.77	22.31
SPP South - Energy Price - 1H2023	3815	6/11/2033	6/11/2033	21.75	21.75	21.75	21.75	21.75	21.75	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	22.26	21.79	21.79	23.68	23.68	22.26	21.79	21.75	21.75
SPP South - Energy Price - 1H2023	3816	6/12/2033	6/12/2033	21.75	21.75	21.75	21.75	21.75	21.75	21.79	21.78	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	21.79	23.8	23.8	21.75	21.75
SPP South - Energy Price - 1H2023	3817	6/13/2033	6/13/2033	23.77	23.77	23.77	23.77	23.77	23.77	25.63	20.74	22.55	20.74	22.55	20.74	22.55	25.52	25.84	22.55	25.81	25.84	25.84	25.84	25.84	25.84	23.77	23.77

SPP South - Energy Price - 1H2023	3818	6/14/2033	6/14/2033	20.95	7.37	7.37	3.88	8.02	22.81	2.95	2.2	1.98	6.92	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	22.82	22.82
SPP South - Energy Price - 1H2023	3819	6/15/2033	6/15/2033	21.8	21.8	21.8	21.8	21.8	21.8	23.96	23.96	22.04	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	24.23	23.96	23.83	21.8
SPP South - Energy Price - 1H2023	3820	6/16/2033	6/16/2033	23.07	23.07	23.07	23.07	23.07	23.07	25.17	25.17	25.17	25.17	25.18	25.17	25.18	25.18	25.18	25.18	25.18	25.18	25.18	25.22	27.42	27.26	24.62	23.63
SPP South - Energy Price - 1H2023	3821	6/17/2033	6/17/2033	23.58	23.95	23.52	23.52	23.79	23.9	25.7	25.64	25.6	25.6	27.09	26.67	27.43	27.43	28.38	29.22	29.22	28.38	29.22	29.58	29.58	28.49	26.37	26.14
SPP South - Energy Price - 1H2023	3822	6/18/2033	6/18/2033	25.73	24.1	23.87	23.67	23.87	23.9	23.88	23.91	24.5	25.77	25.99	26.49	26.49	26.49	25.97	23.91	23.55	23.91	26.49	26.49	23.71	23.55	25.73	25.33
SPP South - Energy Price - 1H2023	3823	6/19/2033	6/19/2033	24.22	23.95	23.56	23.52	23.62	23.87	23.78	23.91	24.03	26.09	26.16	26.49	26.49	27.54	26.49	25.77	26.49	26.71	26.49	27.42	27.54	26.85	26.45	25.73
SPP South - Energy Price - 1H2023	3824	6/20/2033	6/20/2033	26.57	26.57	25.3	25.3	25.3	26.57	27.36	27.47	27.19	26.32	26.32	26.92	26.32	27.06	26.32	26.32	26.32	26.32	27.47	30.03	31.79	28.41	27.13	26.57
SPP South - Energy Price - 1H2023	3825	6/21/2033	6/21/2033	26.88	26.88	26.57	24.7	26.29	25.99	28.31	28.4	29.88	28.41	27.62	27.49	30.71	30.71	30.71	30.32	29.53	30.32	30.32	30.4	30.32	30.33	27.5	27.49
SPP South - Energy Price - 1H2023	3826	6/22/2033	6/22/2033	27.5	27.75	27.5	27.5	27.38	27.5	27.72	28.72	28.43	27.75	30.81	27.61	28.44	28.87	31.21	30.63	30.81	29.66	30.81	31.21	35.03	32.52	28.71	27.69
SPP South - Energy Price - 1H2023	3827	6/23/2033	6/23/2033	27.67	27.67	27.61	27.67	27.5	27.5	29	31.09	31.08	31.09	31.5	31.08	31.5	31.5	32.76	31.67	31.5	31.85	35.05	35.38	36.1	33.5	30.34	28.45
SPP South - Energy Price - 1H2023	3828	6/24/2033	6/24/2033	27.4	27.4	27.4	27.4	27.4	27.4	30.05	30.05	28.56	30.1	30.1	30.1	30.1	30.13	30.49	32.69	29.34	30.49	30.49	30.49	30.48	30.1	27.4	27.28
SPP South - Energy Price - 1H2023	3829	6/25/2033	6/25/2033	27.4	26.89	26.65	26.65	26.65	26.22	25.77	26.69	26.74	26.69	26.69	26.69	27.44	27.54	27.7	27.44	26.69	27.44	27.44	26.69	27.44	26.69	24.52	24.92
SPP South - Energy Price - 1H2023	3830	6/26/2033	6/26/2033	24.52	24.87	24.34	26.1	25.64	24.91	24.8	24.38	24.56	24.38	24.56	25.59	26.51	26.69	26.69	26.69	26.69	27.44	26.69	26.69	26.69	26.69	24.34	24.34
SPP South - Energy Price - 1H2023	3831	6/27/2033	6/27/2033	23.47	22.97	22.97	22.97	22.97	23.83	25.38	25.81	25.81	25.81	25.08	26.88	25.81	26.88	26.88	25.81	25.08	25.08	25.08	25.08	25.08	25.08	22.97	22.97
SPP South - Energy Price - 1H2023	3832	6/28/2033	6/28/2033	23.15	23.15	23.15	23.15	23.15	23.15	25.26	25.26	25.26	26.83	26.52	25.81	27.06	27.06	28.28	27.72	27.72	27.36	25.51	27.72	28.34	27.72	25.33	25.33
SPP South - Energy Price - 1H2023	3833	6/29/2033	6/29/2033	25.84	24.75	24.02	25.84	25.84	25.84	27.16	25.69	25.69	25.69	25.69	27.39	27.4	27.4	27.38	25.69	27.4	25.69	25.91	26.6	27.22	26.38	24.57	24.14
SPP South - Energy Price - 1H2023	3834	6/30/2033	6/30/2033	22.41	21.9	21.84	21.59	22.05	21.73	23.76	23.76	23.76	23.76	23.76	23.76	24.56	25.81	26.29	27.15	23.76	23.76	27.15	25.81	24.14	25.81	21.64	21.59
SPP South - Energy Price - 1H2023	3835	7/1/2033	7/1/2033	36.73	37.56	37.56	37.56	37.56	37.56	40.99	39.07	42.49	42.49	41.24	42.49	42.98	42.98	44.15	42.98	42.81	47.85	49.57	45.93	44.98	42.77	38.6	38.54
SPP South - Energy Price - 1H2023	3836	7/2/2033	7/2/2033	38.19	37.56	36.33	37.56	38.42	37.56	41.64	41.64	42.25	41.64	41.64	42.79	46.6	46.6	45.26	47.08	45.26	46.6	42.79	41.64	42.79	42.79	38.6	37.57
SPP South - Energy Price - 1H2023	3837	7/3/2033	7/3/2033	37.56	37.56	37.56	37.56	37.56	37.56	38.79	40.34	39.18	41.64	40.08	41.64	42.79	42.79	42.79	43.69	42.79	41.64	43.48	42.98	43.9	44.17	39.85	37.56
SPP South - Energy Price - 1H2023	3838	7/4/2033	7/4/2033	37.56	37.56	37.56	37.56	37.56	37.74	40.22	39.62	38.11	41.33	41.35	42.98	47.85	47.85	49.33	48.84	45.39	44.84	47.85	42.65	46.36	45.09	38.6	38.64
SPP South - Energy Price - 1H2023	3839	7/5/2033	7/5/2033	41.48	40.44	37.71	37.63	40.45	40.44	44.65	44.6	45.23	51.28	50.75	51	54.02	53.65	53.53	58	56.4	57.09	58.8	51.89	56.4	55.17	53.19	49.48
SPP South - Energy Price - 1H2023	3840	7/6/2033	7/6/2033	47.02	42.22	41.77	41.15	41.15	42.04	44.84	45.4	50.79	49.3	54.23	54.23	53.48	53.2	52.71	52.36	49.89	54.23	58.78	57.62	53.63	54.12	46.92	43.25
SPP South - Energy Price - 1H2023	3841	7/7/2033	7/7/2033	42.04	40	40	40.34	40.44	42.04	43.78	43.78	44.31	43.78	44.31	43.78	48.16	44.31	56.7	52.01	57.45	56.53	57.56	57.22	52.01	56.53	49	42.72
SPP South - Energy Price - 1H2023	3842	7/8/2033	7/8/2033	42.04	42.04	40.6	40.47	39.68	39.57	42.41	42.94	43.31	44.92	47.73	47.65	51.26	50.97	50.76	51.47	57.39	52.28	52.77	52.28	52.28	52.28	53.81	49.54
SPP South - Energy Price - 1H2023	3843	7/9/2033	7/9/2033	45.3	43.53	42.04	42.04	42.04	42.04	43.87	43.87	42.68	43.86	43.87	45.14	44.27	43.87	48.26	46.6	46.6	52.22	57.89	57.74	56.41	52.93	44.43	41.95
SPP South - Energy Price - 1H2023	3844	7/10/2033	7/10/2033	42	39.57	39.57	39.57	39.57	39.57	43.55	43.42	43.26	43.21	43.86	43.87	44.27	45	46.6	44.63	48.26	46.6	46.6	52.12	46.6	46.6	39.67	39.57
SPP South - Energy Price - 1H2023	3845	7/11/2033	7/11/2033	40.78	39.67	39.67	39.67	39.67	39.67	44.49	43.27	42.1	43.61	43.61	43.43	43.61	39.56	42.9	43.61	40.12	42.9	43.81	43.61	43.81	44.49	39.67	39.67
SPP South - Energy Price - 1H2023	3846	7/12/2033	7/12/2033	39.24	40.08	40.23	37.84	38.12	40.23	44.45	45.03	43.11	42.3	45.03	45.59	45.59	45.59	47.09	50.96	45.59	46.35	45.93	46.35	46.35	45.03	41.13	41.13
SPP South - Energy Price - 1H2023	3847	7/13/2033	7/13/2033	41.13	41.13	41.13	41.13	41.13	41.13	44.03	43.86	41.14	42.88	40.87	42.45	43.63	44.16	41.68	45.36	45.36	45.36	47.1	45.93	44.59	45.36	40.04	40.28
SPP South - Energy Price - 1H2023	3848	7/14/2033	7/14/2033	40.62	40.04	39.87	40.04	40.04	40.04	41.25	41.55	40.91	41.55	45.73	46.64	44.81	46.64	45.62	46.18	43.02	41.62	45.73	50.49	41.65	48.42	42.71	42.04
SPP South - Energy Price - 1H2023	3849	7/15/2033	7/15/2033	41.82	37.52	37.16	37.16	37.83	40.54	41.48	44.82	43.89	44.66	45.45	45.37	45.45	46.03	46.03	43.86	45.45	46.03	46.89	48.12	48.36	50.11	43.53	41.86
SPP South - Energy Price - 1H2023	3850	7/16/2033	7/16/2033	40.68	40.68	40.68	39.79	39.7	39.2	43.78	43.48	43.63	43.54	43.18	42.69	45.09	45.09	45.09	45.09	46.36	46.29	48.26	46.6	46.36	46.36	40.87	40.68
SPP South - Energy Price - 1H2023	3851	7/17/2033	7/17/2033	38.62	37.16	37.56	37.16	38.55	38.19	41.19	41.57	42.28	41.62	41.57	44.52	44.05	41.57	41.57	45.09	43.26	41.57	45.09	46.13	48.94	46.78	41.82	41.82
SPP South - Energy Price - 1H2023	3852	7/18/2033	7/18/2033	40.62	40.08	39.09	39.69	39.79	39.32	41.64	43.31	43.86	43.05	46.1	45.98	49.58	51.42	51.27	50.81	49.67	51.67	51.9	52.17	52.39	52.48	47.76	45.42
SPP South - Energy Price - 1H2023	3853	7/19/2033	7/19/2033	41.7	41.7	40.48	40.47	40.5	40.5	43.71	44.78	44.78	45.83	44.24	48.1	48.56	50.04	49.85	49.73	50.15	46.03	52.39	50.04	48.62	50.33	44.43	40.29
SPP South - Energy Price - 1H2023	3854	7/20/2033	7/20/2033	38.84	38.84	38.84	38.84	38.84	37.06	38.87	38.28	39.74	38.28	41	43.7	43.7	38.28	43.7	43.7	43.7	43.7	46.69	47.44	41.47	43.7	39.92	38.84
SPP South - Energy Price - 1H2023	3855	7/21/2033	7/21/2033	38.05	38.05	38.05	38.05	38.05	38.05	41.01	40.78	41.35	41.83	42.76	43.45	42.95	43.45	46.73	43.73	42.95	42.95	46.19	46.97	48.34	47.44	42.32	39.1
SPP South - Energy Price - 1H2023	3856	7/22/2033	7/22/2033	37.67	37.86	38.51	37.67	38.51	37.84	41.33	42.59	42.73	43.25	44.83	47.12	43.08	43.08	45.26	45.26	43.08	45.26	47.97	45.75	45.26	43.08	38.71	38.71
SPP South - Energy Price - 1H2023	3857	7/23/2033	7/23/2033	38.71	38.71	38.3	38.54	38.71	38.71	42.46	42.52	41.75	42.46	42.62	43.05	44.78	42.91	45.99	46.15	44.47	43.55	46.6	43.55	43.55	42.91	37.67	37.67
SPP South - Energy Price - 1H2023	3858	7/24/2033	7/24/2033	37.67	37.67	35.13	37.67	38.19	34.67	38.32	40.44	38.19	38.19	38.19	41.75	42.91	42.91	44.83	45.22	45.22	43.9	43.55	42.91	42.91	45.22	38.71	38.71
SPP South - Energy Price - 1H2023	3859	7/25/2033	7/25/2033	37.53	35.28	37.53	37.53	37.53	37.71	41	37.72	37.17	39.89	39.89	42.46	42.94	42.46	42.72	42.72	43.31	43.8	49.13	46.63	42.94	42.94	41.31	37.53
SPP South - Energy Price - 1H2023	3860	7/26/2033	7/26/2033	37.82	38.72	37.82	37.82	37.82	37.82	40.24	41.09	37.8	41.01	42.7	41.34	43.42	43.42	43.23	43.42	43.23	43.42	48.15	44.65	43.42	43.23	38.86	39.96
SPP South - Energy Price - 1H2023	3861	7/27/2033	7/27/2033	39.71	38.86	38.19	35.55	38.19	38.19	41.06	41.89	42.1	43.59	43.6	46.95	43.6	48.6	48.6	48.6	48.6	48.6	50.1	48.09	48.5	43.09	40.56	40.3
SPP South - Energy Price - 1H2023	3862	7/28/2033	7/28/2033	38.59	39.42	39.67	39.67	39.67	40.03	43.99	43.47	41.17	43.99	43.99	52.56	55.63	56.16	55.28	54.88	50.49	51.14	54.88	54.88	52.57	49.07	40.56	40.65
SPP South - Energy Price - 1H2023	3863	7/29/2033	7/29/2033	39.32	40.65	39.32	39.47	42.04	42.04	43.15	43.15	43.66	46.68	43.66	43.16	48.67	50.44	56.13	56.65	50.44	49.89	50.44	50.44	48.58	45.18	40.13	38.26
SPP South - Energy Price - 1H2023	3864	7/30/2033	7/30/2033	38.26	38.26	38.26	38.26	38.26	35.49	42.41	43.58	43.59	44.14	46.76	47.99	49.37	50.24	49.37	51.77	49.37	46.6	51.56	45.13	43.58	44.27	39.32	38.26
SPP South - Energy Price - 1H2023	3865	7/31/2033	7/31/2033	38.26	38.26	38.26	36.24	38.26	38.26	41.15	40.63	38.78	38.78	41.15	43.58	43.49	44.62	46.6	45.99	46.6	46.92	48.26	51.77	51.77	46.92	40.13	39.32
SPP South - Energy Price - 1H2023	3866	8/1/2033	8/1/2033	37.68	37.68	37.56	36.68	36.68	37.68	42.8	43.24	42.8	43.24	43.85	47.89	45.97	48.75	49.12	49.83	54.87	55.43	54.24	56.39	49.83	49.83	43.81	43.81
SPP South - Energy Price - 1H2023	3867	8/2/2033	8/2/2033	43.81	43.81	43.28	43.28	43.28	43.81	48.67	48.06	48.06	48.67	49.68	54.48	61.59	62.57	62.92	63.83	63.69	64.1	64.3	63.22	62.44	57.36	51.5	46.27
SPP South - Energy Price - 1H2023	3868	8/3/2033	8/3/2033	44.07	42.86	42.86	42.86	43.81	44.07	48.8	48.8	46.77	49.43	49.43	54.46	55.41	55.41	55.83	56.23	56.37	57.41	57.28	57.98	58.03	52.25	45.22	43.81
SPP South - Energy Price - 1H2023	3869	8/4/2033	8/4/2033	43.81	43.81	42.3	41.84	43.37	43.37	49.3	47.57	49.94	49.3	49.94	49.94	49.94	55.34	49.3	56.03	56.03	56.66	56.35	56.03	49.94	49.94	43.81	43.81
SPP South - Energy Price - 1H2023	3870	8/5/2033	8/5/2033	43.81	43.71	43.81	43.12	43.81	44.33	45.73	45.63	44.97	45.63	47.2	46.41	49.05	49.69	49.69	49.69	49.05	49.69	55.72	55.62	49.69	49.69	44.33	43.28
SPP South - Energy Price - 1H2023	3871	8/6/2033	8/6/2033	43.81	43.71	43.34	43.12	42.34	42.34	39.04	38.57	39.69	39.69	39.87	40.42	41.07	41.07	41.07	41.07	41.07	41.56	41.07	41.56	42.53	41.56	44.33	44.33
SPP South - Energy Price - 1H2023	3872	8/7/2033	8/7/2033	43.81	43.81	44.15	43.81	43.12	43.12	40.42	40.42	39.69	40.42	41.02	41.07	41.07	41.56	41.07	41.07	41.56	43.1	44.66	45.8	44.86	41.56	43.81	43.81
SPP South - Energy Price - 1H2023	3873	8/8/2033	8/8/2033	43.53	43.53	43.53	43.53	43.53	43.81	48.5	49.45	49.09	49.68	49.45	50.1	50.1	50.1	56.22	51.92	51.92	52.05	51.92	54.14	51.92	49.45	43.81	43.53
SPP South - Energy Price - 1H2023	3874	8/9/2033	8/9/2033	43.81	43.3	42.93	42.65	43.44	42.97	47.85	48.6	46.83	47.01	48.6	49.22	49.22	49.22	51.89	54.06	49.22	48.6	48.6	48.6	49.22	48.6	43.81	43.81
SPP South - Energy Price - 1H2023	3875	8/10/2033	8/10/2033	36.74	35.78	36.74	36.24	35.78	35.78	39.24	38.88	36.64	36.64	36.64	39.83	39.24	36.64	41.92	41.12	41.92	41.92	42.34	42.34	41.92	41.43	35.78	34.64
SPP South - Energy Price - 1H2023	3876	8/11/2033	8/11/2033	32.1	32.1	32.1	32.1	32.1	32.1	34.1	33.63	33.45	36.09	35.68	36.07	37.98	38.35	38.66	38.66	38.66	38.66	38.66	39.59	38.66	38.35	32.95	32.95
SPP South - Energy Price - 1H2023	3877	8/12/2033	8/12/2033	31.76	31.76	31.76	31.76	31.76	31.76	35.86	37.58	34.58	36.65	35.38	35.78	37.98	38.02	38.02	38.02	38.02	38.32	41.05	38.69	38.02	38.02	31.76	31.76
SPP South - Energy Price - 1H2023	3878	8/13/2033	8/13/2033	31.76	31.76	31.76	31.76	31.76	31.76	29.77	29.77	29.77	29.77	29.77	32.88	33	36	36	36	36	36	32.22	31.93	30.55	30.55	31.76	31.76
SPP South - Energy Price - 1H2023	3879	8/14/2033	8/14/2033	31.76	31.76	31.76	31.76	31.43	31.43	29.47	29.47	28.71	29.77	29.47	29.77	29.36	30.55	30.55	30.55	29.77	29.77	32.13	36	32.32	30.62	32.59	32.59
SPP South - Energy Price - 1H2023	3880	8/15/2033	8/15/2033	37.78	37.78	36.78	36.78	36.61	36.78	41.51	39.76	39.46	39.29	41.51	42.9	43.32	42.9	43.34	43.34	43.34	43.34	43.87	43.87	43.94	43.35	37.79	37.78
SPP South - Energy Price - 1H2023	3881	8/16/2033	8/16/2033	43.81	42.99	42.99	42.71	42.18	42.99	44.14	43.85	44.14	45.53	45.14	48.51	45.71	48.92	48.92	49.56	48.92	49.56	55.56	53.77	51.39	49.56	43.81	43.81
SPP South - Energy Price - 1H2023	3882	8/17/2033	8/17/2033	44.15	44.15	44.15	43.81	43.23	43.81	47.73	45.7	43.91	44.39	45.35	45.6	48.56	50.06	51.22	51.28	50.73	50.73	59.12	59.7	55.72	50.56	44.15	43.81
SPP South - Energy Price - 1H2023	3883	8/18/2033	8/18/2033	43.81	43.81	43.81	43.77	43.81	43.81	48.35	46.26	45.54	47.98	49.68	49.68	48.63	50.34	50.14	51.45	56.52	54.9	63.41	59.29	57.66	55.45	49.71	45
SPP South - Energy Price - 1H2023	3884	8/19/2033	8/19/2033	43.66	43.5	43.81	43.5	43.5	43.81	48.27	48.27	45.61	44.18	48.88	48.88	49.03	49.24	56.92	55.54	56.37	56.81	56.68	57.13	55.86	53.41	45.37	43.81
SPP South - Energy Price - 1H2023	3885	8/20/2033	8/20/2033	43.5	43.5	42.62	42.31	43.5	43.5	40.77	40.77	39.66	40.77	40.78	40.78	42.08	50.34	53.44	52.21	53.03	60.32	59.75	53.79	54.05	51.63	43.81	43.81
SPP South - Energy Price - 1H2023	3886	8/21/2033	8/21/2033	43.81	43.5	42.62	42.31	42.31	43.5	40.77	39.66	40.77	41.07	41.07	42.53	42.74	47.94	48.79	52.21	53.79	54.4	55.01	53.79	54.05	51.63	45.37	43.81
SPP South - Energy Price - 1H2023	3887	8/22/2033	8/22/2033	43.81	43.72	43.72	43.81	43.72	43.81	49.09	52.13	51.67	54	58.38	57.2	58.94	57.82	61.12	61.27	61.12	61.12	64.35	64.26	61.12	57.83	52.03	43.81
SPP South - Energy Price - 1H2023	3888	8/23/2033	8/23/2033	44.36	44.35	44.35	43.81	43.81	44.32	50.68	50.25	47.12	50.93	52.15	50.93	50.93	50.25	59.45	52.47	57.03	57.23	59.78	60.12	50.93	55.36	45.33	44.36
SPP South - Energy Price - 1H2023	3889	8/24/2033	8/24/2033	44.5	43.81	43.81	44.5	43.54	44.5	48.19	48.95	47.07	51.07	51.93	57.41	60.66	62.97	67.01	67.11	74.68	67.11	69.12	67.11	66.96	62.09	62.53	50.51
SPP South - Energy Price - 1H2023	3890	8/25/2033	8/25/2033	46.34	45.07	45.07	45.07	45.07	45.37	55.25	51.64	51.64	51.64	54.63	60.74	60.41	60.93	63.88	63.88	63.88	66.33	63.88	67.71	62.87	59.94	55.25	49.83
SPP South - Energy Price - 1H2023	3891	8/26/2033	8/26/2033	45.14	46.01	44.96	46.01	46.49	46.49	57.05	58.3	58.45	62.73	65.47	67.2	65.47	58.47	67.03	67.82	67.89	68.02	65.47	61.11	57.71	57.71	46.02	47.23
SPP South - Energy Price - 1H2023	3892	8/27/2033	8/27/2033	45.11	44.75	44.75	44.75	44.75	45.05	41.95	41.95	41.95	41.95	42.53	47.35	54.54	54.53	53.58	54.54	54.54	54.32	62.53	55.81	51.97	45.67	44.75	45.37
SPP South - Energy Price - 1H2023	3893	8/28/2033	8/28/2033	44.75	44.75	44.75	44.75	44.75	44.75	41.95	41.95	41.95	41.95	41.95	42.53	43.14	43.14	43.14	43.14	42.53	41.95	43.76	47.21	45.6	43.12	45.37	44.75
SPP South - Energy Price - 1H2023	3894	8/29/2033	8/29/2033	37.71	37.83	38.03	36.48	36.48	36.48	41.67	40.48	37.08	40.25	41.67	41.51	41.51	41.67	41.67	42.08	43.8	45.35	45.98	46.48	47.04	46.48	43.16	43.16
SPP South - Energy Price - 1H2023	3895	8/30/2033	8/30/2033	43.22	43.81	43.81	43.81	43.81	43.81	48.61	48.01	46.24	47.95	48.01	48.61	48.61	48.61	48.61	53.41	53.41	54.41	55.04	54.41	55.21	49.68	43.83	43.81
SPP South - Energy Price - 1H2023	3896	8/31/2033	8/31/2033	41.06	41.06	41.06	41.06	41.06	41.06	45.5	43.65	40.92	40.27	40.27	40.27	43.16	40.27	43.65	43.65	45.56	51.87	48.31	51.4	51.87	46.52	41.37	41.06
SPP South - Energy Price - 1H2023	3897	9/1/2033	9/1/2033	37.46	37.46	37.46	37.46	37.46	38.37	38.55	34.53	33.8	33.8	33.8	33.8	33.8	33.8	36.12	34.95	38.33	42.9	44.45	43.77	40.09	39.79	38.52	38.51
SPP South - Energy Price - 1H2023	3898	9/2/2033	9/2/2033	38.37	38.37	38.11	38.37	38.37	38.37	38.69	38.21	38.2	38.69	38.21	38.69	38.88	43.46	50.39	44.42	44.42	50.67	44.08	44.42	44	43.14	38.11	38.11
SPP South - Energy Price - 1H2023	3899	9/3/2033	9/3/2033	38.11	38.37	38.11	38.1	37.07	38.1	49.33	49.33	50.71	50.71	52.88	51.06	51.06	60.35	60.35	60.03	62.77	59.85	64.94	65.63	62.36	62.21	38.37	37.06
SPP South - Energy Price - 1H2023	3900	9/4/2033	9/4/2033	37.06	37.06	37.07	37.06	37.06	37.06	49.32	49.32	49.32	45.99	50.71	49.33	50.71	51.06	54.33	54.18	58.06	63.78	60.35	65.63	60.68	52.88	38.37	38.1

SPP South - Energy Price - 1H2023	3901	9/5/2033	9/5/2033	37.38	38.1	38.1	37.07	38.1	38.11	38.21	37.84	35.15	38.2	38.2	38.21	38.21	38.2	38.69	38.59	38.21	39.83	44.01	42.57	39.66	38.2	38.1	37.07
SPP South - Energy Price - 1H2023	3902	9/6/2033	9/6/2033	37.85	37.85	37.85	37.85	35.4	37.85	36.21	34.83	34.11	34.94	34.11	35.08	38.89	38.89	38.05	39.4	39.4	38.9	43.83	39.4	39.4	38.18	36.24	35.63
SPP South - Energy Price - 1H2023	3903	9/7/2033	9/7/2033	35.5	36.02	36.23	35.19	36.02	38.33	39.31	39.31	39.31	39.31	39.84	44.22	44.03	44.17	43.22	43.3	42.97	39.83	44.2	44.28	41.48	39.31	38.37	38.37
SPP South - Energy Price - 1H2023	3904	9/8/2033	9/8/2033	38.37	38.37	38.37	37.67	38.37	38.37	38.74	38.74	38.74	34.94	35.12	34.94	34.02	34.64	35.01	33.97	33.97	37.05	38.74	38.74	37.69	36.17	37.67	37.67
SPP South - Energy Price - 1H2023	3905	9/9/2033	9/9/2033	36.86	33.67	33.91	36.02	33.96	36.86	34.9	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	34.61	34.24	33.52	33.33	33.67	33.67
SPP South - Energy Price - 1H2023	3906	9/10/2033	9/10/2033	33.67	33.67	33.67	33.67	33.67	33.9	44.87	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	49.05	49.05	50.43	50.43	49.06	49.05	34.27	33.67
SPP South - Energy Price - 1H2023	3907	9/11/2033	9/11/2033	33.67	33.67	33.67	33.67	33.67	33.67	44.81	44.81	44.81	44.81	44.81	49.05	49.05	50.01	49.05	49.06	49.05	49.06	49.65	50.01	49.05	47.62	36.86	34.74
SPP South - Energy Price - 1H2023	3908	9/12/2033	9/12/2033	33.71	34.57	36.54	36.54	36.54	36.54	36.08	35.91	35.87	35.02	34.89	34.04	37.74	37.74	37.74	37.74	37.74	37.74	38.02	37.74	37.74	37.74	36.6	36.54
SPP South - Energy Price - 1H2023	3909	9/13/2033	9/13/2033	35.77	35.77	35.77	35.77	35.77	35.77	36.18	36.38	34.57	32.48	32.48	32.85	32.59	32.85	34.02	32.48	32.48	36.56	35.43	34.57	33.71	32.48	32.7	32.7
SPP South - Energy Price - 1H2023	3910	9/14/2033	9/14/2033	32.76	32.76	32.76	32.76	32.76	32.76	32.85	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	33.81	37.58	34.87	34.86	33.21	33.57	33.82
SPP South - Energy Price - 1H2023	3911	9/15/2033	9/15/2033	34.68	33.6	34.01	34.01	34.01	34.01	33.27	33.27	12.19	32.85	33.27	33.06	33.27	33.27	33.27	33.27	33.27	36.09	38.44	38.44	36.86	35.39	36.78	36.78
SPP South - Energy Price - 1H2023	3912	9/16/2033	9/16/2033	35.7	35.7	35.7	35.7	35.7	35.7	35	33.22	32.42	32.42	32.42	32.42	32.42	32.42	32.42	32.42	32.42	32.85	32.85	32.42	32.42	32.42	32.63	32.63
SPP South - Energy Price - 1H2023	3913	9/17/2033	9/17/2033	32.63	32.63	32.63	32.63	32.63	32.63	43.42	10.59	2.33	8.58	2.24	1.98	13.24	14.99	17.19	19.04	19.74	43.42	43.42	43.42	43.42	43.42	32.63	32.63
SPP South - Energy Price - 1H2023	3914	9/18/2033	9/18/2033	32.63	32.63	32.63	32.63	32.63	32.63	43.42	10.59	2.33	1.87	9.85	10.83	13.24	14.99	17.19	19.04	43.42	43.42	43.42	43.42	43.42	43.42	23.31	20.6
SPP South - Energy Price - 1H2023	3915	9/19/2033	9/19/2033	17.15	14.37	12.33	14.6	17.15	27.99	24.75	28.37	27.98	28.37	28.37	28.37	28.37	32.47	32.47	32.78	32.78	32.78	34.2	32.78	32.47	32.47	30.53	27.99
SPP South - Energy Price - 1H2023	3916	9/20/2033	9/20/2033	30.74	31.28	30.75	31.35	31.57	33.59	34.03	33.1	33.37	32.54	32.85	33.12	35.16	35.16	35.16	35.55	35.55	35.55	35.55	35.55	35.16	34.02	31.35	30.74
SPP South - Energy Price - 1H2023	3917	9/21/2033	9/21/2033	30.67	30.67	30.68	30.67	31.14	31.3	32.85	31.44	30.71	30.81	30.71	32.85	32.85	35.01	33.7	33.57	32.85	35.48	35.48	35.48	35.01	32.85	31.28	31.15
SPP South - Energy Price - 1H2023	3918	9/22/2033	9/22/2033	32.5	32.5	32.65	32.51	32.7	32.92	33.66	32.31	32.31	32.31	32.85	32.85	34.02	34.6	34.6	34.98	34.64	37.32	40.88	37.32	36.09	34.86	35.55	35.55
SPP South - Energy Price - 1H2023	3919	9/23/2033	9/23/2033	32.88	31.63	31.18	31.67	32.88	33.37	33.26	31.29	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	32.77	31.18	30.6	30.6	30.54	30.54
SPP South - Energy Price - 1H2023	3920	9/24/2033	9/24/2033	30.54	30.54	30.54	30.54	28.1	28.1	40.64	10.59	9.26	8.58	9.85	1.98	2.48	14.99	17.19	19.04	19.74	40.64	40.64	40.64	40.64	40.64	15.22	14.26
SPP South - Energy Price - 1H2023	3921	9/25/2033	9/25/2033	13.62	11.58	11.46	10.68	10.34	11.02	12.53	3.1	0	0	0	0	0	4.65	4.28	19.91	19.22	40.64	40.64	40.64	21.87	40.64	11.49	12.49
SPP South - Energy Price - 1H2023	3922	9/26/2033	9/26/2033	10.19	10.14	11.02	10.14	10.14	11.02	9.42	7.28	6.87	6.98	7.59	12.61	25.17	28.85	28.85	28.85	28.85	29.6	32.85	32.85	30.67	29.72	28.54	28.54
SPP South - Energy Price - 1H2023	3923	9/27/2033	9/27/2033	32.55	32.54	32.54	32.54	32.54	32.55	32.35	32.35	29.76	32.35	32.35	32.35	32.35	32.35	32.57	32.35	32.85	36.09	36.92	35.25	34.85	34	34.62	32.55
SPP South - Energy Price - 1H2023	3924	9/28/2033	9/28/2033	32.71	32.71	32.71	32.71	32.71	33.23	33.34	33.13	34.86	35.52	34.86	34.18	34.78	34.78	35.52	35.52	36.11	37.09	36.54	35.52	35.37	34.78	34.84	32.71
SPP South - Energy Price - 1H2023	3925	9/29/2033	9/29/2033	32.97	32.97	32.97	32.97	32.97	36.07	33.57	33.35	32.71	32.71	32.71	32.71	32.71	32.71	32.71	32.71	32.71	33.85	32.71	32.71	32.71	32.71	32.97	32.97
SPP South - Energy Price - 1H2023	3926	9/30/2033	9/30/2033	33.13	33.13	33.13	33.13	33.13	33.13	32.86	32.86	32.86	32.86	32.85	32.86	32.85	32.86	32.86	32.85	32.86	32.86	32.86	32.86	32.86	32.86	33.13	33.13
SPP South - Energy Price - 1H2023	3927	10/1/2033	10/1/2033	14	14	14	14	14	14	28.79	10.02	6.28	1.79	0	0	0	0	0	0	2.88	11.73	28.79	14.84	11.51	12.82	6.46	6.24
SPP South - Energy Price - 1H2023	3928	10/2/2033	10/2/2033	6.43	6.46	6.52	14	14	14	28.79	27.49	7.41	7.53	8.18	7.53	7.53	3.53	7.53	7.53	28.79	28.79	29.37	28.79	28.79	28.79	14	14
SPP South - Energy Price - 1H2023	3929	10/3/2033	10/3/2033	14.28	14.28	14.28	14.28	14.28	14.28	24.58	24.58	8.66	10.72	10.96	19.65	24.58	24.58	24.58	24.58	24.58	25.74	28.8	27.01	24.69	24.58	14.28	14.28
SPP South - Energy Price - 1H2023	3930	10/4/2033	10/4/2033	13.65	13.65	13.65	13.65	13.65	13.65	24.28	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	13.65	13.65
SPP South - Energy Price - 1H2023	3931	10/5/2033	10/5/2033	13.43	13.43	13.43	13.43	13.43	13.43	23.28	23.28	23.28	5.47	6.93	6.62	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	13.43	13.43
SPP South - Energy Price - 1H2023	3932	10/6/2033	10/6/2033	13.98	13.98	8.78	7.36	7.21	7.66	21.44	9.16	1.43	5.47	5.95	6.62	9.16	9.96	12.7	24.11	24.11	24.11	25.16	24.48	24.31	24.34	13.98	13.98
SPP South - Energy Price - 1H2023	3933	10/7/2033	10/7/2033	14.07	14.07	14.07	14.07	14.07	14.07	24.37	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	25.43	26.52	26.84	25.67	24.98	14.07	14.07
SPP South - Energy Price - 1H2023	3934	10/8/2033	10/8/2033	14.07	14.07	14.07	14.07	14.07	14.33	31.44	28.92	28.92	28.92	28.92	32.16	32.16	28.92	28.92	28.92	32.16	32.16	32.16	32.16	28.92	28.92	14.07	14.07
SPP South - Energy Price - 1H2023	3935	10/9/2033	10/9/2033	14.07	14.07	14.07	14.07	14.07	14.07	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	28.92	14.07	14.07
SPP South - Energy Price - 1H2023	3936	10/10/2033	10/10/2033	15.48	15.48	15.48	15.48	15.48	15.48	26.73	26.95	27.84	27.84	27.84	26.33	27.84	26.33	26.66	27.84	31.63	32.12	32.23	27.84	27.84	26.33	16.45	17.08
SPP South - Energy Price - 1H2023	3937	10/11/2033	10/11/2033	16.54	15.76	16.1	16.43	17.22	17.22	28.28	28.28	28.28	26.87	26.71	26.71	24.57	24.57	16.61	26.71	26.64	26.71	26.71	26.71	26.71	26.71	13.8	13.8
SPP South - Energy Price - 1H2023	3938	10/12/2033	10/12/2033	13.7	13.7	13.7	13.7	13.92	15.65	26.55	26.55	26.55	26.63	26.55	27.98	26.55	26.55	26.55	26.55	26.55	26.66	27.98	28.1	28.1	28.1	17.22	17.22
SPP South - Energy Price - 1H2023	3939	10/13/2033	10/13/2033	17.22	17.83	17.22	17.22	17.83	17.84	28.17	28.17	26.66	25.75	12	9.96	12.99	8.74	13.26	11.71	26.55	28.17	30.21	32.78	30.88	28.17	15.69	15.69
SPP South - Energy Price - 1H2023	3940	10/14/2033	10/14/2033	15.69	15.69	15.69	15.25	15.69	15.69	27.48	26.02	26.02	25.74	26.02	26.02	25.74	25.74	26.02	26.02	26.02	27.48	30.26	30.51	28.79	26.02	16.14	13.36
SPP South - Energy Price - 1H2023	3941	10/15/2033	10/15/2033	13.36	14.03	14.03	15.24	15.25	15.25	32.18	29.71	27.47	21.89	27.47	27.47	25.27	27.47	27.47	27.47	30.45	32.87	34.31	34.56	32.87	31.35	15.24	15.25
SPP South - Energy Price - 1H2023	3942	10/16/2033	10/16/2033	15.25	15.24	15.65	15.25	15.25	15.25	34.55	31.35	8.47	12.9	8.18	14.86	13.67	12.02	13.67	27.47	27.47	31.76	35.4	32.88	31.35	31.35	15.25	15.61
SPP South - Energy Price - 1H2023	3943	10/17/2033	10/17/2033	16.52	16.07	16.04	16	16.53	17.22	29.29	28.26	26.69	26.69	26.69	26.69	26.69	26.69	26.69	26.69	26.69	31.7	30.29	30.98	29.01	28.26	16.71	16.51
SPP South - Energy Price - 1H2023	3944	10/18/2033	10/18/2033	16.71	16.68	16.67	16.6	16.68	17.22	28.55	26.98	26.94	26.71	26.94	26.66	26.71	26.94	26.93	26.94	26.94	26.94	28.55	27.97	26.94	26.94	15.94	14.17
SPP South - Energy Price - 1H2023	3945	10/19/2033	10/19/2033	14.17	14.17	14.17	14.17	14.17	14.79	27.27	26.66	23.02	25.73	21.73	6.62	10.92	10.48	10.48	24.49	22.53	27.27	27.27	27.27	26.66	25.74	14.17	14.17
SPP South - Energy Price - 1H2023	3946	10/20/2033	10/20/2033	8.84	10.77	15.54	15.54	15.64	16.87	29.44	27.71	27.71	25.74	25.49	25.49	25.74	24.88	27.7	27.71	27.71	28	27.71	27.71	27.71	27.71	15.82	15.44
SPP South - Energy Price - 1H2023	3947	10/21/2033	10/21/2033	14.24	15.41	14.24	15.04	15.44	15.44	27.39	26.78	27.39	25.74	24.64	25.74	23.32	26.66	26.66	15.95	24.64	26.71	27.39	26.86	27.39	27.39	16.31	16.28
SPP South - Energy Price - 1H2023	3948	10/22/2033	10/22/2033	16.41	16.28	16.28	16.28	14.24	16.28	30.8	33.48	29.29	7.53	29.29	29.29	29.29	29.29	18.79	29.29	33.48	39	36.67	35.4	35.4	35.4	17.22	16.28
SPP South - Energy Price - 1H2023	3949	10/23/2033	10/23/2033	15.2	16.28	16.52	16.28	16.28	16.28	33.53	33.48	27.87	1.79	1.73	2.09	2.09	2.09	2.09	3.19	29.29	35.4	35.4	36.67	35.4	35.4	16.4	17.17
SPP South - Energy Price - 1H2023	3950	10/24/2033	10/24/2033	16.4	16.4	16.4	16.4	16.4	17.22	29.24	29.24	27.54	26.67	26.9	27.54	27.54	27.54	29.24	29.24	32.46	35.24	37.75	33.8	32.11	32.11	17.22	16.08
SPP South - Energy Price - 1H2023	3951	10/25/2033	10/25/2033	16.86	14.73	14.73	14.73	14.73	14.73	27.72	25.74	5.39	5.47	5.39	5.39	5.39	2.57	2.16	5.58	16.63	25.74	27.43	27.61	19.64	9.32	6.46	6.24
SPP South - Energy Price - 1H2023	3952	10/26/2033	10/26/2033	4.72	4.8	4.61	4.78	6.24	14.53	27.83	27.83	27.83	27.83	27.83	28.91	28.95	28.2	29.58	28.2	27.83	28.19	27.83	27.83	27.83	27.83	14.53	14.53
SPP South - Energy Price - 1H2023	3953	10/27/2033	10/27/2033	13.87	13.87	13.87	13.87	13.87	13.87	23.94	23.94	23.94	23.94	23.94	23.94	23.94	23.94	23.95	23.94	23.95	23.95	23.94	23.94	23.94	23.94	13.87	13.39
SPP South - Energy Price - 1H2023	3954	10/28/2033	10/28/2033	13.39	13.39	13.39	13.39	13.39	13.39	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	25.74	25.74	25.74	27.22	27.22	25.74	23.39	23.44	13.39	13.39
SPP South - Energy Price - 1H2023	3955	10/29/2033	10/29/2033	13.64	13.48	13.39	13.48	13.48	13.39	29.55	28.2	30.12	27.71	30.12	28.38	27.71	28.37	28.94	29.23	28.85	30.59	31.03	30.59	30.12	27.54	13.39	13.39
SPP South - Energy Price - 1H2023	3956	10/30/2033	10/30/2033	13.39	13.39	13.39	13.39	13.39	13.39	27.54	27.54	3.42	3.09	3.71	1.6	1.74	1.55	2.4	1.52	7.42	27.54	27.54	27.54	27.54	27.54	13.39	13.39
SPP South - Energy Price - 1H2023	3957	10/31/2033	10/31/2033	14.92	14.92	14.92	14.92	14.92	14.92	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	26.06	27.68	28.32	27.4	26.06	26.06	16.61	15.98
SPP South - Energy Price - 1H2023	3958	11/1/2033	11/1/2033	17.89	17.89	17.89	17.89	17.89	17.89	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	30.13	30.13	29.03	29.03	29.03	19.86	19.86
SPP South - Energy Price - 1H2023	3959	11/2/2033	11/2/2033	18.71	18.71	18.13	18.71	18.55	18.71	28.67	28.67	28.67	28.67	28.67	28.67	28.05	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	16.88	16.88
SPP South - Energy Price - 1H2023	3960	11/3/2033	11/3/2033	17.8	6.57	6.31	6.54	17.8	17.8	26.13	26.13	26.13	26.13	26.13	26.13	24.04	26.13	24.04	26.13	26.13	26.18	30	30	29.03	29.03	19.76	19.76
SPP South - Energy Price - 1H2023	3961	11/4/2033	11/4/2033	20	20	19.27	19.69	19.69	19.69	27.57	27.55	26.39	15.69	7.94	5.6	5.65	5.58	5.65	5.53	26.39	26.39	26.39	26.39	26.39	26.39	18.01	9.12
SPP South - Energy Price - 1H2023	3962	11/5/2033	11/5/2033	18.01	18.01	18.01	18.01	18.01	18.01	38.12	38.12	14.62	9.69	9.89	8.91	8.91	9.58	9.69	9.69	38.12	42.32	38.12	38.12	38.12	38.12	18.02	18.02
SPP South - Energy Price - 1H2023	3963	11/6/2033	11/6/2033	18.02	18.02	18.02	18.02	18.02	18.02	38.12	38.12	38.12	9.1	9.89	2.25	2.45	3.38	3.38	2.14	38.12	38.12	38.12	38.12	38.12	38.12	18.01	6.54
SPP South - Energy Price - 1H2023	3964	11/7/2033	11/7/2033	6.46	6.57	6.31	6.54	7.12	7.59	8.77	7.79	2	2.54	2.54	1.31	1.43	1.27	1.97	1.25	6.08	27.45	27.45	27.45	26.38	26.64	6.28	6.4
SPP South - Energy Price - 1H2023	3965	11/8/2033	11/8/2033	5.49	6.06	6.11	6.41	12.08	20.97	31.05	31.05	31.04	31.04	31.04	31.05	31.05	29.03	28.56	30.4	31.05	31.05	31.05	33.48	31.05	31.05	20.97	20.97
SPP South - Energy Price - 1H2023	3966	11/9/2033	11/9/2033	23.54	23.54	23.54	23.54	23.54	23.54	35.51	36.49	35.51	35.51	35.51	35.51	31.89	31.89	31.89	31.89	32.44	35.51	35.51	35.51	34.38	35.26	24.12	24.12
SPP South - Energy Price - 1H2023	3967	11/10/2033	11/10/2033	23.88	23.54	23.54	23.54	23.54	23.54	31.62	31.62	31.62	30.07	5.76	5.19	5.19	5.58	5.65	5.53	29.03	31.62	31.62	29.95	29.03	29.03	21.43	19.68
SPP South - Energy Price - 1H2023	3968	11/11/2033	11/11/2033	18.97	18.97	18.97	18.97	18.97	18.97	28.52	28.52	28.52	6.53	5.76	5.19	5.19	5.58	5.65	11.19	28.52	28.52	30.05	28.52	28.52	28.52	18.98	18.98
SPP South - Energy Price - 1H2023	3969	11/12/2033	11/12/2033	18.98	18.98	18.97	18.98	18.97	18.98	40.15	28.39	14.62	11.2	9.89	8.91	2.45	9.58	8.91	9.49	10.44	8.24	10.45	9.38	9.49	9.69	1.19	1.1
SPP South - Energy Price - 1H2023	3970	11/13/2033	11/13/2033	1.14	1.3	0.98	1.11	1.57	1.59	2.97	2.81	3.43	4.35	5.22	4	4	4	3.38	9.7	40.15	40.15	40.15	40.15	40.15	40.15	18.97	18.98
SPP South - Energy Price - 1H2023	3971	11/14/2033	11/14/2033	14.29	6.06	15.12	6.15	17.37	17.37	26.48	25.8	7.04	6.53	5.76	13.51	5.19	22.4	22.87	23.12	24.16	28.28	26.48	26.48	26.48	26.48	17.37	17.37
SPP South - Energy Price - 1H2023	3972	11/15/2033	11/15/2033	19.67	19.67	20.25	19.75	21.88	21.88	29.39	30.16	29.39	29.39	29.39	29.39	29.39	29.39	29.39	29.39	29.39	31.18	31.84	30.73	30.16	29.39	19.76	20.74
SPP South - Energy Price - 1H2023	3973	11/16/2033	11/16/2033	20.74	20.74	20.74	20.74	20.74	20.74	30.76	33.43	30.76	30.76	30.76	30.76	30.76	33.43	30.76	30.76	33.81	34.23	34.23	34.23	34.23	34.22	23.54	23.1
SPP South - Energy Price - 1H2023	3974	11/17/2033	11/17/2033	20.93	20.42	20.42	20.42	20.42	20.42	30.34	30.34	28.87	10.36	5.76	5.19	5.19	5.58	5.65	5.53	29.03	30.34	30.84	30.58	30.4	30.34	21.99	22.73
SPP South - Energy Price - 1H2023	3975	11/18/2033	11/18/2033	21.99	21.99	21.98	21.99	21.99	21.99	32.81	32.82	30.76	29.51	29.96	29.51	29.51	29.51	29.51	29.51	30.54	32.81	32.58	30.85	30.79	29.51	19.76	21.98
SPP South - Energy Price - 1H2023	3976	11/19/2033	11/19/2033	20.79	19.84	20.2	21.99	21.99	22.15	47.81	47.81	46.52	46.52	46.14	44	43.99	43.93	43.99	46.52	46.52	47.81	47.81	47.81	47.81	47.81	22.6	22.6
SPP South - Energy Price - 1H2023	3977	11/20/2033	11/20/2033	22.6	22.6	22.6	22.6	21.98	21.98	46.52	46.52	46.52	46.52	46.52	46.52	41.81	9.58	10.85	9.49	41.81	46.52	46.52	41.81	41.81	41.81	19.76	19.76
SPP South - Energy Price - 1H2023	3978	11/21/2033	11/21/2033	22.55	22.55	22.55	22.55	23.54	24.38	33.04	36.82	36.13	35.74	33.88	36.82	33.88	36.82	36.82	36.82	37.35	42.41	41.95	37.95	38.17	37.35	25.88	25.16
SPP South - Energy Price - 1H2023	3979	11/22/2033	11/22/2033	24.66	24.66	24.66	24.38	24.66	24.71	36.7	39.94	36.7	36.7	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.7	36.7	36.7	36.7	36.7	24.83	24.29
SPP South - Energy Price - 1H2023	3980	11/23/2033	11/23/2033	24.29	24.29	24.29	24.29	24.29	24.29	35.73	36.22	37.22	36.21	36.01	35.73	35.72	35.72	35.73	35.72	35.73	36.21	36.88	35.73	35.73	35.72	24.29	24.29
SPP South - Energy Price - 1H2023	3981	11/24/2033	11/24/2033	23.54	23.54	23.54	23.54	23.54	23.54	32.08	32.08	32.08	32.08	32.08	25.42	29.38	4.97	25.92	29.46	32.08	32.08	32.08	32.08	32.08	32.08	21.79	21.79
SPP South - Energy Price - 1H2023	3982	11/25/2033	11/25/2033	19.79	19.79	19.79	19.79	19.79	19.79	29.03	29.03	7.71	1.41	1.25	1	1.18	1.25	1.25	1.25	1.66	26.97	29.03	29.03	29.54	26.97	19.79	7.6
SPP South - Energy Price - 1H2023	3983	11/26/2033	11/26/2033	18.2	15.79	18.2	19.79	19.79	19.79	41.87	41.87	13.22	12.55	12.99	13.41	10.14	41.87	41.87	14.65	38.52	41.87	46.58	41.87	41.87	41.87	19.79	19.79

SPP South - Energy Price - 1H2023	3984	11/27/2033	11/27/2033	19.79	19.79	19.79	18.2	18.2	19.79	41.87	41.87	21.99	18.02	11.6	19.58	18.02	16.07	10.28	2.75	41.87	41.87	41.87	41.87	41.87	41.87	21.5	19.79
SPP South - Energy Price - 1H2023	3985	11/28/2033	11/28/2033	19.78	19.78	19.78	19.78	19.78	21.32	29.03	29.03	29.03	29.03	28.62	28.62	29.03	29.03	29.03	28.62	29.03	30.02	29.28	28.62	29.03	28.62	20.68	22.01
SPP South - Energy Price - 1H2023	3986	11/29/2033	11/29/2033	19.84	19.84	19.84	19.84	19.84	19.84	29.03	28.7	28.7	28.7	28.7	26.71	26.71	28.7	28.7	28.7	28.7	29.38	29.6	29.86	29.23	29.31	19.84	20.77
SPP South - Energy Price - 1H2023	3987	11/30/2033	11/30/2033	20.3	20.3	20.3	20.3	20.3	20.3	29.27	29.27	29.27	29.27	29.27	29.03	29.03	29.27	29.27	29.27	29.27	30.6	30.6	30.6	30.6	31.75	23.23	23.23
SPP South - Energy Price - 1H2023	3988	12/1/2033	12/1/2033	31.85	31.85	31.85	31.85	31.85	31.85	36.55	36.55	34.63	33.63	33.63	34.63	35.86	35.86	34.55	36.23	35.86	37.77	37.77	38.48	37.77	38.21	34.78	32.73
SPP South - Energy Price - 1H2023	3989	12/2/2033	12/2/2033	34.78	34.78	34.78	34.78	32.63	32.54	36.74	37.19	36.76	35.48	35.48	35.48	36.73	35.48	35.48	35.48	36.74	41.23	46.53	43.56	40.77	40.7	37.17	35.89
SPP South - Energy Price - 1H2023	3990	12/3/2033	12/3/2033	35.46	35.46	35.46	35.46	35.46	35.46	41.2	41.55	40.33	40.1	35.51	35.51	37.31	35.51	37.34	39.55	39.55	41.77	40.67	39.61	39.55	39.55	34.78	34.78
SPP South - Energy Price - 1H2023	3991	12/4/2033	12/4/2033	34.78	31.23	31.23	31.23	31.23	31.23	35.51	35.51	35.51	35.51	9.39	8.61	33.44	35.51	35.51	35.51	35.51	40.33	39.96	39.61	39.55	38.44	31.23	31.23
SPP South - Energy Price - 1H2023	3992	12/5/2033	12/5/2033	34.07	34.07	34.07	34.07	34.07	34.07	38.3	38.3	32.91	19.19	27.83	22.52	34.55	34.55	35.03	38.3	39.51	46.27	49.91	44.55	44.55	44.55	38.54	38.01
SPP South - Energy Price - 1H2023	3993	12/6/2033	12/6/2033	38.47	38.01	38.54	38.54	38.54	39.64	45.1	50.63	47.47	44.46	44.46	44.46	38.77	38.77	39.55	38.96	40.2	43.71	44.02	44.34	44.46	42.34	38.54	38.54
SPP South - Energy Price - 1H2023	3994	12/7/2033	12/7/2033	39.58	39.58	39.58	39.58	39.58	39.58	46.17	52.06	46.17	45.5	45.07	41.86	41.86	40.51	41.86	40.2	41.86	45.5	46.17	48.51	46.76	46.17	39.85	39.58
SPP South - Energy Price - 1H2023	3995	12/8/2033	12/8/2033	39.61	41.32	41.32	41.32	41.32	39.29	47.2	47.96	47.24	44.95	44.57	41.21	41.21	41.21	41.35	41.97	42.98	46.33	47.24	45.27	42.2	45.4	40.04	38.18
SPP South - Energy Price - 1H2023	3996	12/9/2033	12/9/2033	35.46	35.46	35.46	35.46	35.46	35.46	39.58	39.52	37.97	37.97	36.41	28.47	7.56	6.78	7.13	35.78	37.97	37.97	37.97	37.97	37.97	37.97	33.73	33.73
SPP South - Energy Price - 1H2023	3997	12/10/2033	12/10/2033	33.73	33.73	33.73	33.73	33.73	33.73	38.36	38.36	38.36	38.36	38.08	23.6	38.08	38.08	38.31	38.36	38.36	40.33	38.94	40.33	40.33	38.36	33.73	33.73
SPP South - Energy Price - 1H2023	3998	12/11/2033	12/11/2033	33.73	33.73	33.73	33.73	33.73	33.73	38.36	38.36	38.36	38.36	38.36	38.36	38.36	38.36	38.36	38.36	38.36	40.33	40.33	38.94	40.33	38.36	33.73	33.73
SPP South - Energy Price - 1H2023	3999	12/12/2033	12/12/2033	33.48	33.48	33.48	33.6	33.48	33.48	37.03	38.18	37.03	37.02	37.02	34.55	34.06	37.02	33.15	34.55	37.03	37.03	37.03	37.03	37.02	37.02	33.48	33.48
SPP South - Energy Price - 1H2023	4000	12/13/2033	12/13/2033	32.77	32.77	32.77	32.77	32.77	32.77	36.32	36.41	36.32	36.32	34.55	36.32	34.55	34.55	34.55	34.55	36.32	37.47	40.37	40.56	37.47	37.47	35.46	35.46
SPP South - Energy Price - 1H2023	4001	12/14/2033	12/14/2033	34.67	35.46	35.34	35.38	34.92	34.35	38.03	36.77	35.6	35.59	35.59	35.59	35.59	35.59	35.59	35.6	35.6	37.62	39.96	39.29	38.95	38.24	35.71	33.79
SPP South - Energy Price - 1H2023	4002	12/15/2033	12/15/2033	33.15	32.18	30.52	30.52	30.52	30.52	34.08	34.08	34.08	34.08	14.83	7.38	12.02	8.93	34.08	34.08	34.08	34.08	34.08	34.08	34.08	34.08	30.52	30.52
SPP South - Energy Price - 1H2023	4003	12/16/2033	12/16/2033	27.95	27.95	27.95	27.95	27.95	27.95	31.53	35.46	34.55	34.85	33.64	33.59	32.9	32.62	32.75	33	36.54	37.39	37.27	37.39	36.98	36.98	31.9	31.9
SPP South - Energy Price - 1H2023	4004	12/17/2033	12/17/2033	31.9	31.9	31.9	31.9	31.87	31.3	36.28	36.28	36.28	38.26	36.28	35.37	35.31	35.31	35.31	36.28	39.31	40.26	39.58	39.31	39.33	38.73	31.9	31.9
SPP South - Energy Price - 1H2023	4005	12/18/2033	12/18/2033	31.23	31.38	31.05	31.05	31.05	31.05	35.79	36.28	36.28	36.28	36.28	36.28	36.06	35.31	35.31	35.31	36.28	38.4	40.33	40.33	39.44	39.86	34.31	33.79
SPP South - Energy Price - 1H2023	4006	12/19/2033	12/19/2033	33.03	33.71	33.03	33.03	33.03	32.63	36.86	38.51	38.07	38.07	34.6	33.88	32.48	32.48	32.49	32.48	33.95	37.92	38.07	38.07	38.07	38.51	35.46	33.03
SPP South - Energy Price - 1H2023	4007	12/20/2033	12/20/2033	31.79	30.91	30.91	30.91	29.16	29.16	32.73	32.73	32.73	28.76	8.05	7.38	7.04	6.78	7.13	11.35	32.73	32.73	32.73	34.27	32.73	32.98	29.16	31.32
SPP South - Energy Price - 1H2023	4008	12/21/2033	12/21/2033	29.42	29.56	29.56	29.56	29.56	29.56	32.89	35.19	34.55	32.86	32.06	31.3	30.23	30.23	30.23	30.23	30.23	33.06	33.91	33.68	33.7	34.55	30.36	29.56
SPP South - Energy Price - 1H2023	4009	12/22/2033	12/22/2033	32.18	32.18	32.18	32.18	31.87	31.78	35.17	36.69	34.32	32.51	32.51	32.51	32.51	32.51	32.51	32.51	32.51	33.65	32.51	32.51	32.51	33.15	28.94	28.94
SPP South - Energy Price - 1H2023	4010	12/23/2033	12/23/2033	28.8	28.8	28.8	28.8	28.8	28.8	32.37	34.01	34.01	34.01	32.86	33.37	32.37	32.37	32.37	32.37	33.8	33.93	34.06	34.95	34.01	34.31	31.86	31.69
SPP South - Energy Price - 1H2023	4011	12/24/2033	12/24/2033	30.35	28.8	32.01	32.02	32.01	32.02	37.18	37.33	36.41	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	36.41	34.7	32.75	35.5	35.6	31.02	28.8
SPP South - Energy Price - 1H2023	4012	12/25/2033	12/25/2033	28.8	28.8	28.8	28.8	28.8	28.8	32.75	35.6	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	37.42	37.42	37.42	37.42	37.42	32.9	32.9
SPP South - Energy Price - 1H2023	4013	12/26/2033	12/26/2033	28.8	28.8	28.8	28.8	28.8	28.8	32.37	32.37	32.37	32.37	32.37	32.37	32.37	32.37	32.37	32.37	33.05	35.98	37.94	37.9	36.34	33.87	32.01	28.8
SPP South - Energy Price - 1H2023	4014	12/27/2033	12/27/2033	30.25	30.25	30.35	32.01	33.67	33.67	36.68	38.02	39.6	37.48	36.7	36.68	36.68	36.41	34.13	36.23	33.82	35.09	36.43	35.91	33.82	33.82	30.25	30.25
SPP South - Energy Price - 1H2023	4015	12/28/2033	12/28/2033	26.06	26.06	26.06	26.06	26.06	26.06	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	30.99	33.4	30.99	29.66	29.66	29.66	28.91	26.06
SPP South - Energy Price - 1H2023	4016	12/29/2033	12/29/2033	33.26	33.26	33.26	33.26	35.46	35.46	36.8	36.87	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	37.56	38.4	42.51	39.91	37.56	36.87	35.46	35.46
SPP South - Energy Price - 1H2023	4017	12/30/2033	12/30/2033	35.46	35.46	35.46	35.46	35.46	35.46	37.56	38.09	36.81	35.72	35.72	35.72	35.72	35.72	35.72	35.72	35.72	36.78	36.79	36.78	35.72	35.72	32.17	32.17
SPP South - Energy Price - 1H2023	4018	12/31/2033	12/31/2033	32.17	32.17	32.17	32.17	32.17	32.17	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	36.59	32.17	32.17
SPP South - Energy Price - 1H2023	4019	1/1/2034	1/1/2034	33.63	33.63	33.63	33.63	33.63	33.63	44.8	44.8	44.81	44.8	11.86	10.61	9.71	9.07	8.56	10.88	8.37	44.81	44.81	44.81	44.81	44.8	33.63	33.63
SPP South - Energy Price - 1H2023	4020	1/2/2034	1/2/2034	33.63	33.63	33.63	33.63	33.63	33.63	40.39	40.39	40.39	40.39	40.39	10.33	7.69	7.18	1.56	6.9	1.91	38.22	40.39	40.39	40.39	40.39	33.63	33.63
SPP South - Energy Price - 1H2023	4021	1/3/2034	1/3/2034	31.68	31.68	31.68	31.68	31.68	31.68	38.29	38.29	38.29	38.29	9.4	38.29	38.29	38.29	38.29	38.29	38.29	38.29	39.59	38.59	38.29	38.29	31.68	31.68
SPP South - Energy Price - 1H2023	4022	1/4/2034	1/4/2034	30.87	30.87	30.87	30.87	30.87	30.87	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.88	37.42	37.42	37.42	30.87	30.87
SPP South - Energy Price - 1H2023	4023	1/5/2034	1/5/2034	30.62	30.62	30.62	30.62	30.62	30.62	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15	38.3	39.48	39.31	37.15	37.15	30.62	30.62
SPP South - Energy Price - 1H2023	4024	1/6/2034	1/6/2034	28.34	28.34	28.34	28.34	28.34	28.34	34.7	36.02	36.43	36.22	35.05	35.17	35.17	34.7	34.7	34.7	34.7	34.7	35.17	35.17	34.7	34.7	28.34	28.34
SPP South - Energy Price - 1H2023	4025	1/7/2034	1/7/2034	28.34	28.34	28.34	28.34	28.34	28.34	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	41.18	43.11	43.11	40.38	38.11	28.51	28.34
SPP South - Energy Price - 1H2023	4026	1/8/2034	1/8/2034	28.34	28.34	28.34	28.34	28.34	28.34	37.76	37.76	37.76	37.76	19.95	10.61	9.71	9.07	8.56	8.71	37.76	37.76	37.76	37.76	37.76	37.76	28.34	28.34
SPP South - Energy Price - 1H2023	4027	1/9/2034	1/9/2034	31.76	31.76	31.76	31.76	31.76	31.76	38.38	42.12	38.44	38.38	38.38	39.36	39.63	38.38	38.38	38.38	39.82	42.06	44.81	44.81	44.31	42.11	34.92	34.92
SPP South - Energy Price - 1H2023	4028	1/10/2034	1/10/2034	34.92	34.92	34.92	34.82	34.82	36.21	45.22	48.57	48.57	47.1	48.55	45.89	46.68	44.02	46.68	46.68	42.23	41.66	41.66	41.66	41.66	41.66	34.82	34.82
SPP South - Energy Price - 1H2023	4029	1/11/2034	1/11/2034	33.89	33.89	33.89	33.89	33.89	33.89	40.67	40.83	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	33.89	33.89
SPP South - Energy Price - 1H2023	4030	1/12/2034	1/12/2034	32.95	32.95	32.95	32.95	32.95	32.95	40.77	40.81	39.65	39.65	39.65	39.65	39.65	39.65	39.65	39.65	39.65	40.77	41.56	40.77	40.13	39.65	32.95	32.95
SPP South - Energy Price - 1H2023	4031	1/13/2034	1/13/2034	33.65	33.65	33.65	33.65	33.65	33.65	40.83	40.86	40.86	40.75	40.75	40.75	40.75	40.41	40.41	40.41	40.41	40.41	40.69	40.41	40.41	40.41	33.65	33.65
SPP South - Energy Price - 1H2023	4032	1/14/2034	1/14/2034	33.65	33.65	33.65	33.65	33.65	33.65	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	33.65	33.65
SPP South - Energy Price - 1H2023	4033	1/15/2034	1/15/2034	33.65	33.65	33.65	33.65	33.65	33.65	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	45.23	45.39	44.83	44.83	33.65	33.65
SPP South - Energy Price - 1H2023	4034	1/16/2034	1/16/2034	33.49	33.49	33.49	33.49	33.49	33.49	40.24	42.02	40.24	40.24	40.23	39.64	40.23	40.23	6.78	37.01	39.09	40.23	40.24	40.23	40.24	40.23	33.49	33.49
SPP South - Energy Price - 1H2023	4035	1/17/2034	1/17/2034	38.65	38.65	38.65	38.65	38.65	38.65	45.78	45.78	45.78	45.78	45.78	42.12	41.88	42.22	42.12	39.57	45.78	45.78	45.78	45.78	45.78	45.78	38.65	38.65
SPP South - Energy Price - 1H2023	4036	1/18/2034	1/18/2034	40.61	40.61	40.61	40.61	40.61	40.61	47.89	47.89	47.89	47.89	40.72	38.22	35	34.9	33.08	37.99	38.22	47.89	47.89	47.89	47.89	47.89	40.61	40.61
SPP South - Energy Price - 1H2023	4037	1/19/2034	1/19/2034	36.39	36.39	36.39	36.21	36.39	36.39	43.36	43.36	43.36	43.36	42.23	42.23	40.89	40.84	42.21	33.55	43.36	43.36	43.36	43.36	43.36	43.36	36.39	36.39
SPP South - Energy Price - 1H2023	4038	1/20/2034	1/20/2034	36.13	36.13	36.13	36.13	36.13	36.13	41.46	41.46	10.69	0	2.28	2.26	1.79	1.69	2.28	2.28	6.63	43.08	43.08	43.08	43.08	43.08	36.13	36.13
SPP South - Energy Price - 1H2023	4039	1/21/2034	1/21/2034	36.13	36.13	36.13	36.13	36.13	36.13	48.14	48.14	48.14	48.14	11.86	10.61	9.71	9.07	8.56	8.71	48.14	48.14	48.14	48.14	48.14	48.14	36.13	36.13
SPP South - Energy Price - 1H2023	4040	1/22/2034	1/22/2034	36.13	36.13	36.13	36.13	36.13	36.13	48.14	48.14	48.14	48.14	48.14	44.29	48.14	48.14	14.99	8.71	8.37	48.14	48.14	48.14	48.14	48.14	36.13	36.13
SPP South - Energy Price - 1H2023	4041	1/23/2034	1/23/2034	31.01	31.01	31.01	31.01	31.01	31.01	37.5	37.5	37.5	37.5	37.5	37.5	36.27	11.39	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	31.01	31.01
SPP South - Energy Price - 1H2023	4042	1/24/2034	1/24/2034	30.32	30.32	30.32	30.32	30.32	30.32	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	36.76	30.32	30.32
SPP South - Energy Price - 1H2023	4043	1/25/2034	1/25/2034	30.19	30.19	30.19	30.19	30.19	30.19	39.81	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.62	36.62	40.3	40.3	40.3	40.61	33.6	33.6
SPP South - Energy Price - 1H2023	4044	1/26/2034	1/26/2034	35.12	35.12	35.12	35.12	35.12	35.12	44.54	44.54	38.06	38.06	38.06	38.06	38.06	38.06	38.06	38.06	38.06	40.68	44.54	44.54	41.54	41.54	36.21	35.12
SPP South - Energy Price - 1H2023	4045	1/27/2034	1/27/2034	36.21	36.21	36.21	35.9	36.21	36.21	42.75	42.75	42.75	42.75	42.75	42.75	39.33	38.22	41.39	34.53	6.08	42.75	42.75	42.75	42.75	42.75	35.9	35.9
SPP South - Energy Price - 1H2023	4046	1/28/2034	1/28/2034	35.9	35.9	35.9	35.9	35.9	35.9	47.83	47.83	47.83	47.83	35.03	8.35	8.14	8.05	7.97	7.97	7.67	43.04	47.83	47.83	47.83	47.83	35.9	35.9
SPP South - Energy Price - 1H2023	4047	1/29/2034	1/29/2034	35.9	35.9	35.9	35.9	35.9	35.9	47.83	48.24	48.24	48.24	48.24	48.24	47.83	47.83	47.83	47.83	47.83	47.83	47.83	47.83	47.83	47.83	35.9	35.9
SPP South - Energy Price - 1H2023	4048	1/30/2034	1/30/2034	32.05	32.05	32.05	32.05	32.05	32.05	38.62	38.62	38.62	38.22	7.08	6.62	6.45	6.38	4.22	1.32	6.08	32.31	35.77	35.77	35.77	38.22	32.05	32.05
SPP South - Energy Price - 1H2023	4049	1/31/2034	1/31/2034	31.17	31.17	31.17	31.17	31.17	31.17	37.67	37.67	37.67	37.67	37.67	37.67	37.67	37	13.66	35.57	35.25	37.67	37.67	37.67	37.67	37.67	31.17	31.17
SPP South - Energy Price - 1H2023	4050	2/1/2034	2/1/2034	15.46	15.46	15.46	15.46	15.46	15.46	33.72	35.33	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	34.04	35.35	16.37	15.46
SPP South - Energy Price - 1H2023	4051	2/2/2034	2/2/2034	16.37	16.37	16.37	16.37	16.37	16.37	36.25	36.25	36.25	36.25	36.25	36.25	33.16	33.16	33.35	33.47	35.94	36.25	36.25	36.25	36.25	36.62	17.24	17.04
SPP South - Energy Price - 1H2023	4052	2/3/2034	2/3/2034	17.04	16.41	16.15	16.15	17.04	17.04	38.71	39.66	38.41	35.81	35.81	35.81	35.81	35.8	35.8	35.8	35.8	35.81	38.41	38.41	38.25	38.41	17.34	17.03
SPP South - Energy Price - 1H2023	4053	2/4/2034	2/4/2034	17.03	16.32	16.15	16.15	16.15	16.15	38.35	38.61	37.01	37	37	36.93	37	34.04	34.04	6.67	6.32	37	37.01	37.07	37.01	37.01	16.15	16.15
SPP South - Energy Price - 1H2023	4054	2/5/2034	2/5/2034	16.15	16.15	16.15	16.15	16.15	16.15	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.01	37.28	38.87	40.59	38.07	37.01	16.15	16.15
SPP South - Energy Price - 1H2023	4055	2/6/2034	2/6/2034	14.95	14.95	14.95	14.95	14.95	15.11	35.31	36.66	33.47	33.47	33.47	32.46	26.39	5.54	5.48	25.57	26.38	35.23	35.8	35.31	35.31	34.92	14.95	14.95
SPP South - Energy Price - 1H2023	4056	2/7/2034	2/7/2034	14.9	14.9	14.9	14.9	14.9	14.9	33.36	35.31	33.36	33.16	33.36	33.36	5.59	5.54	5.48	5.48	5.27	33.16	33.36	33.36	33.36	33.36	14.9	14.9
SPP South - Energy Price - 1H2023	4057	2/8/2034	2/8/2034	15.37	15.37	15.37	15.37	15.37	15.37	34.29	34.3	34.29	5.08	0	0	0	0	0	0	0	3.01	34.3	34.3	34.3	34.3	16.29	15.71
SPP South - Energy Price - 1H2023	4058	2/9/2034	2/9/2034	15.31	15.31	15.31	15.31	15.31	15.31	34.18	34.18	33.16	33.91	33.91	33.16	32.1	31.93	25.97	25.56	29.86	33.16	34.18	34.18	34.18	34.18	15.31	15.31
SPP South - Energy Price - 1H2023	4059	2/10/2034	2/10/2034	14.75	14.75	14.75	14.75	14.75	14.75	33.08	33.08	33.08	28.96	11.1	5.48	5.48	1.05	5.48	1.14	5.27	33.08	33.08	33.08	33.08	33.08	14.75	14.75
SPP South - Energy Price - 1H2023	4060	2/11/2034	2/11/2034	14.75	14.75	14.75	14.75	14.75	14.75	33.81	35.55	33.81	33.81	33.81	33.81	33.81	32.28	29.97	29.26	26.83	31.55	33.81	33.81	33.81	33.81	14.75	14.75
SPP South - Energy Price - 1H2023	4061	2/12/2034	2/12/2034	14.75	14.75	14.75	14.75	14.75	14.75	33.81	34.87	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	36.37	35.6	15.53	14.75
SPP South - Energy Price - 1H2023	4062	2/13/2034	2/13/2034	17.42	17.42	17.42	17.42	17.42	17.42	38.29	38.29	38.96	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.29	17.42	17.42
SPP South - Energy Price - 1H2023	4063	2/14/2034	2/14/2034	17.38	17.38	17.38	17.38	17.38	17.38	38.22	38.22	38.22	38.22	38.22	5.74	1.06	31.31	1	25.56	31.31	35.14	38.22	38.22	38.22	38.22	17.38	17.38
SPP South - Energy Price - 1H2023	4064	2/15/2034	2/15/2034	22.79	22.79	22.79	22.79	21.8	22.79	48.79	48.79	29.75	25.47	31.89	26.95	22.86	1.05	21.92	5.48	5.27	36.64	48.79	48.79	48.79	48.79	21.95	19.46
SPP South - Energy Price - 1H2023	4065	2/16/2034	2/16/2034	18.22	18.3	18.3	18.3	18.3	18.3	40.02	40.02	30.49	33.15	30.4	1.08	27.16	1.05	30.49	31.83	30.49	40.02	40.02	40.02	40.02	40.02	18.3	18.3
SPP South - Energy Price - 1H2023	4066	2/17/2034	2/17/2034	16.94	16.94	16.94	16.94	16.94	16.94	38.47	37.36	37.36	37.36	31.39	5.27	5.27	1.05	5.27	5.27	5.27	30.86	36.67	37.36	37.36	37.36	16.94	16.94

SPP South - Energy Price - 1H2023	4067	2/18/2034	2/18/2034	16.94	16.94	16.94	16.94	16.94	16.94	38.83	39.74	38.83	38.83	38.83	38.83	38.83	31.44	38.07	38.83	38.83	38.83	39.27	39.08	39.27	38.83	16.94	16.94
SPP South - Energy Price - 1H2023	4068	2/19/2034	2/19/2034	16.94	16.94	16.94	16.94	16.94	16.94	38.83	38.83	38.83	38.83	38.83	38.83	36.96	4.26	4.38	6.57	3.72	36.99	38.83	38.83	38.83	38.83	16.94	16.94
SPP South - Energy Price - 1H2023	4069	2/20/2034	2/20/2034	15.58	15.58	15.58	15.58	15.58	15.89	37.06	37.8	36.64	35.62	35.62	35.62	35.62	35.62	35.62	35.62	36.02	37.8	40.24	39.71	38.84	37.24	17.34	16.39
SPP South - Energy Price - 1H2023	4070	2/21/2034	2/21/2034	17.34	17.34	17.34	17.34	17.34	17.34	38.6	41.86	37.52	36.93	35.12	32.08	32.04	32.04	23.72	18.73	32.04	31.73	37.18	37.52	34.83	37.52	16.54	16.55
SPP South - Energy Price - 1H2023	4071	2/22/2034	2/22/2034	15.24	15.24	15.24	15.24	15.24	15.24	35.32	35.32	34.96	32.55	28.58	28.08	4.39	4.31	1.04	1.01	4.39	30.68	34.96	34.96	34.96	34.96	15.24	15.24
SPP South - Energy Price - 1H2023	4072	2/23/2034	2/23/2034	16.04	16.04	16.04	16.04	16.04	16.04	35.51	35.51	35.51	35.51	33.82	33.16	33.16	35.16	34.33	35.51	33.21	35.51	35.51	36.58	36.6	35.51	17.19	16.8
SPP South - Energy Price - 1H2023	4073	2/24/2034	2/24/2034	16.88	16.25	16.28	16.33	16.24	17.27	35.43	40.59	35.96	35.43	35.4	35.4	35.38	35.38	35.38	35.38	35.38	35.38	35.43	35.38	35.38	35.38	15.98	15.98
SPP South - Energy Price - 1H2023	4074	2/25/2034	2/25/2034	15.98	15.97	15.98	15.97	15.98	15.98	36.62	36.61	1.14	1.08	1.13	1.04	1.19	1.09	1.11	1.2	1.11	1.11	36.61	36.61	36.61	36.61	15.97	15.97
SPP South - Energy Price - 1H2023	4075	2/26/2034	2/26/2034	15.97	15.98	15.98	15.98	15.98	15.98	36.62	36.62	36.61	1.08	1.13	1.04	0	1.09	1.24	1.21	1.17	1.14	27.09	31.39	30.21	31.39	13.69	12.6
SPP South - Energy Price - 1H2023	4076	2/27/2034	2/27/2034	13.69	13.57	13.73	12.6	13.52	14.35	28.59	25.64	0.96	0.9	0.94	22.01	20.55	25.31	23.28	23.28	25.69	33.53	37.63	41.75	35.47	41.22	16.68	16.68
SPP South - Energy Price - 1H2023	4077	2/28/2034	2/28/2034	15.09	15.09	15.09	15.09	15.09	15.09	33.33	33.29	31.37	6.35	0.94	0.87	1	0.91	1.04	1.01	0.98	1	34.29	38.34	39.06	39.14	17.34	17.28
SPP South - Energy Price - 1H2023	4078	3/1/2034	3/1/2034	21.8	21.8	21.8	21.8	21.8	21.8	35.82	35.82	28.96	24.85	26.41	26.31	26.41	26.35	22.37	27.1	32.13	35.46	36.66	36.77	35.82	35.82	22.93	22.86
SPP South - Energy Price - 1H2023	4079	3/2/2034	3/2/2034	23.15	23.15	20.14	22.93	22.93	22.73	33.6	34.22	33.6	33.6	31.64	29.89	26.58	25.73	25.73	0.75	4.83	24.12	33.03	33.6	33.6	34.13	23.15	22.39
SPP South - Energy Price - 1H2023	4080	3/3/2034	3/3/2034	20.35	20.35	20.35	20.35	20.35	20.35	30.56	30.56	30.42	26.84	26.57	23.61	23.61	17.68	0.78	0.75	19.84	26.43	29.84	30.42	29.82	29.51	17.75	17.75
SPP South - Energy Price - 1H2023	4081	3/4/2034	3/4/2034	17.75	17.75	17.75	17.75	18.08	17.75	25.9	24.9	0.79	0.74	0.78	0.72	0.82	18.11	17.71	24.9	24.9	25.64	28.34	28.55	28.54	28.34	19.46	19.46
SPP South - Energy Price - 1H2023	4082	3/5/2034	3/5/2034	19.46	19.46	19.46	18.72	19.46	20.35	28.55	25.79	24.9	24.9	24.9	24.9	24.9	5.08	5.21	8.66	24.9	27.09	28.15	27.31	27.31	27.31	19.46	19.46
SPP South - Energy Price - 1H2023	4083	3/6/2034	3/6/2034	17.97	17.91	16.45	16.45	16.45	17.91	28.68	28.15	24.85	23.34	21.55	19	4.41	19	19	19.06	18.78	4.65	23.59	24.85	24.84	24.85	16.45	16.45
SPP South - Energy Price - 1H2023	4084	3/7/2034	3/7/2034	17.11	17.11	17.11	17.11	17.11	19.46	29.57	29.21	26.03	25.99	25.99	24.85	27.69	25.99	28.16	27.1	26.55	28.07	29.57	29.59	29.57	29.57	19.6	19.6
SPP South - Energy Price - 1H2023	4085	3/8/2034	3/8/2034	20.15	19.6	19.31	19.46	19.31	18.48	30.19	29.2	26.64	24.85	26.57	28.33	26.67	26.54	26.7	29.07	28.86	29.07	30.3	30.98	30.28	30.3	20.15	19.58
SPP South - Energy Price - 1H2023	4086	3/9/2034	3/9/2034	20.15	19.46	19.46	20.73	20.73	20.73	30.85	30.85	30.71	30.37	27.5	26.02	29.08	29.66	30.37	29.6	29.5	29.98	30.06	30.37	30.53	29.67	19.46	18.62
SPP South - Energy Price - 1H2023	4087	3/10/2034	3/10/2034	19.46	19.46	19.46	19.46	17.42	17.42	29.79	29.17	28.85	26.83	26.57	29.97	29.97	29.97	29.97	29.98	29.98	29.98	29.97	29.97	29.97	26.26	17.42	17.42
SPP South - Energy Price - 1H2023	4088	3/11/2034	3/11/2034	16.46	16.03	17.42	17.42	4.49	4.24	6.46	6.46	5.39	0.78	0.78	0.72	0	0.75	0.85	0.83	0.8	5.11	24.44	24.44	24.44	24.44	17.42	17.42
SPP South - Energy Price - 1H2023	4089	3/12/2034	3/12/2034	17.42	17.42	17.42	17.42	18.09	17.42	27.09	27.35	27.49	27.31	27.09	27.02	25.24	24.47	27.29	24.92	24.95	27.09	26.03	27.09	24.44	24.44	17.42	17.42
SPP South - Energy Price - 1H2023	4090	3/13/2034	3/13/2034	18.33	18.33	18.33	18.33	18.33	18.33	29.25	29.25	29.25	29.25	28.12	28.07	24.2	28.45	29.25	29.25	25.17	25.73	26.6	27.4	24.73	19.32	4.98	4.45
SPP South - Energy Price - 1H2023	4091	3/14/2034	3/14/2034	4.7	4.68	4.55	4.58	4.52	18	25.72	19.72	4.9	4.76	4.29	4.31	4.41	4.62	4.74	4.65	4.83	4.65	23.45	24.85	27.61	25.73	18	18
SPP South - Energy Price - 1H2023	4092	3/15/2034	3/15/2034	17.88	17.88	17.81	17.88	17.88	17.88	28.64	26.07	24.81	0.75	0.75	0.65	0.75	0.68	0.78	0.75	4.83	4.65	26.25	28.64	28.64	28.64	18.43	17.9
SPP South - Energy Price - 1H2023	4093	3/16/2034	3/16/2034	19.62	19.62	19.62	19.62	19.62	19.62	30.14	30.19	30.91	30.75	29.74	29.9	28.72	28.72	28.72	28.72	28.72	28.72	28.72	28.72	28.72	28.72	19.62	19.46
SPP South - Energy Price - 1H2023	4094	3/17/2034	3/17/2034	18.73	18.73	18.73	18.73	18.73	18.73	26.29	22.22	0.72	0.67	0.71	0	0	0.68	0.78	2.77	22.29	24.85	27.55	27.55	27.55	27.55	18.73	18.73
SPP South - Energy Price - 1H2023	4095	3/18/2034	3/18/2034	18.73	18.73	18.73	18.73	18.73	18.73	26.28	26.28	26.28	26.28	26.28	26.28	22.56	22.56	22.56	17.77	2.38	22.56	26.28	26.28	26.28	26.28	18.73	18.73
SPP South - Energy Price - 1H2023	4096	3/19/2034	3/19/2034	18.73	18.73	18.73	18.73	18.73	18.73	26.62	26.28	26.28	26.28	26.28	26.28	26.28	25.06	26.28	0.83	5.31	26.28	26.28	26.28	26.28	26.28	18.73	18.73
SPP South - Energy Price - 1H2023	4097	3/20/2034	3/20/2034	18.87	18.87	18.87	18.87	18.87	19.46	30.68	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	27.73	19.1	18.87
SPP South - Energy Price - 1H2023	4098	3/21/2034	3/21/2034	18.44	18.44	18.44	18.44	18.44	18.82	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	27.18	19.11	19.33
SPP South - Energy Price - 1H2023	4099	3/22/2034	3/22/2034	18.43	17.88	17.91	17.62	17.62	17.91	26.11	26.11	26.11	26.11	26.11	26.11	25.57	24.02	24.85	24.85	24.85	25.17	26.11	26.11	26.11	26.11	17.62	17.62
SPP South - Energy Price - 1H2023	4100	3/23/2034	3/23/2034	16.66	16.66	16.66	16.66	16.66	16.66	24.85	24.85	24.85	24.85	24.85	22.86	24.85	24.85	24.85	22.86	24.85	24.85	24.85	24.98	24.85	24.85	16.66	16.66
SPP South - Energy Price - 1H2023	4101	3/24/2034	3/24/2034	15.39	15.39	15.39	15.39	15.39	15.39	23.2	23.2	6.17	6.56	6.56	4.72	4.91	6.71	6.56	20.34	23.2	23.2	23.2	23.33	23.2	23.2	15.39	15.39
SPP South - Energy Price - 1H2023	4102	3/25/2034	3/25/2034	15.39	15.39	15.39	15.39	15.39	15.39	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.64	23.47	23.47	21.59	21.59	15.39	15.39
SPP South - Energy Price - 1H2023	4103	3/26/2034	3/26/2034	15.39	15.39	15.39	15.39	15.39	15.39	21.59	21.59	21.59	3.92	0	0	0	0	0	0	0	0.9	7.34	7.46	8.72	8.64	6	5.35
SPP South - Energy Price - 1H2023	4104	3/27/2034	3/27/2034	6.11	5.12	5.35	5.38	5.56	5.39	6.98	1.02	0.98	0.89	1	0.98	2.04	3.54	7.3	6.85	23.8	23.8	24.53	24.26	24.68	23.8	15.85	15.85
SPP South - Energy Price - 1H2023	4105	3/28/2034	3/28/2034	16.71	16.71	16.71	16.71	16.71	16.71	24.92	24.92	24.92	24.92	21.88	0.98	0.8	0.98	0.83	0.76	24.85	24.92	24.92	24.92	24.92	24.92	16.71	16.71
SPP South - Energy Price - 1H2023	4106	3/29/2034	3/29/2034	17.23	17.23	17.23	17.23	17.23	17.23	25.6	25.52	16.43	6.15	6.5	6.17	6.4	6.51	6.5	6.95	7.19	9.97	24.85	24.85	24.85	18.07	12.94	12.83
SPP South - Energy Price - 1H2023	4107	3/30/2034	3/30/2034	6.11	7.73	5.35	12.94	17.3	17.3	25.69	25.69	25.69	22.96	22.96	10.65	10.1	24.85	15.95	6.95	21.12	24.85	24.12	22.96	22.96	12.44	6	5.35
SPP South - Energy Price - 1H2023	4108	3/31/2034	3/31/2034	8.61	8.48	8.61	8.61	16.26	16.26	24.33	24.33	24.33	24.33	24.33	13.19	6.4	6.51	13.19	13.19	7.19	22.41	24.33	24.33	24.33	24.33	16.26	16.26
SPP South - Energy Price - 1H2023	4109	4/1/2034	4/1/2034	8.76	8.76	8.76	8.76	8.76	8.76	13.92	13.92	13.92	10.9	13.92	5.34	5.23	1.44	0.57	0.52	4.94	13.92	13.92	13.92	13.92	13.92	8.76	8.76
SPP South - Energy Price - 1H2023	4110	4/2/2034	4/2/2034	8.76	8.76	8.76	8.76	8.76	8.76	13.92	6.8	5.89	6.48	6.48	6.11	6.48	6.48	5.09	7.26	13.92	13.92	13.92	13.97	13.96	13.92	8.76	8.76
SPP South - Energy Price - 1H2023	4111	4/3/2034	4/3/2034	9.44	9.44	9.44	9.44	9.44	9.44	11.53	11.53	11.53	11.14	11.14	2.76	7.62	2.92	6.29	5.54	5.43	6.29	11.53	11.53	11.53	10.88	9.44	9.17
SPP South - Energy Price - 1H2023	4112	4/4/2034	4/4/2034	4.61	4.61	2.96	4.7	4.61	9.64	11.14	2.97	1.05	0.4	0.45	0.44	1.05	1.14	1.05	1.05	6.32	11.14	11.75	11.75	11.75	11.75	9.64	9.64
SPP South - Energy Price - 1H2023	4113	4/5/2034	4/5/2034	5.99	9.64	10.15	10.15	10.15	10.15	12.28	12.28	4.69	2.76	10.51	9.77	10.06	8.5	11.02	11.84	10.61	11.07	11.8	11.67	12.28	11.53	10.15	9.74
SPP South - Energy Price - 1H2023	4114	4/6/2034	4/6/2034	9.84	9.84	9.84	9.84	9.84	9.84	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	9.84	9.84
SPP South - Energy Price - 1H2023	4115	4/7/2034	4/7/2034	9.67	9.67	9.67	9.67	9.67	9.67	11.54	11.54	2.86	0.4	0.44	0.44	0.36	0.09	0.37	0.34	0.35	1.29	2.93	11.14	11.14	11.14	9.67	9.67
SPP South - Energy Price - 1H2023	4116	4/8/2034	4/8/2034	3.37	3.25	2.96	2.97	3.07	2.98	4.8	4.56	0	0	0	0	0	0	0	0	0.54	0.56	4.5	15.36	15.36	15.36	9.67	9.67
SPP South - Energy Price - 1H2023	4117	4/9/2034	4/9/2034	9.67	9.67	9.67	9.67	9.67	9.67	15.36	15.36	4.78	4.23	5.19	4.78	4.4	4.47	4.47	4.78	5.84	15.36	16.62	15.36	15.36	15.36	9.67	9.67
SPP South - Energy Price - 1H2023	4118	4/10/2034	4/10/2034	9.63	9.63	9.63	9.63	9.63	9.63	11.49	11.49	11.49	11.14	5.59	6.08	2.87	0.34	2.91	3.22	3.22	4.2	11.14	11.49	11.49	11.49	9.63	9.63
SPP South - Energy Price - 1H2023	4119	4/11/2034	4/11/2034	9.77	9.77	4.25	7.09	9.77	9.77	11.64	11.64	11.53	4.03	3.12	2.76	2.87	2.92	2.91	3.12	3.22	4.91	11.64	11.64	11.64	11.64	9.77	9.77
SPP South - Energy Price - 1H2023	4120	4/12/2034	4/12/2034	9.91	9.91	9.91	9.91	9.91	9.91	11.79	2.97	0.44	0.4	0.4	0.44	0.36	0.34	0.37	5.04	5.8	11.79	11.75	11.77	11.22	11.14	9.71	9.91
SPP South - Energy Price - 1H2023	4121	4/13/2034	4/13/2034	9.71	9.71	9.71	9.71	9.71	9.71	11.14	2.97	2.86	2.64	2.64	2.76	2.87	2.64	0.37	2.64	2.64	3.1	2.93	11.14	11.14	11.58	9.71	9.71
SPP South - Energy Price - 1H2023	4122	4/14/2034	4/14/2034	9.52	9.52	9.52	9.52	9.52	10.1	11.68	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	9.52	9.52
SPP South - Energy Price - 1H2023	4123	4/15/2034	4/15/2034	9.52	9.52	9.52	9.52	9.52	9.52	15.39	15.12	15.12	15.12	15.12	15.12	15.12	5.96	4.79	9.58	12.6	15.12	9.58	10.41	9.58	9.58	6.55	9.52
SPP South - Energy Price - 1H2023	4124	4/16/2034	4/16/2034	9.52	9.52	9.52	9.52	9.52	9.52	15.12	15.12	14.9	6.45	6.01	15.12	15.12	14.9	15.12	15.12	15.12	15.12	15.12	15.12	15.12	15.12	9.52	9.52
SPP South - Energy Price - 1H2023	4125	4/17/2034	4/17/2034	9.38	9.38	9.38	9.38	9.38	9.38	11.23	11.23	11.23	11.23	11.23	11.14	11.23	11.23	11.23	11.23	11.23	11.23	11.23	11.51	11.44	11.23	9.38	9.38
SPP South - Energy Price - 1H2023	4126	4/18/2034	4/18/2034	9.51	9.51	9.51	9.51	9.51	9.51	11.58	11.36	11.36	11.36	11.36	11.36	11.36	11.14	11.14	11.14	11.36	11.37	11.37	11.39	11.37	11.37	9.51	9.51
SPP South - Energy Price - 1H2023	4127	4/19/2034	4/19/2034	9.3	9.3	9.3	9.3	9.51	9.59	11.35	11.27	11.15	11.15	11.15	11.15	11.14	9.37	9.81	11.14	9.12	11.14	11.14	11.15	11.14	11.14	9.22	9.22
SPP South - Energy Price - 1H2023	4128	4/20/2034	4/20/2034	9.22	9.22	9.22	9.22	9.22	9.22	11.07	11.07	11.07	10.39	9.54	9.54	9.54	2.92	2.91	9.49	9.84	9.92	11.07	11.07	11.07	11.07	9.22	9.22
SPP South - Energy Price - 1H2023	4129	4/21/2034	4/21/2034	9.13	9.13	9.13	9.13	9.13	9.13	10.96	10.96	10.96	10.96	10.96	10.96	9.57	9.57	2.91	9.57	9.57	9.57	10.96	10.96	10.4	3.53	3.31	2.95
SPP South - Energy Price - 1H2023	4130	4/22/2034	4/22/2034	3.37	3.25	2.96	2.97	3.07	2.98	4.8	4.56	4.39	4.23	0.69	0.67	0.55	0.53	0.69	0.69	4.89	4.75	4.5	14.5	14.5	14.5	9.13	9.13
SPP South - Energy Price - 1H2023	4131	4/23/2034	4/23/2034	9.13	9.13	9.13	9.13	9.13	9.13	14.5	4.7	4.39	4.23	4.2	4.24	4.4	4.47	4.47	4.78	4.94	14.5	14.5	14.67	15.09	14.5	9.13	9.13
SPP South - Energy Price - 1H2023	4132	4/24/2034	4/24/2034	9.48	9.48	9.48	9.48	9.48	9.48	9.82	4.18	1.53	1.46	1.66	1.93	4.18	4.18	11.34	11.14	11.34	11.34	11.34	11.34	11.34	11.34	9.48	9.48
SPP South - Energy Price - 1H2023	4133	4/25/2034	4/25/2034	9.6	9.6	9.6	9.6	9.6	9.6	11.47	11.47	11.47	11.47	11.47	11.79	11.77	11.86	12.26	12.26	13.08	12.26	12.26	12.67	12.1	12.26	10.52	9.79
SPP South - Energy Price - 1H2023	4134	4/26/2034	4/26/2034	9.76	9.62	9.62	9.59	9.56	9.76	11.42	11.42	11.42	11.84	11.42	11.42	11.86	11.86	11.51	11.86	11.86	11.86	11.87	12.62	11.86	11.78	9.56	9.56
SPP South - Energy Price - 1H2023	4135	4/27/2034	4/27/2034	9.28	9.32	9.28	9.29	9.43	9.71	11.13	11.13	11.13	11.13	10.24	11.13	11.13	11.13	10.93	1.67	3.36	11.13	11.13	11.13	11.13	11.13	9.28	9.28
SPP South - Energy Price - 1H2023	4136	4/28/2034	4/28/2034	9.1	9.1	9.1	9.1	9.21	9.1	10.94	9.59	0.38	0.99	1.16	1.16	1.07	0.65	0.75	4.68	10.37	10.94	9.54	10.94	10.94	10.94	9.1	9.1
SPP South - Energy Price - 1H2023	4137	4/29/2034	4/29/2034	9.1	9.1	9.1	9.1	9.1	9.1	14.46	14.46	4.61	4.61	2.54	1.28	3.36	5.01	4.61	8.43	8.36	14.46	14.46	14.46	14.46	14.46	9.1	9.1
SPP South - Energy Price - 1H2023	4138	4/30/2034	4/30/2034	9.1	9.1	9.1	9.1	9.1	9.1	14.46	3.47	2.35	2.25	3.76	2.96	3.47	3.59	4.61	8.44	8.81	14.46	14.46	14.46	14.46	14.46	9.1	9.1
SPP South - Energy Price - 1H2023	4139	5/1/2034	5/1/2034	10.92	10.92	10.92	10.92	11.33	11.51	14.38	13.89	2.4	2.58	2.41	2.81	2.58	1.97	2.81	1.14	4.62	6.83	13.89	13.89	13.92	13.89	10.92	10.92
SPP South - Energy Price - 1H2023	4140	5/2/2034	5/2/2034	11.14	11.14	11.14	11.14	11.14	11.14	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	13.87	14.12	14.12	14.12	14.12	14.12	14.12	11.14	11.14
SPP South - Energy Price - 1H2023	4141	5/3/2034	5/3/2034	11.49	11.49	11.49	11.49	11.49	11.76	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	14.51	9	14.51	14.51	14.51	14.54	14.51	11.49	11.49
SPP South - Energy Price - 1H2023	4142	5/4/2034	5/4/2034	12.1	12.1	12.1	12.1	12.1	12.41	15.17	5.32	2.71	2.13	2.41	2.81	2.81	3.83	4.37	4.91	4.88	12.45	15.17	15.17	15.17	15.17	12.1	12.1
SPP South - Energy Price - 1H2023	4143	5/5/2034	5/5/2034	11.63	11.63	11.63	11.63	11.63	11.91	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	14.67	11.81	11.63
SPP South - Energy Price - 1H2023	4144	5/6/2034	5/6/2034	11.63	11.63	11.63	11.63	11.63	11.91	13.22	13.56	13.38	13.33	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.25	13.28	11.63	11.63
SPP South - Energy Price - 1H2023	4145	5/7/2034	5/7/2034	11.63	11.63	11.63	11.63	11.63	11.63	13.53	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	13.22	11.63	11.63
SPP South - Energy Price - 1H2023	4146	5/8/2034	5/8/2034	12.12	12.12	12.12	12.12	12.12	12.12	15.2	15.2	15.2	15.1	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	12.12	12.12
SPP South - Energy Price - 1H2023	4147	5/9/2034	5/9/2034	12.28	12.28	12.28	12.28	12.28	12.28	15.37	14.64	14.6	13.43	2.41	2.81	3.19	15.37	15.37	15.37	15.37	15.37	15.37	15.37	15.37	15.37	12.28	12.28
SPP South - Energy Price - 1H2023	4148	5/10/2034	5/10/2034	12.38	12.38	12.38	12.38	12.38	12.38	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48	16.27	15.74	15.97	12.58	12.38
SPP South - Energy Price - 1H2023	4149	5/11/2034	5/11/2034	12.58	12.65	12.58	12.58	12.58	12.8	15.71	15.71	15.71	15.71	15.71	15.71	15.71	15.71	16.32	16.76	15.71	16.67	16.67	17.11	17.19	16.67	12.87	12.58

SPP South - Energy Price - 1H2023	4150	5/12/2034	5/12/2034	12.49	12.55	12.55	12.49	12.58	12.83	15.97	15.61	15.6	15.61	15.61	15.61	15.61	15.61	15.61	15.61	15.61	15.61	15.61	17.15	16.98	16.09	12.67	12.49
SPP South - Energy Price - 1H2023	4151	5/13/2034	5/13/2034	12.49	12.55	12.49	12.49	12.49	12.49	14.19	14.19	14.43	14.4	14.19	14.34	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	12.49	12.49
SPP South - Energy Price - 1H2023	4152	5/14/2034	5/14/2034	12.49	12.49	12.49	12.49	12.49	12.49	14.19	14.19	14.19	14.19	4.62	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	14.19	12.49	12.49
SPP South - Energy Price - 1H2023	4153	5/15/2034	5/15/2034	12.93	12.93	12.93	12.93	12.93	13.3	16.09	16.09	16.09	14.8	16.09	16.09	16.09	16.09	15.83	16.09	16.09	16.09	16.09	16.09	16.09	16.09	12.93	12.93
SPP South - Energy Price - 1H2023	4154	5/16/2034	5/16/2034	13.17	13.17	13.17	13.17	13.17	13.17	16.19	16.19	15.93	14.66	14.66	15.93	14.66	15.93	14.66	14.66	14.66	16.19	16.19	16.35	16.35	16.35	13.17	13.17
SPP South - Energy Price - 1H2023	4155	5/17/2034	5/17/2034	4	3.67	3.42	3.24	3.71	3.71	3.99	2.58	2.22	2.13	2.41	2.58	2.58	3.83	4.37	4.02	4.88	4.5	13.83	16.03	16.03	16.03	12.87	12.87
SPP South - Energy Price - 1H2023	4156	5/18/2034	5/18/2034	12.72	11.84	12.72	12.72	12.72	12.72	13.83	2.79	2.22	2.13	2.41	2.81	3.19	5.33	4.91	4.91	7	14.2	15.86	15.86	15.86	15.86	12.72	12.72
SPP South - Energy Price - 1H2023	4157	5/19/2034	5/19/2034	12.15	12.15	12.15	12.15	12.15	12.15	15.24	15.24	15.24	15.24	15.24	15.24	15.24	14.02	15.24	14.68	15.24	15.24	15.24	15.24	15.24	13.87	12.15	12.15
SPP South - Energy Price - 1H2023	4158	5/20/2034	5/20/2034	4.31	3.67	3.67	3.99	3.67	3.99	3.99	2.73	3.55	0.61	4.17	6.95	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	12.15	12.15
SPP South - Energy Price - 1H2023	4159	5/21/2034	5/21/2034	12.15	12.15	12.15	12.15	12.15	12.15	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.24	13.81	13.81	14.4	13.81	14.38	12.15	12.15
SPP South - Energy Price - 1H2023	4160	5/22/2034	5/22/2034	10.84	10.84	10.84	10.84	10.84	10.84	12.32	2.58	2.22	5.57	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	14.06	13.8	11.29	10.84
SPP South - Energy Price - 1H2023	4161	5/23/2034	5/23/2034	12.62	12.62	12.62	12.62	12.62	12.62	15.75	15.75	15.75	15.75	15.75	15.75	15.96	15.75	15.75	15.75	15.75	15.92	15.96	17.2	17.19	16.99	13.07	12.62
SPP South - Energy Price - 1H2023	4162	5/24/2034	5/24/2034	13.18	13.28	13.29	13.25	13.25	13.57	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	16.36	13.18	13.18
SPP South - Energy Price - 1H2023	4163	5/25/2034	5/25/2034	13.27	13.27	13.26	13.26	13.27	13.27	16.45	16.46	16.46	16.45	16.46	16.45	16.45	16.46	16.46	16.46	16.46	16.46	16.46	16.46	16.46	16.46	13.27	13.27
SPP South - Energy Price - 1H2023	4164	5/26/2034	5/26/2034	13.5	13.5	13.5	13.5	13.5	13.5	16.71	16.71	16.71	14.69	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	13.5	13.5
SPP South - Energy Price - 1H2023	4165	5/27/2034	5/27/2034	13.5	13.5	13.5	13.5	13.5	13.5	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	13.5	13.5
SPP South - Energy Price - 1H2023	4166	5/28/2034	5/28/2034	13.5	13.5	13.5	13.5	13.5	13.5	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	16.41	15.34	13.5	13.5
SPP South - Energy Price - 1H2023	4167	5/29/2034	5/29/2034	13.5	13.5	13.5	13.5	13.5	13.5	16.2	14.58	1.2	14.51	15.77	14.51	14.58	16.01	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	13.5	13.5
SPP South - Energy Price - 1H2023	4168	5/30/2034	5/30/2034	13	13	13	13	13	13	16.16	16.17	16.16	16.17	16.17	16.17	16.17	16.17	16.17	16.17	16.17	16.17	17.03	17.21	17.23	17.21	13.18	13.3
SPP South - Energy Price - 1H2023	4169	5/31/2034	5/31/2034	13.07	13.07	13.07	13.07	13.18	13.27	16.24	16.24	16.19	16.21	16.19	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	16.24	13.07	13.07
SPP South - Energy Price - 1H2023	4170	6/1/2034	6/1/2034	18.99	18.99	18.99	18.99	18.99	18.99	22.7	22.7	22.7	22.44	22.7	22.7	22.7	20.89	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	18.99	18.84
SPP South - Energy Price - 1H2023	4171	6/2/2034	6/2/2034	18.84	18.84	18.84	18.84	18.84	18.84	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	22.55	18.84	18.84
SPP South - Energy Price - 1H2023	4172	6/3/2034	6/3/2034	18.84	18.84	18.84	18.84	18.84	18.84	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	18.84	18.84
SPP South - Energy Price - 1H2023	4173	6/4/2034	6/4/2034	18.84	18.84	18.84	18.84	18.84	18.95	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.66	20.05	19.62	18.84	19.08
SPP South - Energy Price - 1H2023	4174	6/5/2034	6/5/2034	20.59	20.59	20.59	20.59	20.59	20.59	24.35	24.35	24.5	26.01	24.7	24.93	24.35	24.35	24.35	24.35	24.35	24.35	27.82	24.94	24.94	25.84	20.59	22.25
SPP South - Energy Price - 1H2023	4175	6/6/2034	6/6/2034	22.7	22.82	22.7	22.42	22.67	22.8	27.92	28.04	28.05	26.93	26.99	27.51	26.24	28.05	30.31	30.31	29.94	29.94	29.94	30.31	30.31	29.94	24.54	22.42
SPP South - Energy Price - 1H2023	4176	6/7/2034	6/7/2034	22.99	22.99	22.99	23.13	23.51	23.92	28.03	28.08	29.46	29.01	29.03	29.03	29.04	30.66	34.16	32.35	30.98	30.98	30.59	31.53	30.98	30.62	25.33	24.79
SPP South - Energy Price - 1H2023	4177	6/8/2034	6/8/2034	24.49	23.58	23.08	23.16	23.35	23.58	26.42	28.01	27.93	28.05	28.97	28.06	29.98	30.04	30.41	33.1	31.47	30.41	30.41	30.41	30.41	29.4	22.51	22.51
SPP South - Energy Price - 1H2023	4178	6/9/2034	6/9/2034	22.09	22.23	21.62	21.7	21.85	22.55	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	25.39	26.04	25.46	22.39	21.08
SPP South - Energy Price - 1H2023	4179	6/10/2034	6/10/2034	20.64	20.64	20.64	20.64	20.64	20.64	21.07	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	20.64	20.64
SPP South - Energy Price - 1H2023	4180	6/11/2034	6/11/2034	20.64	20.64	20.64	20.64	20.64	20.64	21.07	21.07	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	20.64	20.64
SPP South - Energy Price - 1H2023	4181	6/12/2034	6/12/2034	22.59	22.59	22.59	22.59	22.59	22.59	26.03	21	21	10.25	21	21	23.1	23.04	26.41	15.66	26.39	26.41	26.41	26.41	26.41	26.41	22.59	22.59
SPP South - Energy Price - 1H2023	4182	6/13/2034	6/13/2034	20.72	19.83	20.72	3.81	20.72	20.72	19.27	2.18	1.96	17.08	24.48	24.49	24.48	24.48	24.48	24.49	24.49	24.49	24.49	24.49	24.49	24.49	20.72	20.72
SPP South - Energy Price - 1H2023	4183	6/14/2034	6/14/2034	20.67	20.67	20.67	20.67	20.67	20.67	24.43	24.43	22.48	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.57	24.43	21.87	20.67
SPP South - Energy Price - 1H2023	4184	6/15/2034	6/15/2034	21.87	21.87	21.87	21.87	21.87	21.87	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	27.82	26.99	22.39	22
SPP South - Energy Price - 1H2023	4185	6/16/2034	6/16/2034	22	22	22	22	22	22	25.81	25.81	25.81	25.81	25.81	25.81	25.81	25.81	28.07	28.07	28.87	28.19	29.46	29.46	29.46	28.68	24.43	24.08
SPP South - Energy Price - 1H2023	4186	6/17/2034	6/17/2034	22.78	22	22	22	22.25	22	22.47	22.47	22.75	23.36	22.92	24.59	23.87	24.59	22.75	22.47	22.47	22.47	24.59	24.99	22.47	22.47	23.73	22
SPP South - Energy Price - 1H2023	4187	6/18/2034	6/18/2034	23.07	22	22	22	22	22	22.47	22.47	22.71	24.59	22.62	22.62	24.59	24.87	24.59	22.88	24.59	25.27	24.59	25.27	25.76	25.27	24.75	23.49
SPP South - Energy Price - 1H2023	4188	6/19/2034	6/19/2034	23.74	23.46	23.34	23.21	23.31	24.2	26.9	27.27	26.9	26.9	26.9	27.25	26.9	26.9	26.9	26.9	26.9	26.9	27.97	28.11	31.08	28.26	25.26	24.66
SPP South - Energy Price - 1H2023	4189	6/20/2034	6/20/2034	25.36	24.41	23.61	23.36	24.26	24.66	28.69	28.67	29.32	28.18	28.1	27.75	30.57	30.57	30.57	28.12	28.1	29.28	30.53	30.98	30.57	30.98	26.03	25.55
SPP South - Energy Price - 1H2023	4190	6/21/2034	6/21/2034	26.03	26.11	26.03	26.03	26.03	26.03	28.01	29.19	28.13	28.12	28.49	28.06	28.15	28.15	29.29	27.61	28.15	29.08	29.29	31.48	31.9	31.9	26.76	26.11
SPP South - Energy Price - 1H2023	4191	6/22/2034	6/22/2034	26.27	26.11	26.11	26.11	26.11	26.11	29.58	30.72	30.02	30.47	30.29	28.33	29.22	31.76	32.19	31.76	32.05	32.19	35.99	32.19	36.18	32.19	27.04	26.31
SPP South - Energy Price - 1H2023	4192	6/23/2034	6/23/2034	25.54	25.33	25.33	25.33	25.47	25.54	28.69	28.76	29.02	28.9	29.03	29.03	29.16	30.76	30.82	31.15	29.05	30.76	30.76	30.76	30.76	30.04	25.76	25.33
SPP South - Energy Price - 1H2023	4193	6/24/2034	6/24/2034	25.33	25.33	25.01	24.75	23.8	23.92	24.5	24.59	25.87	24.98	23.62	23.8	25.87	25.87	26.6	25.87	23.8	25.87	25.87	25.87	25.87	25.75	23.13	23.13
SPP South - Energy Price - 1H2023	4194	6/25/2034	6/25/2034	23.13	23.13	23.13	23.54	23.59	23.13	23.95	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	25.68	25.68	25.68	23.62	23.62	25.18	23.62	23.13	23.13
SPP South - Energy Price - 1H2023	4195	6/26/2034	6/26/2034	22.05	21.68	21.68	21.68	21.68	22.41	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	21.68	21.68
SPP South - Energy Price - 1H2023	4196	6/27/2034	6/27/2034	21.92	21.92	21.92	21.92	21.92	21.92	25.72	25.72	25.72	26.9	26.2	25.76	26.9	25.76	26.9	26.9	27.87	25.72	25.98	27.19	27.57	28.09	23.31	22.63
SPP South - Energy Price - 1H2023	4197	6/28/2034	6/28/2034	23.76	22.92	22.86	23.31	23.63	23.23	26.63	26.25	26.25	26.25	26.25	26.25	26.25	26.25	26.25	26.25	26.25	26.25	26.55	26.55	27.53	26.94	22.44	22.44
SPP South - Energy Price - 1H2023	4198	6/29/2034	6/29/2034	20.64	20.47	20.16	20.16	20.6	20.29	23.91	23.91	23.91	23.91	23.91	23.91	23.91	23.91	24.96	24.96	23.91	23.91	24.96	24.91	24.33	24.72	20.16	20.16
SPP South - Energy Price - 1H2023	4199	6/30/2034	6/30/2034	23	22.82	22.76	22.76	22.96	22.74	26.55	26.37	28.36	28.04	26.16	28	29.85	28.99	29.85	29.85	28.31	29.85	32.35	30.22	29.89	28.52	24.32	24.46
SPP South - Energy Price - 1H2023	4200	7/1/2034	7/1/2034	41.1	39.77	38.51	38.56	40.99	39.13	43.09	43.49	45.07	42.64	41.21	44.92	46.35	45.36	46.35	46.36	46.35	46.99	45.1	43.56	45.1	45.1	40.99	40.83
SPP South - Energy Price - 1H2023	4201	7/2/2034	7/2/2034	40.94	40.8	38.51	38.56	38.84	38.47	41.21	41.59	41.96	41.96	41.21	42.35	41.96	45.1	45.1	45.1	43.09	42.83	46.36	46.35	46.38	46.35	42.13	40.99
SPP South - Energy Price - 1H2023	4202	7/3/2034	7/3/2034	41.69	40.47	40.37	40.41	40.69	41.54	42.79	42.16	40.22	42.21	42.87	45.89	49.59	50.54	51.99	51.99	46.47	46.47	46.47	45.89	46.47	46.47	41.69	41.69
SPP South - Energy Price - 1H2023	4203	7/4/2034	7/4/2034	41.73	39.29	38.09	39.24	41.69	41.54	44.27	45.22	45.68	50.51	50.73	50.43	52.92	51.99	53.29	53.97	53.97	55.42	59.43	49.65	54.8	55.5	48.06	45.71
SPP South - Energy Price - 1H2023	4204	7/5/2034	7/5/2034	44.15	44.15	43.07	42.99	43.07	43.07	46.09	46.67	46.67	47.94	53.89	53.08	52.81	52.23	52.23	48.59	46.67	53.95	55.07	55.35	52.81	52.23	49.18	44.27
SPP South - Energy Price - 1H2023	4205	7/6/2034	7/6/2034	42.1	40.74	41.7	41.87	41.87	41.87	44.52	44.61	44.46	44.09	45	43.32	45	45.01	50.87	50.87	52.33	50.87	54	53.9	46.8	50.87	51.3	44.15
SPP South - Energy Price - 1H2023	4206	7/7/2034	7/7/2034	44.14	42.16	41.85	41.42	41.42	41.3	43.6	43.85	44.09	45.13	47.16	46.49	50.36	51.45	51.63	51.8	52	52.1	52.98	50.36	52.7	51.8	49.25	49.22
SPP South - Energy Price - 1H2023	4207	7/8/2034	7/8/2034	47.38	44.23	41.85	41.77	41.85	41.42	44.34	44.34	43.28	43.16	44.34	44.34	45.57	44.34	46.32	48.02	47.87	54.16	54.16	58.08	54.16	54.16	46.17	42.27
SPP South - Energy Price - 1H2023	4208	7/9/2034	7/9/2034	42.61	41.34	40.3	40.3	40.3	40.3	44.34	44.34	44.34	42.42	44.34	44.34	44.34	45.11	45.57	44.84	45.57	46.31	45.57	48.58	46.79	45.57	40.42	40.3
SPP South - Energy Price - 1H2023	4209	7/10/2034	7/10/2034	41.52	41.41	40.3	39.27	40.3	41.39	43.57	42.44	41.51	42.07	42.05	41.84	42.3	40.08	42.13	40.08	40.08	41.7	44.54	43.57	44.21	43.59	40.43	40.43
SPP South - Energy Price - 1H2023	4210	7/11/2034	7/11/2034	40	40.43	40.43	39.64	39.92	41.91	45.6	45.6	43.98	43.16	43.66	46.28	46.28	46.28	46.28	50.06	46.28	46.87	46.28	46.28	46.28	46.2	42.11	42.11
SPP South - Energy Price - 1H2023	4211	7/12/2034	7/12/2034	42.24	42.24	42.24	42.24	42.47	42.24	44.31	44.31	40.87	41.45	40.87	41.42	43.69	43.39	42.89	45.09	42.91	44.31	47.22	46.62	42.9	42.9	41.16	41.3
SPP South - Energy Price - 1H2023	4212	7/13/2034	7/13/2034	40.06	40.06	41.3	41.77	41.3	41.3	42.06	42.14	42.06	42.06	42.97	43.08	42.98	43.08	42.06	43	42.06	42.06	43.08	48.58	42.06	47.95	43.89	43.89
SPP South - Energy Price - 1H2023	4213	7/14/2034	7/14/2034	42.58	38.89	38.89	38.89	38.89	41.22	40.96	44.32	42.89	44.33	44.49	44.35	44.36	45.55	46.72	44.36	42.98	46.72	47.32	47.32	47.32	47.32	44.15	42.58
SPP South - Energy Price - 1H2023	4214	7/15/2034	7/15/2034	42.58	42.29	41.85	41.77	41.58	40.97	42.78	42.78	42.78	43.1	43.57	42.78	44.11	45.38	45.8	45.68	46.85	46.85	48.58	46.85	46.85	46.85	42.58	42.27
SPP South - Energy Price - 1H2023	4215	7/16/2034	7/16/2034	38.89	38.89	38.89	38.89	40.38	40.01	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	46.72	46.85	48.58	48.58	43.6	42.58
SPP South - Energy Price - 1H2023	4216	7/17/2034	7/17/2034	42.06	41.74	40.37	41.34	41.46	41.1	42.57	42.76	42.82	44.25	45.72	45.72	48.14	51.08	51.08	51.08	48.71	52.82	51.08	51.08	51.08	51.08	50.01	44.15
SPP South - Energy Price - 1H2023	4217	7/18/2034	7/18/2034	42.64	42.64	41.85	41.77	42.4	42.2	44.25	45.47	45.47	45.48	42.87	46.04	46.04	46.04	46.04	46.04	49.01	46.04	53.84	46.04	46.04	51.47	44.79	41.24
SPP South - Energy Price - 1H2023	4218	7/19/2034	7/19/2034	39.26	39.55	39.03	39.55	39.55	38.15	39.93	39.36	39.36	39.36	39.36	42.74	42.8	39.36	39.77	42.83	44.18	42.83	44.92	46.17	42.07	42.83	40.65	38.55
SPP South - Energy Price - 1H2023	4219	7/20/2034	7/20/2034	37.79	37.49	37.39	38.55	37.72	39.1	41.82	39.85	42.26	41.45	41.97	44.15	42.76	44.15	46.12	44.39	42.79	44.15	44.67	44.67	48.39	44.67	40.93	40.5
SPP South - Energy Price - 1H2023	4220	7/21/2034	7/21/2034	39.32	39.32	39.32	39.32	39.32	39.32	41.71	42.67	43.67	44.18	44.16	44.18	43.68	43.67	43.68	43.68	43.68	44.18	45.85	44.18	44.2	43.68	39.37	40.06
SPP South - Energy Price - 1H2023	4221	7/22/2034	7/22/2034	39.32	39.32	39.32	39.32	39.32	39.32	41.34	43.26	41.15	43.26	43.26	43.26	44.46	43.26	43.26	44.08	44.46	43.26	44.73	43.62	44.46	43.26	38.48	37.16
SPP South - Energy Price - 1H2023	4222	7/23/2034	7/23/2034	37.5	37.12	36.73	36.65	39.32	35.98	39.58	39.95	39.56	39.56	39.56	39.58	41.04	43.26	43.26	43.26	43.26	44.44	44.46	43.61	43.26	44.46	39.32	39.32
SPP South - Energy Price - 1H2023	4223	7/24/2034	7/24/2034	39.29	36.97	36.87	37.61	38.17	39.29	41.18	38.53	38.21	38.58	38.21	42.53	43.64	42.68	43.55	43.64	44.15	44.15	49.17	44.15	43.64	43.64	40.37	38.15
SPP South - Energy Price - 1H2023	4224	7/25/2034	7/25/2034	38.2	39.59	38.2	37.73	38.2	38.14	41	40.56	38.46	41.56	42.7	40.92	43.92	43.92	43.92	43.92	43.92	43.92	48.04	44.44	44.21	43.92	39.96	40.6
SPP South - Energy Price - 1H2023	4225	7/26/2034	7/26/2034	39.98	39.96	39.6	36.55	38.71	38.87	41.33	42.43	42.76	44.29	44.29	44.29	44.29	44.82	45.26	44.82	44.82	44.83	51.1	48.54	44.83	43.81	40.92	40.92
SPP South - Energy Price - 1H2023	4226	7/27/2034	7/27/2034	36.93	40.4	40.4	40.4	40.4	41.25	44.68	43.3	42.26	44.23	44.68	48.9	50.47	51.84	51.77	51.01	50.47	51.57	51.74	51.57	50.47	46.93	41.52	41.52
SPP South - Energy Price - 1H2023	4227	7/28/2034	7/28/2034	40.05	41.16	40.46	41.16	41.16	41.51	44.2	43.31	44.35	44.88	44.35	44.35	46.64	50.64	51.8	50.79	50.79	50.79	51.58	51.49	48.88	44.88	41.16	40.05
SPP South - Energy Price - 1H2023	4228	7/29/2034	7/29/2034	39.3	38.5	36.61	37.73	39.44	36.61	42.68	44.06	45.05	45.28	48.52	48.58	48.58	48.58	48.58	48.58	48.58	45.28	48.58	44.58	45.08	45.28	40.05	40.05
SPP South - Energy Price - 1H2023	4229	7/30/2034	7/30/2034	36.61	38.71	38.72	36.61	36.61	36.61	40.48	41.12	40.28	40.28	40.28	44.06	44.06	44.92	45.57	45.28	45.57	47.15	47.15	50.29	48.61	46.12	41.16	40.05
SPP South - Energy Price - 1H2023	4230	7/31/2034	7/31/2034	39.43	39.43	39.43	39.4	38.88	39.43	42.33	42.41	40.59	42.67	43.77	44.28	44.28	47.83	48.16	48.32	50.48	50.88	50.79	51.58	50.48	50.48	44.5	44.5
SPP South - Energy Price - 1H2023	4231	8/1/2034	8/1/2034	43.93	43.93	43.93	42.73	42.73	43.93	49.64	48.23	47.99	47.21	49.77	50.28	56.33	58.72	58.86	57.71	58.44	59.51	61.41	59.3	59.58	58.86	45.76	46.7
SPP South - Energy Price - 1H2023	4232	8/2/2034	8/2/2034	44.45	40.16	42.87	39.83	44.08	44.45	49.67	49	45.73	48.42	50.41	50.82	54.98	56.13	56.26	56.61	56.61	57.99	57.29	57.29	56.61	51.07	44.73	44.17

SPP South - Energy Price - 1H2023	4233	8/3/2034	8/3/2034	44.02	44.02	40.18	40.18	43.06	43.17	48.95	47.83	50.92	48.21	50.92	50.92	50.92	51.08	47.08	51.6	53.44	53.76	57.93	52.61	51.11	50.92	44.02	43.76
SPP South - Energy Price - 1H2023	4234	8/4/2034	8/4/2034	43.76	43.76	43.76	43.35	43.76	44.45	45.67	45.71	44.99	44.44	45.56	45.74	45.94	47.38	47.27	50.67	49.11	50.67	51.76	52.66	50.67	50.67	44.45	43.76
SPP South - Energy Price - 1H2023	4235	8/5/2034	8/5/2034	43.76	43.76	43.76	43.35	42.83	42.31	40.36	38.4	38.23	38.23	38.23	39.13	41.87	41.87	41.87	41.87	42.27	42.53	41.87	42.53	42.53	42.53	44.45	43.76
SPP South - Energy Price - 1H2023	4236	8/6/2034	8/6/2034	43.76	43.76	44.45	43.76	43.76	43.76	41.87	41.6	39.12	38.73	41.6	41.87	41.87	41.87	41.87	41.87	42.14	43.05	43.05	44.03	44.03	43.05	43.76	43.76
SPP South - Energy Price - 1H2023	4237	8/7/2034	8/7/2034	43.48	43.48	40.32	43.73	44.09	44.18	48.5	48.44	47.54	48.58	47.52	51.08	51.08	51.08	51.76	51.76	51.76	52.56	51.76	51.76	51.76	50.98	44.17	44.09
SPP South - Energy Price - 1H2023	4238	8/8/2034	8/8/2034	43.29	43.29	43.29	42.93	43.29	43.29	48.21	48.59	46.67	46.05	47.25	50.2	50.2	50.2	50.2	50.2	48.69	47.66	50.2	50.2	50.2	50.2	43.29	43.29
SPP South - Energy Price - 1H2023	4239	8/9/2034	8/9/2034	36.31	36.31	36.31	36.31	33.26	36.16	39.33	39.69	37.85	37.85	37.85	37.85	37.85	37.85	41.3	37.99	42.51	39.25	43.3	43.3	41.86	41.18	33.47	33.26
SPP South - Energy Price - 1H2023	4240	8/10/2034	8/10/2034	29.91	29.91	29.91	29.91	29.91	29.91	35	34.86	34.55	34.55	34.55	34.55	34.55	35.5	39.6	39.6	39.21	39.6	39.6	39.93	39.93	39.36	32.59	32.59
SPP South - Energy Price - 1H2023	4241	8/11/2034	8/11/2034	31.12	30.88	31.12	29.6	29.6	31.12	35.63	36.2	34.25	34.25	34.25	34.25	34.25	37.5	35.42	38.73	38.9	39.26	39.57	39.57	38.79	38.25	32.24	31.5
SPP South - Energy Price - 1H2023	4242	8/12/2034	8/12/2034	29.6	29.6	29.6	29.6	29.6	29.6	28.8	29.35	29.29	29.69	29.98	31.66	31.66	32.92	33.46	32.5	32.16	33.18	32.61	32.33	30.85	30.85	32.24	29.6
SPP South - Energy Price - 1H2023	4243	8/13/2034	8/13/2034	29.6	29.6	29.6	29.6	29.6	29.6	28.33	28.53	28.33	28.33	28.33	28.33	28.33	30.79	28.33	30.79	28.33	28.33	33.32	34.28	32.29	31.66	33.09	32.95
SPP South - Energy Price - 1H2023	4244	8/14/2034	8/14/2034	37.23	37.23	37.23	37.23	34.09	36.45	42	39.69	38.66	38.66	39.5	41.31	44.2	41.93	42.8	44.2	44.2	40.96	44.58	44.67	44.67	44.2	38.21	37.96
SPP South - Energy Price - 1H2023	4245	8/15/2034	8/15/2034	43.63	43.63	42.11	42.11	42.11	42.19	45.21	44.44	44.32	44.32	45.41	45.74	46.33	46.76	46.7	51.2	48.99	50.54	56.92	51.6	51.2	50.53	43.63	43.63
SPP South - Energy Price - 1H2023	4246	8/16/2034	8/16/2034	44.45	44.45	43.65	40.9	43.23	43.65	48.58	46.68	45.36	45.79	45.8	45.81	47.61	50.55	52.4	52.4	51.71	51.71	61.21	58.91	52.4	52.26	44.45	44.45
SPP South - Energy Price - 1H2023	4247	8/17/2034	8/17/2034	44.42	44.42	44.42	44.42	44.42	44.42	48.73	47.82	45.02	46.73	46.57	47.46	49.5	51.32	51.32	52.01	56.39	56.35	60.91	61.44	58.43	57.21	50.42	44.57
SPP South - Energy Price - 1H2023	4248	8/18/2034	8/18/2034	44.15	43.49	44.15	43.39	43.63	44.15	49.86	47.88	46.36	45.71	49.86	49.86	50.1	50.5	56.6	56.6	56.6	56.6	56.6	56.6	56.6	50.5	44.45	44.15
SPP South - Energy Price - 1H2023	4249	8/19/2034	8/19/2034	42.94	42.94	42.94	42.94	42.94	42.94	41.09	41.09	38.37	40.02	41.09	41.09	42.53	49.32	50.29	50.29	54.38	55.38	55.25	55.83	54.38	50.29	44.15	44.15
SPP South - Energy Price - 1H2023	4250	8/20/2034	8/20/2034	44.15	42.94	42.94	42.62	42.09	42.94	41.09	39.74	41.09	42.24	42.24	42.53	42.24	46.45	44.72	50.96	51.76	55.38	55.25	51.81	51.76	49.76	44.45	44.37
SPP South - Energy Price - 1H2023	4251	8/21/2034	8/21/2034	44.37	44.26	43.16	44.37	44.33	44.37	50.72	52.99	50.72	53.69	59.71	56.86	59.07	56.86	60.03	58.12	59.15	59.52	61.55	60.95	59.71	56.86	52.55	44.37
SPP South - Energy Price - 1H2023	4252	8/22/2034	8/22/2034	44.45	44.45	44.45	43.81	41.08	44.45	52.43	51.91	48.72	51.91	52.61	50.48	51.41	51.65	59.17	52.23	52.61	52.61	59.17	52.61	51.91	51.91	45.02	45.02
SPP South - Energy Price - 1H2023	4253	8/23/2034	8/23/2034	44.45	41.36	41.25	44.45	41.21	44.45	49.83	50.39	48.46	52.06	52.06	57.3	59.35	62.35	64.65	67.73	77.11	67.73	70.62	68.42	65.06	62.94	57.54	51.28
SPP South - Energy Price - 1H2023	4254	8/24/2034	8/24/2034	45.74	45.74	44.45	45.74	45.38	46.02	55.41	52.62	52.62	53.13	53.35	53.35	60.06	60.06	60.69	60.85	60.69	63.35	66.91	70.07	60.69	60.06	53.01	47.04
SPP South - Energy Price - 1H2023	4255	8/25/2034	8/25/2034	45.66	46.7	45.72	46.18	46.7	46.7	53.02	59.66	59.66	59.66	64.53	68.58	63.86	59.66	59.7	63.18	61.35	71.13	59.66	59.66	53.02	53.02	46.02	46.7
SPP South - Energy Price - 1H2023	4256	8/26/2034	8/26/2034	45.41	44.68	45.41	44.68	44.68	45.41	42.75	42.53	41.29	42.53	43.45	46.61	53.28	53.28	53.28	55.7	53.28	53.28	59.5	53.28	53.28	44.69	45.41	45.65
SPP South - Energy Price - 1H2023	4257	8/27/2034	8/27/2034	45.3	45.41	43.89	43.6	43.18	44.45	42.53	42.53	40.32	41.3	41.3	42.53	43.45	43.45	43.46	43.45	43.45	42.53	44.69	46.35	44.89	44.12	45.41	44.45
SPP South - Energy Price - 1H2023	4258	8/28/2034	8/28/2034	37.57	37.57	37.03	36.06	36.06	36.81	40.9	38.54	37.62	37.93	38.52	38.27	37.62	42.93	42.93	43.04	43.04	44.8	47.73	48.05	48.05	45.31	40.06	39.08
SPP South - Energy Price - 1H2023	4259	8/29/2034	8/29/2034	42.67	42.67	42.67	42.67	42.67	43.87	49.59	46.68	45.46	45.93	45.69	45.69	45.7	49.59	49.59	49.59	49.59	54.07	56.26	54.64	56.26	51.28	44.45	43.87
SPP South - Energy Price - 1H2023	4260	8/30/2034	8/30/2034	41.2	41.68	40.55	40.55	40.59	41.68	46.27	44.63	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	53.02	48.06	50.37	48.06	47.49	41.68	40.55
SPP South - Energy Price - 1H2023	4261	8/31/2034	8/31/2034	37.34	37.34	37.34	37.33	37.33	38.81	44.31	38.75	38.75	38.75	38.75	38.75	38.75	38.75	44.23	40.69	44.78	46.98	49.85	49.64	46.98	46.98	44.08	42.34
SPP South - Energy Price - 1H2023	4262	9/1/2034	9/1/2034	39.8	39.8	38.72	39.8	39.8	39.8	38.74	37.72	36.74	37.67	36.76	38.74	39.24	43.43	44.46	44.89	43.97	45.02	43.97	43.97	43.97	43.97	38.72	38.72
SPP South - Energy Price - 1H2023	4263	9/2/2034	9/2/2034	38.72	39.8	38.98	38.72	37.49	38.72	54.87	55.21	56.35	56.36	57.94	57.94	57.94	60.76	65.75	61.1	65.75	60.48	68.97	72.08	68.97	65.75	39.8	36.44
SPP South - Energy Price - 1H2023	4264	9/3/2034	9/3/2034	37.31	36.37	37.84	36.48	36.2	37.08	53.3	53.61	53.53	51.47	53.11	53.11	56.35	57.94	60.48	59.42	64.7	68.97	67.43	68.97	68.93	58.43	39.8	38.72
SPP South - Energy Price - 1H2023	4265	9/4/2034	9/4/2034	38.72	38.72	38.72	37.89	38.72	38.81	37.53	36.59	34.5	36.32	35.49	36.76	36.55	37.25	38.51	38.74	38.47	39.24	43.55	42.78	39.24	38.74	39.27	37.66
SPP South - Energy Price - 1H2023	4266	9/5/2034	9/5/2034	37.66	37.03	37.66	37.16	37.35	38.29	36.94	35.18	34.47	34.71	34.47	35.6	35.6	36.78	36.79	39.3	39.3	35.61	39.82	39.3	39.3	36.78	37.88	35.95
SPP South - Energy Price - 1H2023	4267	9/6/2034	9/6/2034	36.85	36.85	36.39	36.85	36.85	38.73	38.92	39.15	39.1	39.73	40.25	41.39	41.09	40.25	43.02	39.73	40.25	40.25	40.25	40.25	40.25	39.73	39.87	39.87
SPP South - Energy Price - 1H2023	4268	9/7/2034	9/7/2034	39.18	39.18	39.18	39.18	39.18	39.18	38.3	38.41	38.06	35.58	35.55	35.36	34.32	34.41	34.34	34.32	34.32	37.36	36.78	36.44	39.06	35.18	37.83	36.86
SPP South - Energy Price - 1H2023	4269	9/8/2034	9/8/2034	35.69	35.31	36.62	36.23	35.66	36.7	33.84	33.84	33.84	33.84	33.84	33.84	33.84	33.84	33.84	33.84	33.84	33.84	34.45	34.88	34.83	33.84	35.21	35.21
SPP South - Energy Price - 1H2023	4270	9/9/2034	9/9/2034	35.21	35.21	35.21	35.21	35.21	35.21	51.26	51.26	51.25	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	53.12	56.12	56.12	56.12	51.56	35.76	35.21
SPP South - Energy Price - 1H2023	4271	9/10/2034	9/10/2034	35.21	35.21	35.21	35.21	35.21	35.21	51.26	51.26	51.26	51.26	51.26	51.26	51.26	55.72	51.26	52.92	51.26	51.26	56.57	56.66	54.63	54.48	35.76	36.29
SPP South - Energy Price - 1H2023	4272	9/11/2034	9/11/2034	35.26	35.78	36.19	35.95	35.67	37.58	37.01	37.01	36.73	35.49	34.68	33.52	34.05	35.55	36.73	38.24	38.24	38.24	38.72	38.72	38.24	37.51	38.12	35.91
SPP South - Energy Price - 1H2023	4273	9/12/2034	9/12/2034	35.11	35.54	35.3	35.16	35.35	35.38	36.59	36.34	33.41	32.84	32.84	32.84	32.84	32.84	33.41	32.84	32.84	34.33	35.93	35.45	34.27	32.84	34.02	34.02
SPP South - Energy Price - 1H2023	4274	9/13/2034	9/13/2034	34.46	34.46	34.46	34.46	34.46	34.46	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	37.89	33.2	35.47	33.2	36.2	35.47
SPP South - Energy Price - 1H2023	4275	9/14/2034	9/14/2034	35.02	35.02	35.02	35.02	35.02	35.02	33.68	33.68	12.52	32.24	33.68	33.68	33.68	33.68	33.68	33.68	33.68	35.55	38.43	38.43	36.74	35.55	37.15	36.1
SPP South - Energy Price - 1H2023	4276	9/15/2034	9/15/2034	35.1	35.52	35.28	35.33	35.36	35.36	35.74	33.87	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	32.82	34.01	34.01
SPP South - Energy Price - 1H2023	4277	9/16/2034	9/16/2034	34.01	34.01	34.01	34.01	34.01	34.01	49.5	11.74	2.58	9.51	2.48	2.2	14.68	16.62	19.05	21.1	21.88	49.5	49.5	49.5	49.5	49.5	34.01	34.01
SPP South - Energy Price - 1H2023	4278	9/17/2034	9/17/2034	34.01	34.01	34.01	34.01	34.01	34.01	49.5	5.53	2.58	2.08	2.48	2.2	14.68	16.62	19.05	21.1	49.5	49.5	49.5	49.5	49.5	49.5	34.01	31.85
SPP South - Energy Price - 1H2023	4279	9/18/2034	9/18/2034	29.69	29.69	27.48	29.69	29.69	29.69	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	29.16	33.36	33.36	33.36	33.69	33.36	30.87	30.93	30.82	29.69
SPP South - Energy Price - 1H2023	4280	9/19/2034	9/19/2034	33.8	33.8	33.8	33.8	34.65	35.13	35.43	34.88	34.68	34.89	34.57	33.96	34.04	34.64	36.61	37.27	37.27	37.27	37.27	37.27	36.51	34.64	34.35	33.8
SPP South - Energy Price - 1H2023	4281	9/20/2034	9/20/2034	31.97	31.97	31.97	31.97	32.37	32.39	33.29	31.81	31.1	31.1	31.1	31.1	31.1	33.41	33.41	33.41	31.85	35.53	35.53	35.53	35.07	31.83	32.52	31.97
SPP South - Energy Price - 1H2023	4282	9/21/2034	9/21/2034	33.85	33.85	33.85	33.85	33.85	34.27	35.01	32.69	32.69	32.69	32.69	32.69	32.69	32.69	32.69	32.69	35.44	37.31	37.77	37.77	35.94	35.44	34.27	33.85
SPP South - Energy Price - 1H2023	4283	9/22/2034	9/22/2034	31.91	31.91	31.97	31.91	32.02	33.02	34.69	31.04	31.04	31.04	31.04	31.04	31.04	31.04	31.04	31.04	31.04	32.19	35.42	32.25	31.04	31.04	31.91	31.91
SPP South - Energy Price - 1H2023	4284	9/23/2034	9/23/2034	31.91	31.91	31.91	31.91	31.91	31.91	46.44	11.74	10.26	2.08	10.26	2.2	2.75	13.57	13.57	21.1	21.88	46.44	46.45	46.44	46.44	46.44	31.91	31.91
SPP South - Energy Price - 1H2023	4285	9/24/2034	9/24/2034	14.85	13.48	13.08	12.48	12	11.17	13.89	0	0	0	0	0	0	0	4.75	5.11	4.7	46.45	46.45	46.44	46.44	46.44	14.59	14.08
SPP South - Energy Price - 1H2023	4286	9/25/2034	9/25/2034	12.48	12.48	13.08	12.48	12	14.28	15.98	8.66	7.75	6.88	7.48	10.38	16.33	30.92	30.92	30.92	30.92	30.92	35.33	35.33	34.68	30.92	31.77	31.77
SPP South - Energy Price - 1H2023	4287	9/26/2034	9/26/2034	33.94	33.94	33.94	33.94	33.94	33.94	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	33.47	37.39	37.39	36.72	35.5	35.5	34.35	33.94
SPP South - Energy Price - 1H2023	4288	9/27/2034	9/27/2034	34.07	34.07	34.07	34.07	34.07	34.07	35.45	34.68	36.06	36.72	36.08	35.45	35.69	35.74	37.52	37.52	37.52	37.52	37.52	37.52	36.69	35.51	34.46	34.07
SPP South - Energy Price - 1H2023	4289	9/28/2034	9/28/2034	34.29	34.29	34.29	34.29	34.29	35	35.46	35.45	33.06	33.06	33.06	33.06	33.06	33.06	33.06	33.06	33.06	35.49	33.06	33.06	33.06	33.06	34.29	34.29
SPP South - Energy Price - 1H2023	4290	9/29/2034	9/29/2034	34.58	34.58	34.58	34.58	34.57	34.58	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	34.58	34.58
SPP South - Energy Price - 1H2023	4291	9/30/2034	9/30/2034	34.57	34.57	34.57	34.57	34.58	34.58	50.33	50.33	4.36	0	0	0	0	0	0	0	4.61	18.75	50.33	50.33	18.4	20.49	13.74	13.74
SPP South - Energy Price - 1H2023	4292	10/1/2034	10/1/2034	16.06	16.06	16.06	16.06	16.06	16.06	27.37	8.74	6.8	2.93	2.93	1.91	2.44	3.19	2.72	2.93	27.37	27.37	28.74	27.37	27.37	27.37	16.06	16.06
SPP South - Energy Price - 1H2023	4293	10/2/2034	10/2/2034	16.32	16.32	16.32	16.32	16.32	16.32	24.01	24.01	22.09	23.26	23.35	24.01	24.01	24.01	24.01	24.01	24.01	24.01	26.3	25.38	24.01	24.01	16.32	16.32
SPP South - Energy Price - 1H2023	4294	10/3/2034	10/3/2034	15.5	15.5	15.5	15.5	15.5	15.5	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	15.5	15.5
SPP South - Energy Price - 1H2023	4295	10/4/2034	10/4/2034	15.35	15.35	15.35	15.35	15.35	15.35	22.74	22.74	22.74	6.16	20.92	8.25	22.74	20.92	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	15.35	15.35
SPP South - Energy Price - 1H2023	4296	10/5/2034	10/5/2034	15.98	15.97	15.97	15.97	15.97	15.97	23.56	8.67	1.35	1.23	1.19	6.27	7.31	8.28	23.56	23.56	23.56	23.56	26.01	23.56	23.56	23.56	15.98	15.98
SPP South - Energy Price - 1H2023	4297	10/6/2034	10/6/2034	16.14	16.14	16.14	16.14	16.14	16.14	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	26.75	26.73	23.78	23.78	16.14	16.14
SPP South - Energy Price - 1H2023	4298	10/7/2034	10/7/2034	16.14	16.14	16.14	16.14	16.14	16.14	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	28.5	30.26	30.62	29.51	27.53	27.53	16.14	16.14
SPP South - Energy Price - 1H2023	4299	10/8/2034	10/8/2034	16.14	16.14	16.14	16.14	16.14	16.14	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	27.53	16.14	16.14
SPP South - Energy Price - 1H2023	4300	10/9/2034	10/9/2034	16.14	16.59	16.48	16.55	17.11	17.89	27.45	26.65	26.5	27.45	27.38	25.92	25.92	25.92	25.92	27.45	27.45	29.73	30.44	27.85	27.45	26.21	18.45	18.66
SPP South - Energy Price - 1H2023	4301	10/10/2034	10/10/2034	18.66	18.22	18.24	18.66	19.67	19.67	27.89	27.89	26.75	26.3	26.3	26.3	26.3	25.17	26.06	26.3	26.3	26.67	26.97	26.75	26.3	26.3	15.95	15.95
SPP South - Energy Price - 1H2023	4302	10/11/2034	10/11/2034	15.6	15.6	15.92	15.6	15.6	17.69	25.84	25.84	25.84	27.08	25.84	25.84	25.84	25.84	25.84	25.84	25.84	26.69	27.36	27.58	28.14	27.36	19.47	19.47
SPP South - Energy Price - 1H2023	4303	10/12/2034	10/12/2034	18.76	19.67	19.47	19.67	19.67	19.67	27.61	27.08	26.06	26.05	24.91	6.27	25.17	8.28	25.82	15.87	26.05	27.61	29.16	29.99	28.66	27.61	17.82	17.43
SPP South - Energy Price - 1H2023	4304	10/13/2034	10/13/2034	17.43	17.43	17.43	17.43	17.43	17.43	26.85	25.4	25.4	25.4	25.4	25.4	25.17	25.4	25.4	25.4	25.4	26.85	28.4	27.56	26.85	25.4	18.08	16.03
SPP South - Energy Price - 1H2023	4305	10/14/2034	10/14/2034	15.27	16.01	15.85	17.43	17.43	17.43	30.43	27.95	6.8	6.91	26.03	26.03	26.03	26.03	26.03	26.03	26.03	29.72	29.72	29.72	29.71	29.71	15.27	16.6
SPP South - Energy Price - 1H2023	4306	10/15/2034	10/15/2034	17.43	16.26	17.43	17.43	16.26	17.43	30.13	26.03	26.03	24.33	7.51	26.03	26.03	11.04	26.03	26.03	26.03	29.72	30.25	30.13	27.83	29.72	17.43	18.27
SPP South - Energy Price - 1H2023	4307	10/16/2034	10/16/2034	18.78	18.13	17.94	18.13	19.67	19.67	27.52	27.5	25.98	25.98	25.98	25.98	25.98	25.98	25.98	25.98	25.98	28.65	30.45	27.52	27.52	27.52	18.99	18.07
SPP South - Energy Price - 1H2023	4308	10/17/2034	10/17/2034	18.07	18.07	18.02	18.02	18.02	19.04	27.62	26.23	26.07	26.07	26.07	26.07	25.17	26.06	25.17	26.07	26.07	26.66	27.62	27.59	26.66	26.07	16.08	15.77
SPP South - Energy Price - 1H2023	4309	10/18/2034	10/18/2034	16.08	16.08	16.08	16.08	16.08	16.48	27.62	25.51	23.59	24.1	21.57	1.44	22.74	21.7	14.96	22.58	23.81	26.47	26.47	26.47	26.06	25.17	16.08	16.08
SPP South - Energy Price - 1H2023	4310	10/19/2034	10/19/2034	16.39	16.39	17.58	18.24	17.63	18.74	26.88	26.88	26.06	24.3	17.65	20.05	26.06	24.3	26.88	26.88	26.88	26.88	26.88	26.88	26.88	26.88	16.39	16.39
SPP South - Energy Price - 1H2023	4311	10/20/2034	10/20/2034	16.19	16.19	16.19	16.19	17.51	16.19	26.62	26.62	26.62	26.06	25.17	25.17	22.77	25.17	25.17	24.05	25.17	26.62	26.62	26.62	26.62	26.62	18.51	18.51
SPP South - Energy Price - 1H2023	4312	10/21/2034	10/21/2034	18.51	18.51	18.24	18.51	16.19	18.51	27.6	31.24	6.8	6.91	27.6	27.6	27.6	19.02	19.94	27.6	31.56	33.54	33.54	33.54	31.56	31.56	18.51	18.51
SPP South - Energy Price - 1H2023	4313	10/22/2034	10/22/2034	17.15	18.51	18.51	18.51	17.74	17.94	31.79	27.6	27.6	1.64	1.59	1.64	0	0	0	2.93	27.6	33.54	33.54	33.54	33.54	33.54	18.51	18.51
SPP South - Energy Price - 1H2023	4314	10/23/2034	10/23/2034	18.16	18.1	18.22	17.23	18.1	19.23	27.34	26.74	26.74	26.74	26.08	26.06	26.06	26.74	26.74	26.74	28.4	33.97	36.59	30.74	28.4	28.4	18.62	17.62
SPP South - Energy Price - 1H2023	4315	10/24/2034	10/24/2034	18.16	16.6	16.6	16.6	16.6	16.6	27.17	25.17	5.1	2.43	1.19	1.44	1.83	2.43	2.04	4.58	20.57	25.17	27.17	27.17	23.94	13.05	7.15	6.9

SPP South - Energy Price - 1H2023	4316	10/25/2034	10/25/2034	5.23	5.32	5.11	7.15	15.98	16.52	27.05	27.05	27.05	27.05	27.05	27.05	27.05	27.05	28.76	27.05	27.05	27.05	27.05	27.05	27.05	27.05	16.52	16.52
SPP South - Energy Price - 1H2023	4317	10/26/2034	10/26/2034	15.85	15.85	15.85	15.85	15.85	15.85	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	23.39	15.85	15.31
SPP South - Energy Price - 1H2023	4318	10/27/2034	10/27/2034	15.31	15.31	15.31	15.31	15.31	15.31	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	23.26	22.83	22.69	22.69	22.69	15.31	15.31
SPP South - Energy Price - 1H2023	4319	10/28/2034	10/28/2034	15.31	15.31	15.31	15.31	15.31	15.31	26.1	26.1	26.44	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	27.26	26.27	26.1	26.1	15.31	15.31
SPP South - Energy Price - 1H2023	4320	10/29/2034	10/29/2034	15.31	15.31	15.31	15.31	15.31	15.31	26.1	26.1	2.24	2.43	2.2	1.47	0	0	2.2	1.4	2.73	26.1	26.1	26.1	26.1	26.1	15.31	15.31
SPP South - Energy Price - 1H2023	4321	10/30/2034	10/30/2034	16.84	16.84	16.84	16.84	16.84	16.84	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	25.34	24.91	24.68	24.68	24.68	16.84	16.84
SPP South - Energy Price - 1H2023	4322	10/31/2034	10/31/2034	17.05	17.05	17.05	17.05	17.05	17.05	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	24.96	26.12	26.8	24.96	24.96	24.96	17.05	17.05
SPP South - Energy Price - 1H2023	4323	11/1/2034	11/1/2034	17.93	17.93	17.93	17.93	17.93	17.93	27.84	28.02	27.84	27.97	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	17.93	17.93
SPP South - Energy Price - 1H2023	4324	11/2/2034	11/2/2034	18.37	18.37	17.93	11.78	18.37	18.37	28.43	28.43	28.43	28.43	24.91	24.91	23.03	24.91	23.1	24.91	28.44	28.44	28.44	29.4	28.44	28.44	19.13	18.58
SPP South - Energy Price - 1H2023	4325	11/3/2034	11/3/2034	18.81	18.58	18.47	18.5	18.47	19.03	28.71	28.56	28.56	24.7	8.37	8.37	8.37	8.32	5.95	5.83	28.56	28.56	28.56	28.56	28.56	28.56	18.47	18.47
SPP South - Energy Price - 1H2023	4326	11/4/2034	11/4/2034	18.47	18.47	18.47	18.47	18.47	18.47	38.29	38.29	11.8	4.25	9.37	8.71	8.71	9.37	9.47	12	38.29	38.29	38.29	38.29	38.29	38.29	18.47	18.47
SPP South - Energy Price - 1H2023	4327	11/5/2034	11/5/2034	18.47	18.47	18.47	18.47	18.47	18.47	38.29	38.29	38.29	4.25	5.11	2.2	2.4	2.13	3.3	2.09	38.29	38.29	38.29	38.29	38.29	38.29	18.47	6.41
SPP South - Energy Price - 1H2023	4328	11/6/2034	11/6/2034	6.44	6.44	6.3	6.53	7.11	10.06	12.28	8.21	2.11	2.29	0	0	0	0	0	1.31	2.57	29.71	29.71	29.71	28.62	28.62	6.26	6.38
SPP South - Energy Price - 1H2023	4329	11/7/2034	11/7/2034	5.48	6.04	6.09	6.4	18.21	21.41	33.47	33.47	33.47	33.47	33.47	33.47	33.47	30.79	31.26	32.88	33.47	33.47	33.47	33.6	33.47	33.47	21.41	21.41
SPP South - Energy Price - 1H2023	4330	11/8/2034	11/8/2034	22.34	22.34	22.34	22.34	22.34	22.9	34.84	34.86	34.86	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	35.94	37.9	37.24	34.83	34.86	24.25	24.9
SPP South - Energy Price - 1H2023	4331	11/9/2034	11/9/2034	24.12	21.65	22.1	22.31	22.31	22.31	33.79	33.79	33.79	31.59	6.07	5.47	5.47	5.88	5.95	5.83	31.44	33.79	33.79	33.79	32.58	32.58	21.65	21.65
SPP South - Energy Price - 1H2023	4332	11/10/2034	11/10/2034	18.88	18.88	18.88	18.88	18.88	18.88	30.09	30.09	30.09	6.88	3.21	1.38	1.5	5.88	5.88	5.88	30.09	30.09	30.09	30.09	30.09	30.09	18.88	18.88
SPP South - Energy Price - 1H2023	4333	11/11/2034	11/11/2034	18.88	18.88	18.88	18.88	18.88	18.88	39.15	39.15	11.8	10.95	9.67	8.71	2.4	8.71	3.3	8.71	10.21	9.14	11.12	9.47	9.28	9.47	1.01	1.1
SPP South - Energy Price - 1H2023	4334	11/12/2034	11/12/2034	1.13	1.29	0.98	1.11	1.57	1.57	2.91	2.75	3.35	4.25	5.11	2.2	3.08	3.08	3.3	9.48	39.15	39.15	39.15	39.15	39.15	39.15	18.88	18.88
SPP South - Energy Price - 1H2023	4335	11/13/2034	11/13/2034	15.35	6.04	17.42	6.14	17.42	17.42	29.44	29.44	8.98	6.88	6.07	21.85	5.47	24.54	24.92	24.54	26.42	30.01	29.44	29.44	29.44	29.44	17.42	17.42
SPP South - Energy Price - 1H2023	4336	11/14/2034	11/14/2034	19.94	19.94	20.79	20.79	22.19	22.19	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	33.49	33.49	33.21	32.84	32.84	20.15	21.07
SPP South - Energy Price - 1H2023	4337	11/15/2034	11/15/2034	21.07	21.07	21.07	21.07	21.07	21.07	34.35	36.74	34.35	34.35	34.35	34.35	34.35	36.74	34.35	34.35	34.68	36.74	36.74	36.74	36.74	36.74	24.13	23.47
SPP South - Energy Price - 1H2023	4338	11/16/2034	11/16/2034	21.04	20.95	20.95	20.95	20.95	20.95	34.19	34.19	31.59	8.72	5.95	5.47	5.47	5.88	5.95	5.83	31.59	34.19	34.19	34.19	34.19	34.19	22.59	23.33
SPP South - Energy Price - 1H2023	4339	11/17/2034	11/17/2034	22.59	22.59	22.59	22.59	22.59	22.59	34.34	35.57	33.32	33.32	33.32	33.32	33.32	33.32	33.32	33.32	33.32	35.57	35.2	33.44	33.32	33.32	20.35	22.59
SPP South - Energy Price - 1H2023	4340	11/18/2034	11/18/2034	20.96	21.06	20.96	22.59	22.59	22.59	48.15	48.15	46.84	46.84	43.45	43.45	42.09	42.09	42.09	43.45	46.84	48.15	48.15	48.13	48.15	48.15	23.22	23.22
SPP South - Energy Price - 1H2023	4341	11/19/2034	11/19/2034	23.22	23.22	23.22	23.22	22.59	22.59	46.15	46.84	46.84	46.84	46.84	42.09	42.09	9.24	11.9	40.08	42.09	46.84	46.84	42.09	42.09	42.09	20.3	20.59
SPP South - Energy Price - 1H2023	4342	11/20/2034	11/20/2034	23.28	23.28	23.28	23.28	24.25	24.97	37.32	37.32	37.32	37.32	37.32	40.09	37.32	40.09	40.09	40.09	40.67	44.37	43.87	40.67	40.67	40.67	26.72	25.98
SPP South - Energy Price - 1H2023	4343	11/21/2034	11/21/2034	25.46	25.46	25.46	25.1	25.46	25.46	39.41	40.96	39.41	39.4	36.78	39.4	39.41	39.41	39.4	39.41	39.4	39.94	39.59	39.96	39.47	39.41	25.46	24.25
SPP South - Energy Price - 1H2023	4344	11/22/2034	11/22/2034	24.25	24.25	24.25	24.25	24.25	24.25	35.9	37.46	38.14	37.51	36.23	36.06	34.91	34.91	34.91	34.91	37.52	37.52	38.89	37.45	37.52	37.52	25.08	24.25
SPP South - Energy Price - 1H2023	4345	11/23/2034	11/23/2034	24.25	24.25	22.49	22.52	24.25	23.06	34.91	34.91	34.91	34.34	34.34	27.87	31.59	27.73	28.46	31.59	32.7	34.91	34.91	34.91	34.91	34.91	22.49	22.49
SPP South - Energy Price - 1H2023	4346	11/24/2034	11/24/2034	20.42	20.42	20.42	20.42	20.42	20.42	31.59	31.59	8.12	1.49	1.31	1.06	1.24	0	0	0	1.75	31.59	31.59	31.59	32.15	31.59	20.42	18.79
SPP South - Energy Price - 1H2023	4347	11/25/2034	11/25/2034	18.79	17.15	18.79	18.79	20.42	20.42	42.34	42.34	12.93	12.27	14.1	13.73	12.75	42.34	42.34	18.74	41.89	42.34	42.34	42.34	42.34	42.34	20.42	20.42
SPP South - Energy Price - 1H2023	4348	11/26/2034	11/26/2034	20.42	20.42	20.42	20.42	20.42	20.42	42.34	42.34	42.34	12.27	11.34	11.34	5.59	2.57	2.84	2.69	42.34	42.34	42.34	42.34	42.34	42.34	21.37	20.42
SPP South - Energy Price - 1H2023	4349	11/27/2034	11/27/2034	20.4	20.4	20.4	20.4	20.4	20.4	31.12	31.12	31.12	31.12	31.12	31.12	31.12	31.12	31.15	31.12	31.12	31.12	31.95	31.12	31.12	31.12	20.4	20.42
SPP South - Energy Price - 1H2023	4350	11/28/2034	11/28/2034	20.42	20.42	20.42	20.42	20.42	20.42	31.16	31.16	31.16	31.16	31.16	28.67	26.6	30.87	31.16	31.16	31.16	31.16	32.1	31.75	31.16	31.59	20.42	20.42
SPP South - Energy Price - 1H2023	4351	11/29/2034	11/29/2034	20.48	20.48	20.48	20.48	20.48	20.48	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	32.04	32.1	31.83	31.83	32.82	22.8	22.8
SPP South - Energy Price - 1H2023	4352	11/30/2034	11/30/2034	22.48	22.48	22.48	22.24	22.24	22.24	34.33	33.72	33.58	33.58	33.58	33.58	33.58	33.58	33.58	33.58	34.33	34.33	34.33	35.57	34.33	34.82	24.56	24.25
SPP South - Energy Price - 1H2023	4353	12/1/2034	12/1/2034	40.44	40.44	40.44	40.44	36.31	36.31	34.46	36.03	35.8	34.46	34.46	34.46	34.46	34.46	34.46	34.46	35.48	40.05	40.05	40.05	39.53	39.53	41.58	41.58
SPP South - Energy Price - 1H2023	4354	12/2/2034	12/2/2034	40.44	40.78	41.16	40.44	40.44	41.28	48.06	49.03	46.75	46.75	41.97	41.97	41.97	41.97	41.97	41.97	44.02	48.65	48.06	46.75	45.62	42.05	39.04	36.31
SPP South - Energy Price - 1H2023	4355	12/3/2034	12/3/2034	36.31	36.31	36.31	36.31	36.31	36.31	41.97	41.97	41.97	41.97	10.84	9.94	40.09	40.45	41.97	41.97	41.97	46.75	47.11	46.75	46.75	45.34	36.31	36.31
SPP South - Energy Price - 1H2023	4356	12/4/2034	12/4/2034	39.61	39.61	39.61	39.61	39.61	39.61	36.52	36.52	32.92	24.44	27.01	26.32	33.83	32.88	33.83	36.52	36.52	42.66	42.66	42.66	42.66	42.17	41.56	41.56
SPP South - Energy Price - 1H2023	4357	12/5/2034	12/5/2034	41.56	41.56	41.56	41.56	41.56	44.81	38.85	43.17	43.17	37.38	37.38	37.13	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	43.02	41.56
SPP South - Energy Price - 1H2023	4358	12/6/2034	12/6/2034	42.24	42.63	42.24	42	41.85	43.02	41.15	44.18	44.18	37.85	37.85	37.85	37.85	37.85	37.85	37.85	37.85	43.73	44.18	44.18	44.18	44.18	46.02	43.02
SPP South - Energy Price - 1H2023	4359	12/7/2034	12/7/2034	43	43.47	43.47	46.79	43.47	43	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	39.33	45.36	39.33	39.33	39.33	43	43
SPP South - Energy Price - 1H2023	4360	12/8/2034	12/8/2034	39.87	40.04	40.04	39.22	39.26	39.22	36.2	36.2	36.2	36.2	34.34	28.07	7.17	6.43	27.08	33.83	36.2	36.2	36.2	36.2	36.2	36.2	39.22	39.22
SPP South - Energy Price - 1H2023	4361	12/9/2034	12/9/2034	39.22	39.22	39.22	39.22	39.22	39.22	45.33	45.33	45.33	45.33	18.83	41.71	45.33	41.71	41.71	45.33	45.33	45.33	45.33	45.33	45.33	45.33	39.22	39.22
SPP South - Energy Price - 1H2023	4362	12/10/2034	12/10/2034	39.22	39.22	39.22	39.22	39.22	39.22	45.33	45.33	45.33	45	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	47.06	45.33	45.33	45.33	39.22	39.22
SPP South - Energy Price - 1H2023	4363	12/11/2034	12/11/2034	38.93	38.93	38.93	38.93	38.93	38.93	35.96	35.96	35.96	35.96	35.96	33.59	33.83	35.85	33.08	33.83	35.96	35.96	35.96	35.96	35.96	35.96	38.93	38.93
SPP South - Energy Price - 1H2023	4364	12/12/2034	12/12/2034	38.1	38.1	38.1	38.1	38.1	38.1	35.27	35.27	35.27	35.27	33.83	33.83	32.45	33.83	32.98	32.98	35.27	35.27	36.05	36.05	35.27	35.27	38.1	38.1
SPP South - Energy Price - 1H2023	4365	12/13/2034	12/13/2034	37.26	37.26	37.26	37.26	37.26	37.26	34.57	34.57	34.57	34.57	34.57	34.57	34.57	34.57	34.57	34.57	34.57	36.07	37.08	36.34	36.84	36.07	41.52	37.26
SPP South - Energy Price - 1H2023	4366	12/14/2034	12/14/2034	35.48	35.48	35.48	35.48	35.48	35.48	33.1	33.1	33.1	33.1	8.4	7	13.51	7.53	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	35.48	35.48
SPP South - Energy Price - 1H2023	4367	12/15/2034	12/15/2034	33.31	33.31	33.31	33.31	33.31	33.31	31.3	31.35	31.3	32.43	31.93	31.6	32.44	31.3	31.3	32.69	34.33	36.69	35.92	36.69	35.91	35.91	37.03	37.03
SPP South - Energy Price - 1H2023	4368	12/16/2034	12/16/2034	37.03	37.03	37.03	37.03	37.03	36.6	42.81	42.81	42.81	42.81	42.81	41.8	40.81	40.57	41.96	42.81	43.16	44.36	44.36	43.99	43.99	43.99	37.03	37.03
SPP South - Energy Price - 1H2023	4369	12/17/2034	12/17/2034	36.75	35.57	35.57	35.33	36.14	35.53	42.63	42.81	42.81	42.81	42.81	42.81	42.31	41.11	41.74	40.48	42.81	43.99	43.99	43.99	43.99	43.99	38.06	38.06
SPP South - Energy Price - 1H2023	4370	12/18/2034	12/18/2034	37.37	37.37	37.37	37.37	37.37	37.37	34.63	36.97	35.93	35.89	31.55	31.55	31.55	31.55	31.55	31.55	31.55	35.91	35.91	35.91	35.91	36.97	38.41	37.37
SPP South - Energy Price - 1H2023	4371	12/19/2034	12/19/2034	33.91	33.91	33.91	33.91	33.91	33.91	31.79	31.79	31.79	24.44	7.63	7	1.33	1.73	1.91	7.63	31.79	31.79	31.79	31.79	31.79	31.79	33.91	33.91
SPP South - Energy Price - 1H2023	4372	12/20/2034	12/20/2034	32.12	33.91	32.12	32.12	32.12	34.74	30.32	33.05	31.8	31.98	30.32	30.32	30.32	30.32	30.32	30.32	30.32	30.32	30.32	30.32	30.32	30.32	34.26	32.12
SPP South - Energy Price - 1H2023	4373	12/21/2034	12/21/2034	34.26	34.26	34.26	33.65	36.91	34.26	31.58	35.62	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	31.58	33.65	33.65
SPP South - Energy Price - 1H2023	4374	12/22/2034	12/22/2034	33.48	33.48	33.48	33.48	33.48	33.48	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	33.48	33.48
SPP South - Energy Price - 1H2023	4375	12/23/2034	12/23/2034	33.48	33.48	33.48	33.48	36.14	36.11	42.4	43.04	38.71	38.71	38.71	38.71	38.71	38.7	38.7	38.7	38.71	38.71	38.71	38.71	38.71	38.71	33.48	33.48
SPP South - Energy Price - 1H2023	4376	12/24/2034	12/24/2034	33.48	33.48	33.48	33.48	33.48	33.48	38.71	38.71	38.71	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.71	43.04	43.04	43.04	43.04	43.04	37.23	37.23
SPP South - Energy Price - 1H2023	4377	12/25/2034	12/25/2034	33.48	33.48	33.48	33.48	33.48	33.48	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	31.44	35.9	35.44	31.44	31.44	33.49	33.48
SPP South - Energy Price - 1H2023	4378	12/26/2034	12/26/2034	35.17	35.17	35.17	35.41	35.17	35.17	32.85	34.68	36.16	34.27	32.85	33.78	34.05	33.21	32.85	33.84	32.85	32.85	33.84	32.85	32.85	32.85	35.17	35.17
SPP South - Energy Price - 1H2023	4379	12/27/2034	12/27/2034	30.97	30.97	30.97	30.97	30.97	30.97	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	30.32	29.36	29.36	29.36	29.36	30.97	30.97
SPP South - Energy Price - 1H2023	4380	12/28/2034	12/28/2034	38.66	38.66	38.66	38.66	38.66	38.66	35.74	35.74	35.74	35.74	35.74	35.74	35.74	35.74	35.74	35.74	36.05	37.34	41.24	37.36	36.16	35.74	38.66	38.66
SPP South - Energy Price - 1H2023	4381	12/29/2034	12/29/2034	37.41	37.41	37.41	37.41	37.41	37.41	34.7	34.7	34.7	34.7	34.7	34.1	33.83	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	37.41	37.41
SPP South - Energy Price - 1H2023	4382	12/30/2034	12/30/2034	37.41	37.41	37.41	37.41	37.41	37.41	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	37.41	37.41
SPP South - Energy Price - 1H2023	4383	12/31/2034	12/31/2034	37.41	37.41	37.41	37.41	37.41	37.41	43.24	43.24	43.24	34.46	11.81	10.57	9.66	9.03	8.52	10.57	8.34	43.24	43.24	43.24	43.24	43.24	37.41	37.41
SPP South - Energy Price - 1H2023	4384	1/1/2035	1/1/2035	30.78	30.78	30.78	30.78	30.78	30.78	40.16	40.16	40.16	40.16	40.16	9.94	7.4	6.91	6.52	6.64	6.38	40.16	40.16	40.16	40.16	40.16	30.78	30.78
SPP South - Energy Price - 1H2023	4385	1/2/2035	1/2/2035	28.99	28.99	28.99	28.99	28.99	28.99	38.07	38.07	38.07	38.07	9.04	38.07	38.07	38.07	38.07	38.07	38.07	39.1	39.65	38.64	38.07	38.07	28.99	28.99
SPP South - Energy Price - 1H2023	4386	1/3/2035	1/3/2035	28.02	28.02	28.02	28.02	28.02	28.02	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	38.17	37.6	37.2	36.93	36.93	28.02	28.02
SPP South - Energy Price - 1H2023	4387	1/4/2035	1/4/2035	27.74	27.74	27.74	27.74	27.74	27.74	36.61	36.61	36.61	36.61	36.61	36.61	36.61	36.61	36.61	36.61	36.61	37.94	39.54	38.97	36.61	36.61	27.74	27.74
SPP South - Energy Price - 1H2023	4388	1/5/2035	1/5/2035	25.73	25.73	25.73	25.73	25.73	25.73	34.25	40.16	40.12	36.59	36.09	34.92	35.08	35.55	34.25	34.25	34.59	35.43	36.09	36.09	34.25	34.25	25.73	25.73
SPP South - Energy Price - 1H2023	4389	1/6/2035	1/6/2035	25.73	25.73	25.73	25.73	25.73	25.73	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	38.57	39.64	39.64	37.73	37.73	26.34	25.95
SPP South - Energy Price - 1H2023	4390	1/7/2035	1/7/2035	25.73	26.56	25.73	25.73	25.73	25.73	34.71	34.71	34.71	34.71	34.71	31.93	11.85	8.1	10.83	31.93	34.71	34.71	34.71	34.71	34.71	34.71	25.73	25.73
SPP South - Energy Price - 1H2023	4391	1/8/2035	1/8/2035	29.06	29.06	29.06	29.06	29.06	29.06	38.16	44.63	40.41	38.16	38.31	39.38	39.95	39.01	38.16	38.16	39.82	43.51	44.63	44.63	44.29	43.09	32.38	32.38
SPP South - Energy Price - 1H2023	4392	1/9/2035	1/9/2035	32.38	32.38	32.38	32.23	31.86	32.96	48.38	49.09	48.38	48.38	48.38	48.38	48.14	46.59	47.75	47.45	46.14	41.44	41.44	41.44	41.44	41.44	31.86	31.86
SPP South - Energy Price - 1H2023	4393	1/10/2035	1/10/2035	31.01	31.01	31.01	31.01	31.01	31.01	40.44	40.54	40.53	40.44	40.44	40.44	40.44	40.44	40.44	40.44	40.44	40.53	40.54	40.54	40.53	40.44	31.01	31.01
SPP South - Energy Price - 1H2023	4394	1/11/2035	1/11/2035	30.15	30.15	30.56	30.67	30.34	30.15	40.51	45.96	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.64	43.38	46.09	40.51	40.27	39.43	30.15	30.15
SPP South - Energy Price - 1H2023	4395	1/12/2035	1/12/2035	30.79	30.79	30.79	30.79	30.79	30.79	40.96	40.56	41.87	40.51	40.51	40.51	40.51	40.18	40.18	40.18	40.18	40.18	40.51	40.18	40.18	40.18	30.79	30.79
SPP South - Energy Price - 1H2023	4396	1/13/2035	1/13/2035	30.79	30.79	30.79	30.79	30.79	30.79	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	30.79	30.79
SPP South - Energy Price - 1H2023	4397	1/14/2035	1/14/2035	30.79	30.79	30.79	30.79	30.79	30.79	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	41.54	42.18	44.47	41.54	41.54	30.79	30.79
SPP South - Energy Price - 1H2023	4398	1/15/2035	1/15/2035	35.15	35.16	35.16	35.16	35.16	35.16	47.41	60.76	47.41	44.09	44.09	44.09	42.87	44.09	35.95	39.65	40.56	42.35	44.09	44.09	44.09	44.09	30.65	30.65

SPP South - Energy Price - 1H2023	4399	1/16/2035	1/16/2035	35.37	35.37	35.37	35.37	35.37	35.37	49.71	49.71	49.71	49.71	49.71	48.47	45.3	47.92	46.15	45.74	49.71	49.71	49.71	49.71	53.05	50.33	40.7	40.23
SPP South - Energy Price - 1H2023	4400	1/17/2035	1/17/2035	42.15	42.25	42.34	40.23	37.17	40.23	51.85	51.85	51.85	51.85	46.05	38.64	37.94	37.15	36.6	38.42	38.64	50.79	51.85	51.85	51.85	50.96	37.17	37.17
SPP South - Energy Price - 1H2023	4401	1/18/2035	1/18/2035	33.31	33.31	33.31	33.31	33.31	33.31	47.26	47.26	47.26	47.26	47.26	47.26	46.24	45	46.01	37.94	46.11	47.26	48.74	49.06	47.26	47.26	33.31	33.31
SPP South - Energy Price - 1H2023	4402	1/19/2035	1/19/2035	33.07	33.07	33.07	33.07	33.07	33.07	45.96	46.97	10.28	2.52	2.19	2.52	1.73	1.63	6.52	6.64	6.38	46.97	52.05	50.76	53.8	50.76	38	33.44
SPP South - Energy Price - 1H2023	4403	1/20/2035	1/20/2035	33.24	33.24	33.24	33.44	33.24	36.13	48.74	51.26	44.61	44.61	10.6	9.48	8.67	8.1	7.65	7.78	44.61	44.61	50.7	50.67	50.77	48.49	35.95	33.07
SPP South - Energy Price - 1H2023	4404	1/21/2035	1/21/2035	33.07	33.07	33.07	33.07	35.95	33.44	48.49	48.49	44.61	44.61	44.61	41.04	44.61	44.61	44.47	9.8	41.04	44.61	45.11	51.26	44.61	44.61	33.07	33.07
SPP South - Energy Price - 1H2023	4405	1/22/2035	1/22/2035	32.34	32.49	32.49	32.49	32.24	32.19	41.64	41.64	41.64	41.64	41.64	39.28	37.94	33.03	39.69	41.64	41.64	41.64	41.64	41.64	41.64	41.64	29.66	29.84
SPP South - Energy Price - 1H2023	4406	1/23/2035	1/23/2035	28.76	29.1	29.38	29.66	29.66	29.66	40.75	43.24	43.24	40.75	40.75	40.75	40.75	40.75	40.04	40.75	40.75	40.75	40.75	40.75	40.75	40.75	29.91	30.6
SPP South - Energy Price - 1H2023	4407	1/24/2035	1/24/2035	27.73	29.04	28.96	29.62	29.91	31.3	41.77	40.89	40.89	38.93	38.73	39.25	38.73	38.73	38.43	38.73	38.73	40.2	43.98	43.2	42.72	43.98	35.16	35.16
SPP South - Energy Price - 1H2023	4408	1/25/2035	1/25/2035	35.9	35.87	38.27	38.16	35.67	35.82	56.12	57.52	44.94	43.94	42.21	42.21	42.21	42.21	42.21	42.21	42.21	45.46	52.85	54.23	52.33	51.89	39.01	37.29
SPP South - Energy Price - 1H2023	4409	1/26/2035	1/26/2035	39.9	37.75	37.75	37.75	39.5	39.25	52.55	61.09	46.97	46.97	46.97	46.97	41.93	39.23	41.94	37.94	5.85	46.97	46.97	46.97	46.97	46.97	32.96	32.85
SPP South - Energy Price - 1H2023	4410	1/27/2035	1/27/2035	32.85	32.85	32.85	35.71	35.71	35.71	44.32	44.32	44.32	44.32	41.91	7.46	7.27	7.2	7.13	7.13	6.85	44.32	45.62	44.47	44.47	44.47	36.42	36.34
SPP South - Energy Price - 1H2023	4411	1/28/2035	1/28/2035	36.66	37.21	37.14	37.6	37.56	37.6	50.84	50.92	52.2	50.92	49.87	49.46	45.31	44.32	44.32	44.32	44.32	44.62	48.17	44.84	44.47	44.47	32.85	32.85
SPP South - Energy Price - 1H2023	4412	1/29/2035	1/29/2035	32.96	32.96	32.69	32.96	32.96	32.96	45.59	45.59	41.24	37.95	6.81	6.37	6.2	6.37	6.08	1.27	5.85	33.92	37.94	37.94	37.94	39.28	29.33	29.33
SPP South - Energy Price - 1H2023	4413	1/30/2035	1/30/2035	28.52	28.52	28.52	28.52	28.52	28.52	43.44	44.44	42.01	39.83	39.48	39.55	39.54	37.94	37.94	37.94	37.94	41.01	41.24	44.93	44.66	41.43	31.66	31.66
SPP South - Energy Price - 1H2023	4414	1/31/2035	1/31/2035	31.28	31.58	31.66	31.59	29.69	31.69	44.59	45.84	44.59	44.59	44.09	44.09	44.09	44.59	44.09	44.01	41.08	44.59	44.59	45.33	45.1	45.71	35.82	33.92
SPP South - Energy Price - 1H2023	4415	2/1/2035	2/1/2035	17.5	17.5	17.5	17.5	17.5	17.5	37.99	37.99	37.99	37.99	37.99	37.99	35.19	35.38	37.67	37.81	37.99	37.99	37.99	37.99	38.25	38.66	18.76	18.76
SPP South - Energy Price - 1H2023	4416	2/2/2035	2/2/2035	18.76	18.76	18.76	18.76	18.76	18.76	40.03	43.24	40.03	39.33	37.78	37.78	37.78	37.78	37.78	37.78	37.78	37.78	40.42	40.03	39.73	39.48	18.76	18.76
SPP South - Energy Price - 1H2023	4417	2/3/2035	2/3/2035	18.76	17.39	17.39	17.39	17.39	17.39	38.42	38.67	36.97	36.97	36.97	36.97	36.97	36.97	36.97	8.87	6.15	36.97	36.97	39.9	36.97	36.97	17.39	17.39
SPP South - Energy Price - 1H2023	4418	2/4/2035	2/4/2035	17.39	17.39	17.39	17.39	17.39	17.39	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	37.24	39.9	39.9	38.86	36.97	17.39	17.39
SPP South - Energy Price - 1H2023	4419	2/5/2035	2/5/2035	16.2	16.2	16.2	16.2	16.2	16.46	37.47	38.83	36.34	35.5	35.5	34.22	31.1	5.7	5.64	27.19	32.66	35.5	37.45	37.45	36.76	36.18	17.11	16.2
SPP South - Energy Price - 1H2023	4420	2/6/2035	2/6/2035	16.14	16.14	16.14	16.14	16.14	16.39	35.39	37.24	35.39	35.19	35.39	35.39	8.1	5.7	5.64	5.64	5.42	35.39	35.39	35.39	35.39	35.39	16.14	16.14
SPP South - Energy Price - 1H2023	4421	2/7/2035	2/7/2035	16.66	16.66	16.66	16.66	16.66	16.66	36.38	36.39	36.38	7.12	1.04	1.11	1.08	1.08	1.03	1.08	1.08	5.01	36.39	36.39	36.39	37.5	17.66	17.58
SPP South - Energy Price - 1H2023	4422	2/8/2035	2/8/2035	17.06	16.81	16.63	17.06	17.06	16.95	37.04	37.49	35.19	36.26	36.26	35.19	34.05	33.65	27.85	28.88	33.36	36.26	36.26	36.26	36.26	36.26	16.59	16.59
SPP South - Energy Price - 1H2023	4423	2/9/2035	2/9/2035	15.98	15.98	15.98	15.98	15.98	15.98	35.09	35.09	35.09	32.59	30.73	30.73	29.98	5.7	5.64	5.64	5.42	35.09	35.09	35.09	35.09	35.09	15.98	15.98
SPP South - Energy Price - 1H2023	4424	2/10/2035	2/10/2035	15.98	15.98	15.98	15.98	15.98	15.98	33.99	36.94	33.99	33.99	33.99	33.99	33.99	33.99	30.16	30.82	28.89	33.99	33.99	33.99	33.99	33.99	15.98	15.98
SPP South - Energy Price - 1H2023	4425	2/11/2035	2/11/2035	15.98	15.98	15.98	15.98	15.98	15.98	33.99	34.84	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	34.5	35.02	35.2	16.72	15.98
SPP South - Energy Price - 1H2023	4426	2/12/2035	2/12/2035	18.88	18.88	18.88	18.88	18.88	18.88	41.01	41.89	43.5	43.26	42.71	42.71	40.54	40.54	40.54	40.54	40.54	42.79	42.71	42.45	42.15	41.51	18.88	18.88
SPP South - Energy Price - 1H2023	4427	2/13/2035	2/13/2035	18.84	18.84	18.84	18.84	18.84	18.84	40.47	40.47	40.47	40.47	40.47	9.52	2.17	35.19	1.03	32.64	35.19	38.23	40.47	40.47	40.47	40.47	18.84	18.84
SPP South - Energy Price - 1H2023	4428	2/14/2035	2/14/2035	24.7	24.7	24.7	24.7	24.7	24.7	51.7	51.7	34.01	28.29	33.8	28.8	28.8	5.7	28.38	5.64	27.83	42.54	51.7	51.7	51.7	51.7	24.58	24.58
SPP South - Energy Price - 1H2023	4429	2/15/2035	2/15/2035	19.84	19.84	19.84	19.84	19.84	19.84	42.39	42.38	33.65	35.19	33.65	5.91	28.63	1.08	33.65	33.84	33.65	42.39	42.39	42.39	43.37	42.39	19.84	19.84
SPP South - Energy Price - 1H2023	4430	2/16/2035	2/16/2035	18.4	18.4	18.36	18.4	18.36	18.4	40.79	41.4	39.56	39.56	34.38	5.91	5.75	5.7	5.64	5.64	5.91	33.07	39.56	39.56	39.56	39.56	18.36	18.36
SPP South - Energy Price - 1H2023	4431	2/17/2035	2/17/2035	18.36	18.36	18.36	18.36	18.36	18.36	39.04	39.9	39.22	39.04	39.04	39.04	39.04	32.17	38.16	39.04	39.04	39.04	39.84	39.56	39.9	39.44	18.36	18.36
SPP South - Energy Price - 1H2023	4432	2/18/2035	2/18/2035	18.36	18.36	18.36	18.36	18.36	18.36	39.04	39.04	39.22	39.04	39.04	39.04	37.65	6.46	6.39	6.39	6.15	37.5	39.04	39.04	39.04	39.04	18.36	18.36
SPP South - Energy Price - 1H2023	4433	2/19/2035	2/19/2035	16.75	16.75	16.75	16.75	16.75	17.11	39.03	39.26	37.74	37.51	37.51	37.03	36.87	36.57	36.57	36.57	37.51	39.89	42.09	41.71	41.02	38.95	18.36	17.68
SPP South - Energy Price - 1H2023	4434	2/20/2035	2/20/2035	18.36	18.36	18.36	18.36	18.36	18.76	40.89	41.17	38.48	38.47	37.76	35.19	35.19	35.19	34.18	28.76	35.19	35.19	38.47	38.47	38.25	38.47	17.74	17.74
SPP South - Energy Price - 1H2023	4435	2/21/2035	2/21/2035	16.52	16.52	16.52	16.52	16.52	16.52	37.51	37.51	36.13	35.13	31.76	30.97	4.51	6.35	4.99	1.04	6.63	33.32	36.13	36.13	36.13	36.13	16.52	16.52
SPP South - Energy Price - 1H2023	4436	2/22/2035	2/22/2035	17.31	17.31	17.31	17.31	17.31	17.31	37.65	37.65	37.65	37.65	37.65	37.65	35.19	37.65	37.65	37.65	35.33	37.65	37.65	39.55	40.31	39.29	18.69	18.18
SPP South - Energy Price - 1H2023	4437	2/23/2035	2/23/2035	18.26	17.6	17.21	17.68	17.18	18.5	40.89	42.71	37.58	37.55	37.55	37.52	36.83	36.83	36.83	36.83	36.83	37.51	37.55	37.55	36.83	36.83	16.88	16.88
SPP South - Energy Price - 1H2023	4438	2/24/2035	2/24/2035	16.88	16.88	16.88	16.88	16.88	16.88	35.9	35.9	7.63	1.14	1.1	1.01	1.16	1.06	1.21	1.17	1.14	7.24	35.9	35.9	35.9	35.9	16.88	16.88
SPP South - Energy Price - 1H2023	4439	2/25/2035	2/25/2035	16.88	16.88	16.88	16.88	16.88	16.88	35.9	35.9	35.9	1.05	1.1	1.01	1.16	1.06	1.21	1.17	1.16	7.24	8.73	12.49	9.74	9.86	4.66	4.16
SPP South - Energy Price - 1H2023	4440	2/26/2035	2/26/2035	17.93	17.93	17.93	17.93	17.93	17.93	35.19	35.05	0.98	0.92	6.09	29.26	29.12	35.19	30.23	30.23	30.23	37.56	38.83	38.83	38.83	38.83	17.93	17.93
SPP South - Energy Price - 1H2023	4441	2/27/2035	2/27/2035	16.35	16.35	16.35	16.35	16.35	16.35	35.81	35.81	35.19	6.54	1.04	0.9	1.03	1.04	1.07	1.04	1.04	6.39	35.81	35.81	35.81	35.81	16.56	16.5
SPP South - Energy Price - 1H2023	4442	2/28/2035	2/28/2035	18.07	18.07	18.07	18.07	18.07	18.07	40.7	40.7	39.1	39.1	39.1	39.1	39.1	39.1	35.19	39.1	39.1	39.1	42.31	42.31	39.1	41.26	18.76	18.29
SPP South - Energy Price - 1H2023	4443	3/1/2035	3/1/2035	24.97	24.97	24.97	24.97	24.97	24.97	26.15	26.15	26.15	26.15	26.15	26.15	25.18	24.06	26.11	3.96	3.89	20.11	26.15	26.15	26.15	26.93	24.97	24.97
SPP South - Energy Price - 1H2023	4444	3/2/2035	3/2/2035	20.48	20.48	20.48	20.48	20.91	20.96	22.93	22.87	21.92	21.92	21.92	20.16	20.21	17.66	3.81	3.96	17.71	21.92	21.92	21.92	21.92	21.92	20.48	20.48
SPP South - Energy Price - 1H2023	4445	3/3/2035	3/3/2035	20.48	20.48	20.48	20.48	20.48	20.48	25.72	25.72	1.29	0.74	0.77	0.71	18.48	23.19	22.9	25.72	25.72	25.72	25.72	25.72	25.72	25.72	20.48	20.48
SPP South - Energy Price - 1H2023	4446	3/4/2035	3/4/2035	20.48	20.48	20.48	20.48	20.48	20.48	25.72	25.72	25.72	25.72	25.72	25.72	25.72	5.06	5.19	23.66	25.72	25.72	26.11	25.72	25.72	25.72	20.48	20.48
SPP South - Energy Price - 1H2023	4447	3/5/2035	3/5/2035	19.09	19.09	19.09	19.09	19.09	19.09	20.6	20.6	20.6	19.61	18.46	18.04	3.66	18.04	18.04	18.04	18.04	5.63	20.08	20.6	20.6	20.6	19.09	19.09
SPP South - Energy Price - 1H2023	4448	3/6/2035	3/6/2035	19.74	19.74	19.74	19.74	19.74	19.74	22.09	21.22	21.22	21.22	21.22	20.63	21.22	21.22	21.22	21.22	21.22	21.22	21.73	21.96	21.29	21.29	19.79	20.12
SPP South - Energy Price - 1H2023	4449	3/7/2035	3/7/2035	20.19	20.19	20.19	20.19	20.19	20.19	21.81	21.65	21.64	20.62	21.64	21.65	21.65	21.64	21.64	21.65	21.65	21.65	22.7	22.9	22.55	21.94	20.85	20.19
SPP South - Energy Price - 1H2023	4450	3/8/2035	3/8/2035	21	21	21.07	21.07	21.83	22.35	23.49	23.38	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	21	21
SPP South - Energy Price - 1H2023	4451	3/9/2035	3/9/2035	19.96	19.96	19.96	19.96	19.96	19.96	21.42	21.42	21.42	21.42	21.42	21.93	21.42	21.42	21.42	21.76	21.81	21.81	21.81	21.97	21.42	21.42	19.96	19.96
SPP South - Energy Price - 1H2023	4452	3/10/2035	3/10/2035	19.96	19.16	19.96	19.96	14.25	14.25	25.07	19.46	5.37	5.21	0.77	0.71	0	0.74	0.85	0.83	0.83	5.1	25.07	25.07	25.07	25.07	19.96	19.96
SPP South - Energy Price - 1H2023	4453	3/11/2035	3/11/2035	19.96	19.96	19.96	19.96	19.96	19.96	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	19.96	19.96
SPP South - Energy Price - 1H2023	4454	3/12/2035	3/12/2035	21.13	21.13	21.13	21.13	21.13	21.13	22.07	22.07	22.07	22.07	22.07	22.07	20.36	22.07	22.07	22.07	21.15	21.84	22.07	22.07	21.06	18.9	8.53	5.23
SPP South - Energy Price - 1H2023	4455	3/13/2035	3/13/2035	5.23	5.23	5.23	5.1	5.24	20.71	21.36	18.55	5.25	5.25	3.81	3.81	3.55	3.72	3.81	3.96	3.89	3.74	19.72	21.25	21.67	21.67	20.71	20.71
SPP South - Energy Price - 1H2023	4456	3/14/2035	3/14/2035	20.62	20.62	20.62	20.62	20.62	20.62	21.59	21.59	20.62	3.83	3.45	0.52	0.6	0.62	0.62	0.61	3.89	3.74	21.59	21.59	21.59	21.59	20.62	20.62
SPP South - Energy Price - 1H2023	4457	3/15/2035	3/15/2035	23.07	23.07	23.07	23.07	23.07	23.18	25.71	25.65	26.27	26.15	25.5	25.5	23.89	24.94	24	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.07	23.07
SPP South - Energy Price - 1H2023	4458	3/16/2035	3/16/2035	21.62	21.62	21.62	21.62	21.62	21.62	22.53	20.62	0.58	0.54	0.57	0.52	0	0.55	13.47	13.52	19.73	21.84	22.53	22.53	22.53	22.53	21.62	21.62
SPP South - Energy Price - 1H2023	4459	3/17/2035	3/17/2035	21.62	21.62	21.62	21.62	21.62	21.62	27.15	27.15	27.15	27.15	27.15	27.15	27.15	27.15	27.15	23.31	3.88	24.98	27.15	27.15	27.15	27.15	21.62	21.62
SPP South - Energy Price - 1H2023	4460	3/18/2035	3/18/2035	21.62	21.62	21.62	21.62	21.62	21.62	27.15	27.15	27.15	27.15	27.15	27.15	27.15	26.02	26.94	5.4	7.33	27.15	27.15	27.15	27.15	27.15	21.62	21.62
SPP South - Energy Price - 1H2023	4461	3/19/2035	3/19/2035	22.48	22.48	22.48	22.48	22.48	22.97	27.23	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	22.48	22.48
SPP South - Energy Price - 1H2023	4462	3/20/2035	3/20/2035	21.46	21.46	21.46	21.46	21.46	21.46	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	22.37	21.72	21.46
SPP South - Energy Price - 1H2023	4463	3/21/2035	3/21/2035	20.97	20.97	20.92	20.34	20.34	20.34	21.32	21.32	21.32	21.32	21.32	21.32	21.32	20.62	20.62	20.62	20.62	21.18	21.32	21.32	21.32	21.32	20.34	20.34
SPP South - Energy Price - 1H2023	4464	3/22/2035	3/22/2035	19.14	19.14	19.14	19.14	19.14	19.14	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.69	20.6	20.6	19.14	19.14
SPP South - Energy Price - 1H2023	4465	3/23/2035	3/23/2035	17.83	17.83	17.83	17.83	17.83	17.83	19.36	19.36	5.12	6.42	6.42	4.63	4.78	6.69	6.42	19.36	19.36	19.36	19.36	19.46	19.36	19.36	17.83	17.83
SPP South - Energy Price - 1H2023	4466	3/24/2035	3/24/2035	17.83	17.83	17.83	17.83	17.83	17.83	22.39	22.39	22.39	22.39	22.39	22.39	22.39	22.39	22.39	22.39	22.39	23.13	24.89	24.89	22.39	22.39	17.83	17.83
SPP South - Energy Price - 1H2023	4467	3/25/2035	3/25/2035	17.83	17.83	17.83	17.83	17.83	17.83	22.39	22.39	22.39	6.73	0	0	0	0	0	0	0	0.9	7.43	7.43	8.69	8.62	6.68	5.95
SPP South - Energy Price - 1H2023	4468	3/26/2035	3/26/2035	6.8	6.54	5.96	6	6.19	6.52	11.48	5.33	0.79	0.72	0.81	4.96	5.33	7.09	7.09	5.91	19.83	19.83	20.82	20.62	20.67	20.31	18.33	18.33
SPP South - Energy Price - 1H2023	4469	3/27/2035	3/27/2035	19.61	19.61	19.61	19.61	19.61	19.61	21.04	21.04	21.04	21.04	20.62	0.79	0.64	7.77	5.23	5.59	21.04	21.04	21.04	21.04	21.04	21.04	19.61	19.61
SPP South - Energy Price - 1H2023	4470	3/28/2035	3/28/2035	19.82	19.82	19.82	19.82	19.82	19.82	21.24	21.24	19.87	4.94	7.1	4.96	5.15	5.23	7.1	10.2	11.76	18.66	21.24	21.24	20.65	18.95	19.03	18.9
SPP South - Energy Price - 1H2023	4471	3/29/2035	3/29/2035	6.8	13.79	10.2	19.01	20.14	20.14	21.45	21.54	21.54	20.62	19.64	16.67	17.33	21.54	18.97	5.59	20.62	21.54	20.62	20.62	20.62	18.92	16.58	16.36
SPP South - Energy Price - 1H2023	4472	3/30/2035	3/30/2035	17.36	17.32	17.54	17.54	18.76	18.76	20.24	20.24	20.24	20.24	20.24	20.24	8.67	9.05	18.62	18.62	17.77	18.62	20.24	20.24	20.24	20.24	18.76	18.76
SPP South - Energy Price - 1H2023	4473	3/31/2035	3/31/2035	18.76	18.76	18.76	18.76	18.76	18.76	23.56	23.56	23.56	21.68	23.56	8.77	8.77	7.13	6.61	0.83	7.87	23.56	23.56	23.56	23.56	23.56	18.76	18.76
SPP South - Energy Price - 1H2023	4474	4/1/2035	4/1/2035	7.76	7.76	7.76	7.76	7.76	7.76	10.86	9.99	9.12	7.23	10.86	9.99	10.78	10.86	9.99	10.86	10.86	10.86	10.86	10.89	10.89	10.86	7.76	7.76
SPP South - Energy Price - 1H2023	4475	4/2/2035	4/2/2035	8.29	8.29	8.29	8.29	8.29	8.29	10.73	10.73	10.73	10.73	10.73	5.65	6.53	2.64	6.01	5.65	6.01	6.01	10.73	10.73	10.73	10.4	8.29	8.29
SPP South - Energy Price - 1H2023	4476	4/3/2035	4/3/2035	8.47	7.8	7.8	8.47	7.98	8.47	10.4	8.59	2.59	2.49	2.47	2.5	2.6	3.25	3.11	2.99	4.67	10.94	10.94	10.94	11.07	10.94	8.48	8.48
SPP South - Energy Price - 1H2023	4477	4/4/2035	4/4/2035	8.58	8.91	8.91	8.91	8.92	8.92	11.43	11.43	8.84	2.49	10.05	9.43	9.78	7.89	10.2	11.43	9.89	10.69	11.01	11.43	11.43	11.43	8.91	8.58
SPP South - Energy Price - 1H2023	4478	4/5/2035	4/5/2035	8.64	8.64	8.64	8.64	8.64	8.64	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.02	11.13	11.13	11.13	11.13	11.13	8.64	8.64
SPP South - Energy Price - 1H2023	4479	4/6/2035	4/6/2035	8.5	8.5	8.5	8.5	8.5	8.74	10.96	10.96	2.59	0.78	0.41	0.4	0.32	0.31	0.34	0.34	0.32	2.8	2.65	10.9	10.4	10.96	8.5	8.5
SPP South - Energy Price - 1H2023	4480	4/7/2035	4/7/2035	8.5	8.5	7.82	7.82	8.5	8.5	11.9	3.43	0.51	0	0	0	0	0	0	0	0.4	3.57	4.7	11.9	11.9	11.9	8.5	8.5
SPP South - Energy Price - 1H2023	4481	4/8/2035	4/8/2035	8.5	8.5	8.5	8.5	8.5	8.5	11.9	11.9	5.37	3.18	5.37	5.37	3.31	5.37	5.37	5.37	11.9	11.9	13.03	13.03	12.09	11.9	8.5	8.5

SPP South - Energy Price - 1H2023	4482	4/9/2035	4/9/2035	8.46	8.46	8.46	8.46	8.46	8.46	10.92	10.92	10.92	10.4	9.56	10.4	2.6	2.64	2.64	3.48	3.5	7.39	10.92	10.92	10.92	10.92	8.46	8.46
SPP South - Energy Price - 1H2023	4483	4/10/2035	4/10/2035	8.58	8.58	8.58	8.58	8.58	8.59	11.06	11.06	11.06	9.46	3.7	2.5	2.6	2.64	2.64	2.82	2.92	10.4	11.06	11.06	11.06	11.06	8.59	8.59
SPP South - Energy Price - 1H2023	4484	4/11/2035	4/11/2035	8.71	8.71	8.71	8.71	8.71	8.71	11.2	4.17	2.5	2.49	0.41	2.5	0.32	2.5	2.5	5.03	5.25	11.2	11.2	11.2	10.77	10.4	8.71	8.71
SPP South - Energy Price - 1H2023	4485	4/12/2035	4/12/2035	8.53	8.53	8.53	8.53	8.53	8.53	10.4	9.41	2.6	2.49	2.47	2.5	2.6	2.64	2.6	2.82	2.88	2.8	2.65	10.78	10.4	10.78	8.53	8.53
SPP South - Energy Price - 1H2023	4486	4/13/2035	4/13/2035	8.36	8.36	8.36	8.36	8.41	9.16	11.07	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.6	10.59	8.69	8.37
SPP South - Energy Price - 1H2023	4487	4/14/2035	4/14/2035	8.36	8.36	8.36	8.36	8.36	8.45	12.09	11.71	11.71	11.71	11.71	11.71	11.71	6.42	8.01	11.71	11.71	11.71	11.71	11.71	11.71	11.71	8.36	8.36
SPP South - Energy Price - 1H2023	4488	4/15/2035	4/15/2035	8.36	8.36	8.36	8.36	8.36	8.36	11.71	11.71	11.71	10.77	10.77	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	8.36	8.36
SPP South - Energy Price - 1H2023	4489	4/16/2035	4/16/2035	8.24	8.24	8.24	8.24	8.24	8.24	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.46	10.79	10.8	10.65	8.55	8.24
SPP South - Energy Price - 1H2023	4490	4/17/2035	4/17/2035	8.4	8.35	8.4	8.4	8.4	8.8	10.93	10.58	10.58	10.58	10.58	10.58	10.58	10.4	10.58	10.58	10.58	10.58	10.62	10.91	10.82	10.62	8.35	8.35
SPP South - Energy Price - 1H2023	4491	4/18/2035	4/18/2035	8.18	8.35	8.24	8.35	8.95	8.95	10.69	10.62	10.38	10.38	10.38	10.38	10.38	9.32	9.55	10.38	9.55	10.38	10.38	10.38	10.38	10.38	8.18	8.18
SPP South - Energy Price - 1H2023	4492	4/19/2035	4/19/2035	8.1	8.1	8.1	8.1	8.1	8.1	10.3	10.3	10.3	10.3	9.12	9.12	9.12	8.99	8.99	9.12	9.22	10.3	10.3	10.3	10.3	10.3	8.1	8.1
SPP South - Energy Price - 1H2023	4493	4/20/2035	4/20/2035	8.02	8.02	8.02	8.02	8.02	8.02	10.21	10.21	10.21	10.21	10.21	10.21	9.39	9.39	9.39	10.21	10.21	10.21	10.21	10.21	10.21	10.21	2.82	2.52
SPP South - Energy Price - 1H2023	4494	4/21/2035	4/21/2035	2.88	2.77	2.52	2.54	2.62	2.54	3.61	3.43	3.3	3.18	3.15	3.19	3.3	3.3	3.36	3.59	3.71	3.57	3.38	11.23	11.23	11.23	8.02	8.02
SPP South - Energy Price - 1H2023	4495	4/22/2035	4/22/2035	8.02	8.02	8.02	8.02	8.02	8.02	11.23	8.84	3.3	3.18	3.15	8.41	8.41	8.41	8.41	8.41	11.23	11.23	11.23	11.45	11.67	11.23	8.02	8.02
SPP South - Energy Price - 1H2023	4496	4/23/2035	4/23/2035	8.33	8.33	8.33	8.33	8.33	8.33	10.4	9.14	3.79	1.32	1.5	1.75	9.21	9.14	10.56	10.4	10.56	10.56	10.56	10.73	10.56	10.56	8.33	8.33
SPP South - Energy Price - 1H2023	4497	4/24/2035	4/24/2035	8.44	8.44	8.44	8.44	8.44	8.44	10.68	10.68	10.68	10.68	10.68	11.05	11.05	12.17	12.17	12.17	12.17	12.17	12.17	12.17	12.17	11.52	9.24	9.24
SPP South - Energy Price - 1H2023	4498	4/25/2035	4/25/2035	8.62	8.47	8.47	8.44	8.56	8.64	10.64	10.9	10.77	11.06	10.64	10.64	11.07	11.07	10.76	11.07	11.07	11.07	11.07	11.78	11.07	11.06	8.4	8.4
SPP South - Energy Price - 1H2023	4499	4/26/2035	4/26/2035	8.16	8.2	8.2	8.18	8.29	8.62	11.04	10.36	10.36	10.36	9.9	10.36	10.36	10.36	10.19	3.05	3.04	10.36	10.36	10.36	10.36	10.36	8.16	8.16
SPP South - Energy Price - 1H2023	4500	4/27/2035	4/27/2035	8	8	8	8	8.12	8	10.18	8.94	1.38	1	1.5	1.75	1.98	1.98	1.98	8.88	10.18	10.18	10.18	10.18	10.18	10.18	8	8
SPP South - Energy Price - 1H2023	4501	4/28/2035	4/28/2035	8	8	8	8	8	8.08	11.2	11.2	4.19	4.19	2.68	3.86	2.53	4.49	4.19	6.42	6.69	11.2	11.2	11.2	11.2	11.2	8	8
SPP South - Energy Price - 1H2023	4502	4/29/2035	4/29/2035	8	8	8	8	8	8	11.2	2.71	1.76	1.69	3.31	2.23	3.04	3.04	3.78	11.2	11.2	11.2	11.2	11.2	11.2	11.2	8	8
SPP South - Energy Price - 1H2023	4503	4/30/2035	4/30/2035	7.96	7.97	7.97	7.97	8.16	8.32	10.83	10.14	2.5	2.72	2.5	1.75	1.98	2.39	2.72	2.5	3.04	8.75	10.14	10.14	10.16	10.14	7.96	7.96
SPP South - Energy Price - 1H2023	4504	5/1/2035	5/1/2035	9.5	9.5	9.5	9.72	9.88	9.99	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.22	11.2	9.5	9.5
SPP South - Energy Price - 1H2023	4505	5/2/2035	5/2/2035	9.95	9.95	9.95	9.95	9.95	10.19	11.66	11.66	11.66	11.66	11.66	11.66	11.66	11.66	11.66	11.66	10.73	11.66	11.66	11.68	11.71	11.81	9.95	9.95
SPP South - Energy Price - 1H2023	4506	5/3/2035	5/3/2035	10.12	10.12	10.12	10.12	10.12	10.37	11.83	5.13	3	3	1.88	2.19	2.49	3	3.42	3.84	3.82	11.52	11.83	11.83	11.83	11.83	10.12	10.12
SPP South - Energy Price - 1H2023	4507	5/4/2035	5/4/2035	10	10	10.01	10	10	10.24	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.73	12	10.16	10
SPP South - Energy Price - 1H2023	4508	5/5/2035	5/5/2035	10	10.01	10	10	10	10.24	11.82	11.78	11.63	11.58	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.5	11.61	10	10
SPP South - Energy Price - 1H2023	4509	5/6/2035	5/6/2035	10	10.01	10	10	10.13	10.24	11.82	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	10	10
SPP South - Energy Price - 1H2023	4510	5/7/2035	5/7/2035	10.52	10.52	10.52	10.52	10.61	10.52	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	12.24	10.52	10.52
SPP South - Energy Price - 1H2023	4511	5/8/2035	5/8/2035	10.57	10.57	10.57	10.57	10.57	10.57	12.29	12.29	12.29	12.29	1.88	3.83	4.61	12.29	12.29	12.29	12.29	12.29	12.29	12.29	12.6	12.29	10.57	10.57
SPP South - Energy Price - 1H2023	4512	5/9/2035	5/9/2035	10.71	10.71	10.71	10.71	10.71	10.71	12.43	12.43	12.43	12.43	12.47	12.47	12.43	12.43	12.43	12.58	12.43	12.47	12.49	13.09	12.83	12.95	10.95	10.71
SPP South - Energy Price - 1H2023	4513	5/10/2035	5/10/2035	10.86	10.94	10.86	10.86	10.86	11.17	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59	13.13	13.84	12.62	13.72	13.72	13.84	14.37	13.63	11.13	10.86
SPP South - Energy Price - 1H2023	4514	5/11/2035	5/11/2035	10.77	10.84	10.84	10.8	10.96	11.07	12.88	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.53	12.54	12.6	13.85	13.76	13.14	11.78	11.78
SPP South - Energy Price - 1H2023	4515	5/12/2035	5/12/2035	10.77	10.84	10.77	10.77	10.96	10.77	12.36	12.49	13.37	13.28	13.43	12.94	12.36	12.36	12.36	12.36	12.36	12.36	12.36	12.54	13.43	12.36	10.77	10.77
SPP South - Energy Price - 1H2023	4516	5/13/2035	5/13/2035	10.77	10.77	10.77	10.77	10.77	10.77	12.36	12.36	12.36	12.36	10.11	12.36	12.36	12.36	12.36	12.36	12.36	12.36	12.36	12.36	12.36	12.36	10.77	10.77
SPP South - Energy Price - 1H2023	4517	5/14/2035	5/14/2035	11.24	11.24	11.24	11.24	11.31	11.58	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	12.98	13.32	12.98	11.24	11.24
SPP South - Energy Price - 1H2023	4518	5/15/2035	5/15/2035	11.45	11.45	11.45	11.45	11.45	11.45	13.19	13.19	13.06	13.06	12.76	12.94	13.06	13.06	13.06	12.78	12.67	13.19	13.19	13.19	13.19	13.19	11.45	11.45
SPP South - Energy Price - 1H2023	4519	5/16/2035	5/16/2035	11.2	11.14	11.19	11.14	11.2	11.2	12.08	2.02	1.74	1.66	1.88	2.19	2.49	3	3.42	3.84	3.82	11.28	12.93	12.93	12.93	12.93	11.2	11.2
SPP South - Energy Price - 1H2023	4520	5/17/2035	5/17/2035	11.06	11.06	11.06	11.06	11.06	11.06	12.79	2.49	2.29	2.3	1.88	2.19	2.49	11.67	11.67	10.73	10.73	12.79	12.79	12.79	12.82	12.79	11.07	11.06
SPP South - Energy Price - 1H2023	4521	5/18/2035	5/18/2035	10.54	10.54	10.54	10.54	10.54	10.54	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	10.54	10.54
SPP South - Energy Price - 1H2023	4522	5/19/2035	5/19/2035	10.54	9.71	9.69	10.54	9.69	10.54	11.13	2.32	9.86	1.91	10.15	11.3	12.09	12.09	12.1	12.1	12.3	12.3	12.3	12.3	12.1	12.1	10.54	10.54
SPP South - Energy Price - 1H2023	4523	5/20/2035	5/20/2035	10.54	10.54	10.54	10.54	10.54	10.54	12.09	12.09	12.09	12.1	12.1	12.1	12.1	12.09	12.09	12.09	12.09	12.09	12.1	12.63	12.1	12.3	10.54	10.54
SPP South - Energy Price - 1H2023	4524	5/21/2035	5/21/2035	9.43	9.43	9.43	9.43	9.43	9.43	10.23	9.41	8.93	9.46	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.13	11.57	11.13	9.81	9.48
SPP South - Energy Price - 1H2023	4525	5/22/2035	5/22/2035	10.94	10.94	10.94	10.94	10.94	10.94	12.67	12.67	12.67	12.67	12.67	12.67	12.88	12.67	12.67	12.84	12.67	12.88	13.05	14.02	13.88	13.86	11.32	10.94
SPP South - Energy Price - 1H2023	4526	5/23/2035	5/23/2035	11.46	11.58	11.58	11.55	11.58	11.82	13.38	13.2	13.2	13.2	13.57	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	11.46	11.46
SPP South - Energy Price - 1H2023	4527	5/24/2035	5/24/2035	11.54	11.54	11.54	11.54	11.54	11.54	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	11.54	11.54
SPP South - Energy Price - 1H2023	4528	5/25/2035	5/25/2035	11.74	11.74	11.74	11.74	11.74	11.74	13.48	13.48	13.48	11.95	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	11.74	11.74
SPP South - Energy Price - 1H2023	4529	5/26/2035	5/26/2035	11.74	11.74	11.74	11.74	11.74	11.74	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.53	13.48	13.48	13.48	11.74	11.8
SPP South - Energy Price - 1H2023	4530	5/27/2035	5/27/2035	11.74	11.74	11.74	11.74	11.86	11.91	13.53	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.53	13.48	14.39	13.48	11.74	11.74
SPP South - Energy Price - 1H2023	4531	5/28/2035	5/28/2035	11.74	11.74	11.74	11.74	11.74	11.74	13.11	12.27	12.06	13.06	13.06	12.06	13.06	13.06	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	11.74	11.74
SPP South - Energy Price - 1H2023	4532	5/29/2035	5/29/2035	11.37	11.37	11.37	11.37	11.37	11.37	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.89	13.9	14.94	13.89	12.44	12.44
SPP South - Energy Price - 1H2023	4533	5/30/2035	5/30/2035	11.42	11.4	11.31	11.33	11.42	11.48	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	11.31	11.31
SPP South - Energy Price - 1H2023	4534	5/31/2035	5/31/2035	10.98	10.98	10.98	10.98	10.98	10.98	12.71	12.71	11.69	12.69	12.71	12.71	12.71	11.09	12.71	12.71	12.71	12.71	12.71	12.71	12.71	12.71	10.98	10.98
SPP South - Energy Price - 1H2023	4535	6/1/2035	6/1/2035	19.93	19.93	19.93	19.93	19.93	19.93	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	20.45	19.93
SPP South - Energy Price - 1H2023	4536	6/2/2035	6/2/2035	19.93	19.93	19.93	19.93	19.93	19.93	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	21.93	21.93	20.17	20.17	20.17	20.17	20.17	20.17	19.93	19.93
SPP South - Energy Price - 1H2023	4537	6/3/2035	6/3/2035	19.93	19.93	19.93	19.93	19.93	20.07	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.52	20.17	20.17	19.93	20.23
SPP South - Energy Price - 1H2023	4538	6/4/2035	6/4/2035	22.06	21.7	21.98	21.84	21.95	22.06	20.35	20.73	21.49	21.69	20.56	20.75	21.36	20.27	20.27	20.44	20.27	20.64	23.16	21.69	21.69	21.94	21.7	23.71
SPP South - Energy Price - 1H2023	4539	6/5/2035	6/5/2035	24.07	24.12	24	23.71	23.97	24.14	23.46	23.51	23.65	22.53	23.13	22.96	21.91	23.51	25.31	25.31	25.31	25	25	25.31	25.31	25.31	26.03	23.71
SPP South - Energy Price - 1H2023	4540	6/6/2035	6/6/2035	24.31	24.31	24.31	24.45	25.18	25.48	23.52	23.99	24.63	25.54	25.54	25.54	25.54	25.87	28.67	27.41	26.28	26.42	25.58	27.16	26.67	25.87	26.84	26.62
SPP South - Energy Price - 1H2023	4541	6/7/2035	6/7/2035	26.05	26.05	26.05	26.05	26.05	26.05	22.06	23.44	23.34	23.5	24.13	23.52	25.08	25.1	26.3	27.77	26.39	25.39	25.93	25.93	25.39	25.08	23.8	23.8
SPP South - Energy Price - 1H2023	4542	6/8/2035	6/8/2035	23.53	23.53	23.26	23	23.41	23.75	20.41	20.43	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	21.13	21.67	21.27	23.73	22.3
SPP South - Energy Price - 1H2023	4543	6/9/2035	6/9/2035	21.77	21.77	21.77	21.77	21.77	21.77	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	21.77	21.77
SPP South - Energy Price - 1H2023	4544	6/10/2035	6/10/2035	21.77	21.77	21.77	21.77	21.77	21.77	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	23.96	22.04	21.77	21.77
SPP South - Energy Price - 1H2023	4545	6/11/2035	6/11/2035	23.88	23.88	23.88	23.88	23.88	23.88	22.05	22.05	20.29	20.29	22.05	20.29	20.29	22.05	22.05	20.29	22.05	22.05	22.05	22.05	22.05	22.05	23.88	23.88
SPP South - Energy Price - 1H2023	4546	6/12/2035	6/12/2035	21.86	21.86	21.86	6.16	21.86	21.86	17.46	6.43	1.59	17.46	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	21.86	21.86
SPP South - Energy Price - 1H2023	4547	6/13/2035	6/13/2035	21.82	21.82	21.82	21.82	21.82	21.82	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.64	20.37	23.85	21.82
SPP South - Energy Price - 1H2023	4548	6/14/2035	6/14/2035	23.13	23.13	23.13	23.13	23.13	23.13	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.43	21.58	23.49	22.67	24.25	23.65
SPP South - Energy Price - 1H2023	4549	6/15/2035	6/15/2035	23.61	23.65	23.27	23.27	23.53	23.67	21.55	21.55	21.55	21.55	21.55	21.55	21.55	21.55	23.68	23.74	24.23	23.51	24.59	24.59	24.59	24.23	25.89	25.7
SPP South - Energy Price - 1H2023	4550	6/16/2035	6/16/2035	24.63	23.92	23.69	23.42	23.65	23.75	23.71	23.96	24.56	25.3	25.78	25.78	25.78	25.78	25.78	23.56	23.56	23.56	26.16	26.06	23.56	23.56	25.23	23.27
SPP South - Energy Price - 1H2023	4551	6/17/2035	6/17/2035	23.94	23.68	23.27	23.27	23.27	23.67	23.56	23.96	23.84	25.78	25.78	24.67	25.78	26.49	25.78	24.37	25.78	26.49	26.49	26.5	26.93	26.5	25.97	25.46
SPP South - Energy Price - 1H2023	4552	6/18/2035	6/18/2035	26.71	25.93	24.68	24.53	25.39	25.93	23.14	23.45	22.46	22.46	22.46	22.83	22.46	22.46	22.46	22.46	22.46	22.46	23.45	23.55	25.95	24.14	27.09	26.71
SPP South - Energy Price - 1H2023	4553	6/19/2035	6/19/2035	27.01	26.27	25.4	24.81	26.27	26.27	23.98	24.17	24.65	23.57	23.54	23.16	25.87	25.87	25.87	25.59	23.8	24.97	25.87	25.87	25.87	25.87	27.66	27.34
SPP South - Energy Price - 1H2023	4554	6/20/2035	6/20/2035	27.52	27.68	27.52	27.52	27.52	27.52	23.52	24.41	24.3	23.56	23.84	23.42	23.58	24.54	25.42	23.58	25.42	24.99	25.42	26.63	29.52	26.63	28.3	27.68
SPP South - Energy Price - 1H2023	4555	6/21/2035	6/21/2035	27.81	27.68	27.68	27.68	27.68	27.61	24.66	25.7	25.01	26.52	26.52	24.39	26.52	26.88	28.2	26.88	27.57	28.2	30.19	30.23	30.8	29.11	30.03	27.87
SPP South - Energy Price - 1H2023	4556	6/22/2035	6/22/2035	27.54	27.54	27.54	26.79	27.54	27.54	23.91	24.02	24.27	24.53	24.39	24.2	24.92	25.68	26	26.01	24.89	25.68	25.68	25.68	25.9	25.68	27.16	27.05
SPP South - Energy Price - 1H2023	4557	6/23/2035	6/23/2035	27.38	26.79	26.39	26.12	25.69	25.34	25.7	26.78	27.12	27.12	25.13	27.12	27.12	27.88	27.88	27.12	27.12	27.12	27.38	27.12	27.38	27.12	24.49	25.11
SPP South - Energy Price - 1H2023	4558	6/24/2035	6/24/2035	24.46	25.05	24.46	24.88	24.93	24.46	25.09	24.76	24.76	24.76	24.76	24.76	24.76	26.91	26.91	27.12	27.12	27.12	24.76	24.76	26.91	24.76	24.46	24.46
SPP South - Energy Price - 1H2023	4559	6/25/2035	6/25/2035	22.49	21.91	21.91	22.28	22.39	22.72	20.68	20.61	20.93	20.64	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	21.91	21.91
SPP South - Energy Price - 1H2023	4560	6/26/2035	6/26/2035	23.18	23.18	23.18	23.18	23.18	23.18	21.48	21.48	21.48	22.86	21.93	21.57	22.51	21.75	23.35	23.35	23.35	21.48	21.75	23.35	23.47	23.47	25.19	24.61
SPP South - Energy Price - 1H2023	4561	6/27/2035	6/27/2035	25.19	24.27	24.2	25.39	25.19	24.58	22.24	21.92	21.92	21.92	21.92	21.92	22.22	22.02	21.92	21.92	21.92	21.92	22.22	22.43	23.03	22.59	24.57	23.73
SPP South - Energy Price - 1H2023	4562	6/28/2035	6/28/2035	21.58	21.4	21.06	21.06	21.54	21.2	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75	20.66	21.2	19.75	19.77	20.86	20.81	20.14	20.78	21.46	21.06
SPP South - Energy Price - 1H2023	4563	6/29/2035	6/29/2035	24.34	24.16	24.1	24.05	24.3	24.08	22.21	22.01	24.38	24.38	22.43	23.49	24.92	24.92	24.92	24.92	24.92	25.24	28.23	25.24	24.98	23.76	25.77	25.87
SPP South - Energy Price - 1H2023	4564	6/30/2035	6/30/2035	25.87	24.92	24.1	24.13	24.86	24.44	24.38	24.88	26.18	24.55	23.92	26.18	26.55	26.55	26.19	26.92	26.19	26.92	26.19	26.18	26.18	26.19	25.87	25.12

SPP South - Energy Price - 1H2023	4565	7/1/2035	7/1/2035	40.91	40.91	40.91	39.21	39.12	40.71	42.4	42.1	42.81	42.81	41.73	44.6	45.67	45.79	45.67	45.67	45.67	43.73	46.53	45.78	46.79	46.94	41.69	40.92
SPP South - Energy Price - 1H2023	4566	7/2/2035	7/2/2035	41.73	41.37	41.62	41.62	41.62	41.61	41.52	41.08	39.59	41.03	41.58	44.75	50.11	50.11	50.11	50.11	47.16	44.75	48.64	44.75	44.75	44.75	42.22	42.22
SPP South - Energy Price - 1H2023	4567	7/3/2035	7/3/2035	42.36	41.57	39.78	39.82	42.26	41.92	44.12	44.18	44.7	50.82	49.92	49.69	52.44	52.22	52.92	52.93	52.91	54.34	58.72	50.83	53.97	54.51	51.72	51.72
SPP South - Energy Price - 1H2023	4568	7/4/2035	7/4/2035	50.9	44.5	43.45	43.44	43.45	44.01	44.77	46.51	50.83	47.99	54.13	53.34	53.86	53.52	50.83	50.83	49.55	53.48	54.15	54.07	53.94	54.47	51.72	45.14
SPP South - Energy Price - 1H2023	4569	7/5/2035	7/5/2035	42.44	41.8	41.8	41.8	41.99	42.44	43.33	43.33	43.33	43.33	43.33	43.26	43.86	43.86	51.08	50.52	50.69	51.33	52.53	52.13	49.03	52.44	51.79	44.99
SPP South - Energy Price - 1H2023	4570	7/6/2035	7/6/2035	44.01	42.14	41.68	41.6	41.25	41.15	41.97	42.12	42.54	43.85	45.78	46.41	48.75	49.26	50.23	49.77	50.63	51.42	52.63	51.62	51.72	51.76	55.97	52.16
SPP South - Energy Price - 1H2023	4571	7/7/2035	7/7/2035	47.25	44.4	43.45	43.45	41.69	41.09	45.86	45.86	44.62	44.62	45.86	45.86	45.86	44.84	46.77	48.64	49.12	54.5	59.59	61.17	60.39	54.5	46.83	43.18
SPP South - Energy Price - 1H2023	4572	7/8/2035	7/8/2035	42.42	41.09	41.09	41.09	40.54	39.97	44.62	44.62	44.62	44.62	45.38	44.62	45.86	45.86	47.56	45.86	48.5	48.5	45.86	50.27	48.5	48.5	41.09	39.97
SPP South - Energy Price - 1H2023	4573	7/9/2035	7/9/2035	41.45	41.45	41.45	41.45	41.45	41.45	42.1	41.2	40.92	41.26	41.26	41.26	41.26	38.6	41.26	41.26	38.6	41.26	43.12	42.48	43.13	43.99	41.45	41.45
SPP South - Energy Price - 1H2023	4574	7/10/2035	7/10/2035	40.34	41.45	41.45	40	40.05	42.03	44.07	44.56	42.68	41.93	42.53	44.57	45.14	44.59	45.14	48.32	45.14	45.38	45.14	45.14	45.14	44.56	42.03	42.07
SPP South - Energy Price - 1H2023	4575	7/11/2035	7/11/2035	42.4	42.4	42.4	42.4	42.4	42.4	43.84	43.01	40.69	40.33	40.33	40.33	42.16	43.84	41.39	43.84	41.35	43.84	45.47	44.89	43.84	41.32	41.56	41.56
SPP South - Energy Price - 1H2023	4576	7/12/2035	7/12/2035	39.98	41.56	41.56	41.6	41.69	41.24	40.5	40.91	40.5	40.5	42.24	45.69	41.41	45.69	41.41	41.44	40.5	40.5	45.03	46.79	40.5	46.79	44.01	43.81
SPP South - Energy Price - 1H2023	4577	7/13/2035	7/13/2035	42.5	39.37	38.81	38.81	39.68	41.18	39.45	44.33	43.06	44.15	44.99	44.99	44.99	44.99	44.99	43.65	44.99	45.57	47.56	48.44	46.68	47.44	48.59	43.7
SPP South - Energy Price - 1H2023	4578	7/14/2035	7/14/2035	42.5	42.5	42.37	41.6	41.54	41.15	44.23	44.23	43.32	44.93	44.23	43.32	46.32	46.09	47.41	47.44	47.94	47.95	50.42	48.77	48.07	48.07	42.84	42.48
SPP South - Energy Price - 1H2023	4579	7/15/2035	7/15/2035	40.4	38.81	38.81	38.81	40.33	39.98	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	47.08	43.32	43.32	47.44	47.44	54.68	49.12	42.5	42.5
SPP South - Energy Price - 1H2023	4580	7/16/2035	7/16/2035	41.99	41.96	41.19	41.6	41.69	41.15	41.23	41.23	43.4	42.66	45.35	44.72	48.03	49.23	49.23	49.23	49.23	51.49	51.68	51.68	52.14	51.49	49.93	46.65
SPP South - Energy Price - 1H2023	4581	7/17/2035	7/17/2035	43.13	43.13	41.68	42.26	42.32	42.17	43.3	44.33	43.79	45	43.78	46.01	47.62	49.6	48.18	48.19	48.21	44.33	52.25	48.19	48.19	50.1	46.06	41.17
SPP South - Energy Price - 1H2023	4582	7/18/2035	7/18/2035	40.58	40.44	39.61	40.58	40.58	38.44	38.45	37.9	37.9	37.9	39.47	41.22	41.23	37.9	41.22	41.26	43.25	42.89	43.78	45.58	41.23	43.25	40.58	40.58
SPP South - Energy Price - 1H2023	4583	7/19/2035	7/19/2035	39.51	39.51	39.51	39.51	39.51	39.52	40.41	39.96	40.5	40.16	41.17	42.79	41.18	42.29	44.82	42.79	42.29	42.29	45.13	46.33	46.4	46.8	44.01	40.61
SPP South - Energy Price - 1H2023	4584	7/20/2035	7/20/2035	39.22	39.22	39.22	39.22	39.22	39.22	41.1	42.02	42.02	42.66	42.51	42.66	42.51	42.02	42.51	42.51	42.51	42.66	47.39	43.51	44.1	42.51	40.3	40.3
SPP South - Energy Price - 1H2023	4585	7/21/2035	7/21/2035	39.22	39.22	39.21	39.22	39.22	40.3	43.77	43.77	43.19	43.77	43.77	44.98	44.98	44.09	44.98	44.98	46.24	44.98	45.09	44.98	44.98	43.77	39.21	37.41
SPP South - Energy Price - 1H2023	4586	7/22/2035	7/22/2035	38.19	37.01	36.61	36.53	39.22	36.07	40.02	40.26	40.02	40.02	40.02	42.9	43.77	43.77	44.98	44.98	44.98	44.98	44.98	43.99	43.77	44.98	40.3	39.22
SPP South - Energy Price - 1H2023	4587	7/23/2035	7/23/2035	38.99	36.72	38.26	38.99	38.99	38.99	39.8	36.91	36.62	37.27	36.62	40.84	42.3	41.09	41.82	41.82	42.3	42.3	47.14	43.89	42.3	41.82	40.7	38.99
SPP South - Energy Price - 1H2023	4588	7/24/2035	7/24/2035	39.36	39.36	39.36	39.36	38.72	39.36	39.29	39.53	36.91	40.58	41.87	39.22	42.64	42.64	42.15	42.64	42.64	42.64	47.55	43.78	42.64	42.64	40.45	40.45
SPP South - Energy Price - 1H2023	4589	7/25/2035	7/25/2035	40.86	39.76	39.76	36.34	39.07	39.76	39.61	41.12	41.48	42.51	43.02	43.02	43.02	44.08	44.62	43.34	44.06	44.34	49.43	47.5	46.89	42.51	40.97	40.97
SPP South - Energy Price - 1H2023	4590	7/26/2035	7/26/2035	36.77	40.23	41.35	41.35	41.35	41.35	43.46	42.93	40.91	42.94	43.46	48.54	49.73	50.35	50.35	49.3	49.82	50.3	50.08	50.3	49.75	48.54	42.4	41.35
SPP South - Energy Price - 1H2023	4591	7/27/2035	7/27/2035	39.91	41.02	40.2	41.02	41.35	44.01	42.65	42.64	43.16	43.16	42.73	42.65	46.14	49.95	50.09	49.1	49.65	49.65	49.81	50.14	48.17	45.39	42.28	39.91
SPP South - Energy Price - 1H2023	4592	7/28/2035	7/28/2035	39.91	39.52	36.48	39.71	39.91	36.48	44.33	44.54	45.78	45.78	49	49.12	49.12	49.12	49.12	49.12	49.12	45.78	49.12	45.78	45.73	45.78	40.12	39.91
SPP South - Energy Price - 1H2023	4593	7/29/2035	7/29/2035	38.24	38.89	39.91	38.11	39.91	38.71	41	41.79	40.72	40.72	42.54	44.54	44.67	45.78	48.98	45.87	49.12	49.12	49.12	54.26	50.68	49.12	41.02	41.02
SPP South - Energy Price - 1H2023	4594	7/30/2035	7/30/2035	40.34	39.25	39.61	39.13	39.25	40.34	41.1	41.1	41.09	41.16	42.05	43.72	43.16	46.3	47.43	47.43	48.69	49.07	49.45	49.72	49.7	49.84	44.63	44.5
SPP South - Energy Price - 1H2023	4595	7/31/2035	7/31/2035	43.91	41.45	41.45	41.45	41.45	43.91	43.44	43.02	41.94	43.02	43.55	43.55	48.65	50.95	55.51	55.51	55.51	57.27	57.43	55.51	55.51	51.24	49.28	44.83
SPP South - Energy Price - 1H2023	4596	8/1/2035	8/1/2035	46.34	41.9	45.36	45.36	46.34	46.34	49.14	47.95	45.21	49.14	49.79	50.44	55.89	55.89	55.89	55.89	55.89	58.2	55.89	55.89	55.89	54.49	46.64	46.34
SPP South - Energy Price - 1H2023	4597	8/2/2035	8/2/2035	45.9	45.9	44.43	44.23	45.89	45.9	48.93	47.71	49.64	49.64	49.9	49.64	49.64	50.3	48.38	51.48	56.52	56.52	57.49	52.99	50.3	50.19	45.9	45.89
SPP South - Energy Price - 1H2023	4598	8/3/2035	8/3/2035	45.89	45.89	45.63	45.63	45.89	46.34	45.51	45.15	44.64	43.32	44.64	44.64	49.39	49.39	49.39	49.39	47.84	50.05	52.6	52.79	50.05	49.39	46.34	46.34
SPP South - Energy Price - 1H2023	4599	8/4/2035	8/4/2035	45.63	45.96	45.63	45.09	45.63	44.03	41.83	41.37	41.36	41.36	41.36	41.75	43.48	43.48	43.48	43.6	43.77	44.16	43.48	44.71	44.71	44.65	46.91	46.34
SPP South - Energy Price - 1H2023	4600	8/5/2035	8/5/2035	46.34	45.96	46.34	46.34	45.63	45.63	43.48	43.48	41.36	41.36	43.48	43.48	43.48	44.16	43.48	43.48	44.2	44.95	44.71	46.43	49.86	44.95	46.34	45.7
SPP South - Energy Price - 1H2023	4601	8/6/2035	8/6/2035	46.06	46.06	45.98	46.06	46.06	46.34	48.58	47.93	46.75	49.79	49.79	49.99	50.46	50.46	52.71	52.02	52.71	53.11	54.44	55.02	53.44	50.34	46.06	46.06
SPP South - Energy Price - 1H2023	4602	8/7/2035	8/7/2035	45.14	45.14	45.14	45.13	45.14	45.14	47.87	47.51	45.56	44.96	48.93	49.58	49.58	49.58	49.58	49.58	48.93	48.93	48.93	49.58	49.58	48.93	45.14	45.14
SPP South - Energy Price - 1H2023	4603	8/8/2035	8/8/2035	37.87	37.87	37.87	37.87	37.87	37.87	38.4	38.74	36.9	36.9	36.9	36.9	36.9	37.06	42.2	38.02	41.32	40.35	42.2	42.41	42.07	40.87	37.87	37.87
SPP South - Energy Price - 1H2023	4604	8/9/2035	8/9/2035	33.98	33.98	33.98	33.98	33.98	33.98	35.09	34.15	33.68	33.68	33.68	33.68	36.16	36.77	38.6	38.6	38.6	38.6	38.6	38.92	38.92	38.6	34.88	34.88
SPP South - Energy Price - 1H2023	4605	8/10/2035	8/10/2035	33.62	33.62	33.62	33.62	33.62	33.25	35.13	35.72	33.38	33.38	33.38	33.38	35.86	36.48	34.74	38.26	38.26	38.26	38.57	38.57	38.26	37.94	33.62	33.62
SPP South - Energy Price - 1H2023	4606	8/11/2035	8/11/2035	33.62	33.62	33.62	33.62	33.62	33.62	32.04	32.04	32.04	32.04	32.04	32.89	32.89	34.94	34.95	34.83	34.08	34.65	34.63	34.25	32.48	32.04	33.62	33.62
SPP South - Energy Price - 1H2023	4607	8/12/2035	8/12/2035	33.62	30.87	30.87	30.87	30.87	30.87	29.42	29.68	29.42	29.42	29.42	29.42	29.42	32.04	32.04	32.04	29.48	31.1	34.62	35.6	32.89	32.89	34.51	33.62
SPP South - Energy Price - 1H2023	4608	8/13/2035	8/13/2035	39.95	39.95	39.58	39.07	38.54	38.93	41.07	39.93	37.78	38.27	39.92	43.18	43.18	40.88	43.18	43.18	43.18	43.18	43.65	43.73	44.34	43.65	40	39.68
SPP South - Energy Price - 1H2023	4609	8/14/2035	8/14/2035	46.34	45.49	45.47	44.96	44.43	44.41	44.64	44.31	43.21	44.63	44.64	45.02	45.71	47.97	48.64	51.01	48.93	49.92	57.65	56.04	49.92	49.8	46.34	45.57
SPP South - Energy Price - 1H2023	4610	8/15/2035	8/15/2035	46.34	46.34	46.34	46.07	45.54	46.34	47.92	46.06	44.23	45.27	44.7	46.13	48.79	50.4	53.5	54.51	51.09	51.09	59.93	60.5	57.48	51.09	46.72	46.34
SPP South - Energy Price - 1H2023	4611	8/16/2035	8/16/2035	46.34	46.34	46.31	46.32	46.34	46.34	48.55	46.68	44.67	45.65	46.53	47.12	48.84	51.91	50.7	55.19	57	57	60.11	60.07	58.61	57	55.34	47.63
SPP South - Energy Price - 1H2023	4612	8/17/2035	8/17/2035	46.03	46.03	46.32	46.03	46.03	46.32	49.04	47.58	45.6	45.11	49.23	49.23	49.69	50.09	56.25	56.25	56.25	56.25	56.25	57.91	56.25	55.21	49.52	46.03
SPP South - Energy Price - 1H2023	4613	8/18/2035	8/18/2035	45.86	44.77	44.77	44.77	44.77	44.77	42.67	42.67	40.71	42.67	42.67	43.87	45.3	52.24	56.94	56.49	57.31	59.77	57.88	58.08	58.35	55.47	46.46	46.03
SPP South - Energy Price - 1H2023	4614	8/19/2035	8/19/2035	46.03	45.95	44.77	44.77	44.77	44.77	42.67	42.67	43.85	43.87	43.87	44.27	44.16	50.03	52.24	55.03	57.14	57.63	57.5	58.08	57.14	52.24	46.46	46.34
SPP South - Energy Price - 1H2023	4615	8/20/2035	8/20/2035	46.27	46.27	46.27	46.27	46.27	46.34	49.82	53.73	52.87	53.1	58.77	57.95	57.79	58.12	60.41	59.15	59.15	59.15	65.82	63.2	58.89	58.68	55.1	46.93
SPP South - Energy Price - 1H2023	4616	8/21/2035	8/21/2035	46.93	46.93	46.77	46.26	43.02	46.93	51.3	51.3	48.58	51.3	51.3	50.6	50.6	51.15	58.8	51.83	51.83	51.83	61.59	57.72	51.3	51.3	46.94	46.94
SPP South - Energy Price - 1H2023	4617	8/22/2035	8/22/2035	46.34	46.34	46.34	46.34	45.87	46.34	48.8	49.33	47.31	50.83	51.44	56.27	60.4	60.97	67.74	71.71	76.87	71.71	75.13	71.71	68.13	61.58	65.34	54.92
SPP South - Energy Price - 1H2023	4618	8/23/2035	8/23/2035	49.04	47.84	47.68	47.69	47.69	50.22	56.22	52.01	52.01	52.01	54.78	58.59	60.31	61.76	62.1	62.36	62.36	67.06	69.69	74.71	62.86	58.59	58.21	52.94
SPP South - Energy Price - 1H2023	4619	8/24/2035	8/24/2035	48.7	49.04	47.82	49.95	50.91	50.91	58.2	58.2	58.2	62.89	66.32	71.23	65.5	59.38	61.01	68.13	66.32	73.9	74.97	66.32	58.2	58.2	48.7	48.7
SPP South - Energy Price - 1H2023	4620	8/25/2035	8/25/2035	47.53	47.35	47.74	47.35	47.35	47.83	45.12	44.16	44.16	45.12	45.12	51.25	55.35	55.35	58.08	58.06	58.77	58.83	66.57	60.33	58.08	51.63	48.69	48.69
SPP South - Energy Price - 1H2023	4621	8/26/2035	8/26/2035	47.35	47.35	46.34	46.34	46.34	46.34	44.16	44.16	44.16	44.16	44.16	45.12	45.12	45.12	46.41	45.12	45.12	45.12	48	50.99	50.62	46.41	47.35	47.35
SPP South - Energy Price - 1H2023	4622	8/27/2035	8/27/2035	39.84	40.23	40.23	38.62	38.62	38.62	41.9	37.55	37.32	37.09	38.38	37.78	37.09	41.95	41.95	42.21	42.37	44.31	46.75	47.17	47.76	45.02	45.73	42.39
SPP South - Energy Price - 1H2023	4623	8/28/2035	8/28/2035	45.8	45.8	45.8	45.8	45.8	45.8	48.4	48.39	44.52	44.89	44.81	48.39	48.39	48.39	49.02	49.02	49.02	54.88	56.02	54.96	54.96	50.99	46.34	45.8
SPP South - Energy Price - 1H2023	4624	8/29/2035	8/29/2035	45.74	45.74	44.49	45.74	45.74	45.74	47.24	45.11	42.38	42.38	42.38	42.38	42.38	42.38	44.6	42.38	44.61	54.88	53.9	54.29	54.85	48.96	44.49	44.49
SPP South - Energy Price - 1H2023	4625	8/30/2035	8/30/2035	42.28	42.28	42.33	42.28	42.39	43.46	46.29	42.88	40.55	40.85	40.55	40.55	40.55	40.55	45.12	44.53	46.85	52.09	53.29	53.3	52.32	52	46.69	45.1
SPP South - Energy Price - 1H2023	4626	8/31/2035	8/31/2035	45.1	45.1	41.78	45.1	45.1	45.1	44.61	43.55	43.08	44.33	44.1	44.47	47.9	49.79	64.42	64.42	58.38	64.42	51.78	50.14	49.55	48.31	43.71	41.1
SPP South - Energy Price - 1H2023	4627	9/1/2035	9/1/2035	32.6	34.64	33.15	32.6	31.76	32.6	46.97	46.87	47.18	47.18	51.2	54.36	50.01	55.04	55.92	55.92	55.92	55.92	60.12	60.81	61.64	55.92	35.87	31.73
SPP South - Energy Price - 1H2023	4628	9/2/2035	9/2/2035	31.73	30.85	31.73	30.85	30.85	31.2	44.65	44.65	44.11	42.7	45.92	45.92	47.18	49.09	55.04	55.04	55.2	58.94	56.61	60.81	59.05	55.04	32.6	32.6
SPP South - Energy Price - 1H2023	4629	9/3/2035	9/3/2035	32.6	32.6	32.6	31.73	32.98	32.98	34.18	33.9	31.45	33.82	33.82	33.82	33.82	34.07	34.46	34.18	34.18	36.55	38.34	38.03	37.53	34.93	35.87	32.89
SPP South - Energy Price - 1H2023	4630	9/4/2035	9/4/2035	37.67	37.45	37.67	37.45	36.34	37.67	37.31	35.12	34.31	34.84	34.31	35.85	36.77	36.9	39.11	39.63	39.63	39.11	39.63	39.63	39.63	39.01	36.73	35.38
SPP South - Energy Price - 1H2023	4631	9/5/2035	9/5/2035	35.81	36.2	36.37	35.84	36.37	38.02	39.53	39.53	39.53	40.07	42.88	44.61	44.61	45.06	44.88	41.04	44.39	41.4	44.61	45.06	44.61	40.07	38.15	38.15
SPP South - Energy Price - 1H2023	4632	9/6/2035	9/6/2035	38.02	38.02	37.49	37.49	38.02	38.02	38.95	38.95	38.25	36.26	35.47	35.31	34.7	34.46	35.17	35.12	34.16	38.85	38.95	37.72	39.09	36.53	37.49	37.49
SPP South - Energy Price - 1H2023	4633	9/7/2035	9/7/2035	35.84	34.89	35.27	34.85	34.6	35.84	35.09	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	33.81	34.57	34.99	35.28	33.81	33.82	33.82
SPP South - Energy Price - 1H2023	4634	9/8/2035	9/8/2035	33.82	33.82	33.82	33.82	34.26	34.21	49.9	48.95	48.95	48.95	48.95	48.95	48.95	48.95	48.95	48.95	53.61	53.61	55.04	53.62	53.62	53.61	34.32	33.82
SPP South - Energy Price - 1H2023	4635	9/9/2035	9/9/2035	33.82	33.82	33.82	33.82	33.82	33.82	48.95	48.95	48.95	48.95	48.95	48.95	48.95	53.61	48.95	53.61	48.95	53.21	54.34	55.04	53.21	52.51	35.87	35.48
SPP South - Energy Price - 1H2023	4636	9/10/2035	9/10/2035	34.43	34.82	35.18	35.18	35.18	36.61	37.43	37.6	37.51	35.13	35.52	33.73	35.13	38.16	38.16	38.16	38.63	38.16	39.38	39.21	38.66	38.16	36.61	34.43
SPP South - Energy Price - 1H2023	4637	9/11/2035	9/11/2035	34.43	34.43	34.15	34.43	34.43	34.43	36.59	36.78	34.45	32.72	32.72	32.72	32.72	32.89	33	32.72	32.72	36.46	36.89	35.63	34.27	32.72	32.59	32.59
SPP South - Energy Price - 1H2023	4638	9/12/2035	9/12/2035	33.07	33.07	33.07	33.07	33.07	33.07	33.15	33.15	33.15	33.15	33.15	33.15	33.15	33.15	33.15	33.15	33.15	33.15	38.29	35.12	35.97	33.15	35.18	35.48
SPP South - Energy Price - 1H2023	4639	9/13/2035	9/13/2035	34.68	33.68	34.07	34.58	34.58	34.14	33.69	33.69	33	33	33.69	33.69	33.69	33.69	33.69	33.69	33.69	35.16	38.92	38.91	38.41	36.05	35.9	35.58
SPP South - Energy Price - 1H2023	4640	9/14/2035	9/14/2035	34.39	34.64	34.39	34.39	34.64	35.62	36.42	35.04	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.54	32.54
SPP South - Energy Price - 1H2023	4641	9/15/2035	9/15/2035	32.54	32.54	32.54	32.54	32.54	32.54	47.1	10.72	9.37	8.69	2.26	10.96	13.4	15.18	17.39	19.27	19.98	47.1	47.1	47.1	47.1	47.1	32.54	32.54
SPP South - Energy Price - 1H2023	4642	9/16/2035	9/16/2035	32.54	32.54	32.54	32.54	32.54	32.54	47.1	10.72	9.37	1.9	9.97	10.96	13.4	15.18	17.39	45.03	47.1	47.1	47.1	47.1	47.1	47.1	32.54	32.54
SPP South - Energy Price - 1H2023	4643	9/17/2035	9/17/2035	30.39	30.39	30.39	30.39	30.39	30.39	30.77	30.77	30.77	30.77	30.77	30.77	30.77	30.77	33	35.15	35.15	35.15	35.15	35.15	34.92	32.73	32.22	30.51
SPP South - Energy Price - 1H2023	4644	9/18/2035	9/18/2035	32.68	33.29	32.66	33.29	33.59	33.74	35.08	35.03	35.08	35.08	34.89	33.95	35.03	37.12	37.12	37.55	37.55	37.58	38.05	37.55	37.12	34.8	32.88	32.73
SPP South - Energy Price - 1H2023	4645	9/19/2035	9/19/2035	32.33	32.33	32.61	32.49	32.73	32.73	34.83	34.83	32.49	32.72	32.49	34.36	33	34.83	33	33.91	34.09	37.31	37.54	37.54	35.08	33.43	32.83	32.68
SPP South - Energy Price - 1H2023	4646	9/20/2035	9/20/2035	32.46	32.46	32.75	32.62	32.8	32.85	35.03	32.86	32.61	32.61	32.61	32.61	34.76	35.08	32.61	35.09	35.09	37.47	41.75	38.53	36.25	35.09	35.53	34.44
SPP South - Energy Price - 1H2023	4647	9/21/2035	9/21/2035	31.17	31.17	31.52	31.63	31.63	32.16	33.15	31.63	30.94	30.94	30.94	30.94	30.94	30.94	30.94	30.94	30.94	31.01	33.34	32	30.94	30.94	30.58	30.58

SPP South - Energy Price - 1H2023	4648	9/22/2035	9/22/2035	30.58	30.58	30.58	30.58	30.58	30.58	44.26	10.72	9.37	8.69	9.97	9.97	9.97	15.18	17.39	21.72	19.98	44.26	44.26	44.26	44.26	44.26	30.58	18.49
SPP South - Energy Price - 1H2023	4649	9/23/2035	9/23/2035	13.64	12.38	12.01	11.46	11.02	10.7	13.11	3.13	2.87	0	0	0	0	5.15	4.33	20.16	19.45	44.26	44.26	44.26	44.26	44.26	13.4	12.94
SPP South - Energy Price - 1H2023	4650	9/24/2035	9/24/2035	11.46	11.46	10.66	11.46	11.02	11.46	30.02	9.95	6.49	6.59	7.16	11.71	15.64	30.89	30.89	30.89	30.89	31.81	34.21	32.52	32.6	32.25	30.52	30.52
SPP South - Energy Price - 1H2023	4651	9/25/2035	9/25/2035	32.53	32.53	32.53	32.53	32.53	32.53	32.67	32.67	32.66	32.66	32.67	32.67	32.67	32.67	32.67	32.67	33.31	37.07	37.27	36.88	36.43	34.54	34.51	32.8
SPP South - Energy Price - 1H2023	4652	9/26/2035	9/26/2035	32.8	32.8	32.8	32.8	32.8	33.67	34.3	34.59	35.1	35.1	35.08	33.57	35.1	35.61	36.22	36.53	36.8	38.01	37.54	36.9	36.98	35.05	34.78	32.8
SPP South - Energy Price - 1H2023	4653	9/27/2035	9/27/2035	32.96	32.96	32.96	32.96	32.96	34.35	34.4	34.47	33.05	33.05	33.05	33.05	33.05	33.05	33.05	33.05	33.05	35.11	33.05	33.05	33.05	33.05	32.96	32.96
SPP South - Energy Price - 1H2023	4654	9/28/2035	9/28/2035	33.21	33.21	33.21	33.21	33.21	33.21	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.21	33.21
SPP South - Energy Price - 1H2023	4655	9/29/2035	9/29/2035	33.21	33.21	33.21	33.21	33.21	33.21	48.07	48.07	4.75	2.61	0	0	0	0	0	0	4.21	17.9	48.07	38.56	18.72	18.72	13.4	12.94
SPP South - Energy Price - 1H2023	4656	9/30/2035	9/30/2035	13.34	12.94	13.61	23.52	33.21	33.21	48.07	34.04	10.82	10.99	11.94	11.94	11.94	5.15	11.94	20.16	48.07	48.07	48.98	48.07	48.07	48.07	33.21	33.21
SPP South - Energy Price - 1H2023	4657	10/1/2035	10/1/2035	18.97	18.97	18.97	18.97	18.97	18.97	20.31	20.31	18.68	18.68	18.68	20.31	20.31	20.31	20.31	20.31	20.31	20.31	21.78	21.35	20.6	20.31	18.97	18.97
SPP South - Energy Price - 1H2023	4658	10/2/2035	10/2/2035	17.77	17.77	17.77	17.77	17.77	17.77	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	19.16	17.77	17.77
SPP South - Energy Price - 1H2023	4659	10/3/2035	10/3/2035	17.72	17.72	17.72	17.72	17.72	17.72	19.12	19.12	19.12	5.63	5.34	5.1	19.12	19.12	19.12	19.12	19.12	19.12	19.12	19.12	19.12	19.12	17.72	17.72
SPP South - Energy Price - 1H2023	4660	10/4/2035	10/4/2035	18.46	18.46	18.46	18.46	17.72	18.46	19.82	7.44	4.15	4.21	4.58	5.1	8.19	7.53	13.77	19.82	19.82	19.82	20.63	19.82	19.82	20.2	18.46	18.46
SPP South - Energy Price - 1H2023	4661	10/5/2035	10/5/2035	18.61	18.61	18.61	18.61	18.61	18.61	20.2	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	21.11	21.7	21.77	20.2	20.2	18.61	18.61
SPP South - Energy Price - 1H2023	4662	10/6/2035	10/6/2035	18.61	18.61	18.61	18.61	18.61	18.61	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	24.4	24.4	23.8	22.45	22.45	18.61	18.61
SPP South - Energy Price - 1H2023	4663	10/7/2035	10/7/2035	18.61	18.61	18.61	18.61	18.61	18.61	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	22.45	18.61	18.61
SPP South - Energy Price - 1H2023	4664	10/8/2035	10/8/2035	20.64	20.64	20.64	20.64	20.64	20.64	23.05	21.94	22.94	23.05	23.05	21.75	23.05	21.75	21.75	23.05	23.05	26.02	26.43	23.05	23.05	21.75	21.76	21.86
SPP South - Energy Price - 1H2023	4665	10/9/2035	10/9/2035	21.76	20.97	21.3	21.75	22.62	22.62	23.37	23.37	23.16	22.07	22.02	22.02	21.11	21.11	20.3	21.56	21.38	22.02	22.07	22.07	22.02	22.02	18.35	18.35
SPP South - Energy Price - 1H2023	4666	10/10/2035	10/10/2035	17.94	17.94	18.27	17.94	18.35	20.5	21.63	21.63	21.63	21.63	21.63	22.92	21.63	21.63	21.63	21.63	21.63	21.76	22.92	22.92	22.92	22.92	22.6	22.6
SPP South - Energy Price - 1H2023	4667	10/11/2035	10/11/2035	22.6	22.62	22.62	22.62	23.77	22.88	23.19	23.19	21.86	21.11	9.78	8.02	10	7.71	10.48	9.36	21.23	23.19	24.54	26.53	26	23.19	20.78	19.94
SPP South - Energy Price - 1H2023	4668	10/12/2035	10/12/2035	19.75	19.94	19.94	19.25	19.94	19.94	21.73	20.61	20.61	20.61	20.61	20.61	20.61	20.61	20.61	20.61	21.11	21.73	25.44	24.92	23.7	21.11	20.7	19.25
SPP South - Energy Price - 1H2023	4669	10/13/2035	10/13/2035	16.88	18.18	18.18	19.24	19.25	19.76	24.42	21.98	20.36	7.96	20.36	20.36	20.36	20.36	20.36	20.36	20.36	25.39	26.05	24.63	23.22	23.22	19.25	19.25
SPP South - Energy Price - 1H2023	4670	10/14/2035	10/14/2035	19.25	19.25	19.25	19.25	19.25	19.25	25.48	23.22	6.13	9.11	5.92	11.1	10.21	8.7	10.21	20.36	20.36	23.22	23.34	24.63	23.22	23.22	19.25	19.25
SPP South - Energy Price - 1H2023	4671	10/15/2035	10/15/2035	22.76	22.62	22.62	22.62	23.13	22.76	23.72	23.13	21.81	21.81	21.81	21.81	21.81	21.81	21.81	21.81	21.81	25.99	24.49	25.03	23.71	23.71	22.62	22.62
SPP South - Energy Price - 1H2023	4672	10/16/2035	10/16/2035	22.62	22.62	22.62	22.62	22.62	22.62	23.26	22.13	21.93	21.93	21.93	21.93	21.93	21.93	21.93	21.93	21.93	22.05	23.26	22.94	22.5	21.93	20.86	19.77
SPP South - Energy Price - 1H2023	4673	10/17/2035	10/17/2035	19.77	19.77	19.77	19.65	18.49	19.77	22.38	22.16	19.38	20.87	17.79	5.1	18.45	9.79	18.45	20.08	19.83	22.17	22.16	22.17	22.16	22.16	18.49	18.49
SPP South - Energy Price - 1H2023	4674	10/18/2035	10/18/2035	18.9	18.9	20.32	21.45	20.37	21.98	23.99	22.56	22.56	21.11	20.75	20.75	21.11	20.95	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	20.59	20.12
SPP South - Energy Price - 1H2023	4675	10/19/2035	10/19/2035	18.69	20.12	20.11	20.03	20.16	20.12	22.35	22.22	22.35	21.11	20.56	21.11	19.01	22.35	22.35	20.08	21.11	22.35	22.35	22.35	22.35	22.35	21.38	21.55
SPP South - Energy Price - 1H2023	4676	10/20/2035	10/20/2035	21.38	21.38	20.9	21.38	18.94	21.38	22.54	25.41	22.54	9.21	22.54	22.54	22.54	22.54	22.54	22.54	25.78	29.34	27.28	27.28	27.28	27.28	22.62	21.38
SPP South - Energy Price - 1H2023	4677	10/21/2035	10/21/2035	20.81	21.38	22.62	21.38	21.38	21.38	25.78	22.54	22.54	1.29	1.25	1.51	1.51	1.51	1.51	2.31	22.54	27.28	27.28	27.28	27.28	27.28	21.38	22.43
SPP South - Energy Price - 1H2023	4678	10/22/2035	10/22/2035	21.56	21.56	21.56	21.56	21.56	22.62	23.93	23.93	22.5	22.17	22.5	22.5	22.5	22.51	23.93	23.93	27.05	29.55	30.9	28.06	25.99	26.41	21.56	20.96
SPP South - Energy Price - 1H2023	4679	10/23/2035	10/23/2035	21.37	19.22	19.22	19.22	19.22	19.22	22.87	21.57	4.15	4.21	4.15	4.15	4.15	1.98	1.66	7.52	17.63	21.11	22.65	22.87	21.11	10.6	7.97	9.27
SPP South - Energy Price - 1H2023	4680	10/24/2035	10/24/2035	9.27	6.72	6.77	9.27	19.12	19.12	22.77	22.77	22.77	22.77	22.77	24.15	24.24	22.77	24.24	22.77	22.77	22.77	22.77	22.77	22.77	22.77	19.12	19.12
SPP South - Energy Price - 1H2023	4681	10/25/2035	10/25/2035	18.26	18.26	18.26	18.26	18.26	18.26	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	19.63	18.26	18.26
SPP South - Energy Price - 1H2023	4682	10/26/2035	10/26/2035	17.68	17.68	17.68	17.68	17.68	17.68	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.36	19.25	19.86	21.05	20.17	19.82	19.25	19.08	17.68	17.68
SPP South - Energy Price - 1H2023	4683	10/27/2035	10/27/2035	17.68	17.68	17.68	17.68	17.68	17.68	22.35	21.32	21.62	21.32	21.32	21.32	21.32	21.32	21.32	21.32	21.32	22.87	23.69	23.17	22.23	21.32	17.68	17.68
SPP South - Energy Price - 1H2023	4684	10/28/2035	10/28/2035	17.68	17.68	17.68	17.68	17.68	17.68	21.32	21.32	6.21	2.24	2.43	1.16	1.26	1.12	1.74	1.1	5.37	21.32	21.32	21.32	21.32	21.32	17.68	17.68
SPP South - Energy Price - 1H2023	4685	10/29/2035	10/29/2035	19.49	19.49	19.49	19.49	19.49	19.49	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	21.2	21.04	20.8	20.8	20.8	19.49	19.49
SPP South - Energy Price - 1H2023	4686	10/30/2035	10/30/2035	19.74	19.74	19.74	19.74	19.74	19.74	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.74	21.45	21.03	21.03	21.03	19.74	19.74
SPP South - Energy Price - 1H2023	4687	10/31/2035	10/31/2035	18.74	18.74	18.74	18.74	18.74	18.74	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	18.74	18.74
SPP South - Energy Price - 1H2023	4688	11/1/2035	11/1/2035	19.72	19.72	19.72	19.72	19.72	19.72	27.39	27.39	27.39	27.38	27.38	25.19	25.19	25.19	25.19	27.38	27.39	27.39	27.39	31.11	27.39	27.39	21.89	21.89
SPP South - Energy Price - 1H2023	4689	11/2/2035	11/2/2035	22.45	22.45	20.21	20.82	20.21	20.82	27.97	27.97	27.97	24.61	14.21	12.47	12.57	12.43	5.68	12.57	27.97	27.97	27.97	27.97	27.97	27.97	20.21	20.21
SPP South - Energy Price - 1H2023	4690	11/3/2035	11/3/2035	20.21	20.21	20.21	20.21	20.21	20.21	34.33	34.33	12.49	8.45	8.45	7.61	7.61	8.18	8.28	14.27	34.33	34.33	34.33	34.33	34.33	34.33	20.21	20.21
SPP South - Energy Price - 1H2023	4691	11/4/2035	11/4/2035	20.21	20.21	20.21	20.21	20.21	20.21	34.33	34.33	34.33	4.1	4.46	1.93	2.09	2.88	2.88	1.83	34.33	34.33	34.33	34.33	34.33	34.33	20.21	6.81
SPP South - Energy Price - 1H2023	4692	11/5/2035	11/5/2035	6.97	6.99	6.71	6.96	7.58	20.31	23.52	7.84	2.35	2.55	1.98	1.32	1.44	1.28	1.98	1.98	6.12	29.05	29.05	29.05	29.05	29.05	11.98	11.97
SPP South - Energy Price - 1H2023	4693	11/6/2035	11/6/2035	6.87	6.44	6.5	11.98	23.18	23.18	32.48	32.48	32.48	32.48	32.48	32.48	32.48	32.48	31.11	32.48	32.48	32.48	32.48	34.88	32.48	32.48	23.18	23.18
SPP South - Energy Price - 1H2023	4694	11/7/2035	11/7/2035	25.62	25.62	25.62	25.62	26.4	26.67	37.44	37.9	37.9	34.02	36.98	36.98	34.02	34.02	34.02	34.02	34.02	37.9	37.9	36.98	36.48	37.36	27.28	27.29
SPP South - Energy Price - 1H2023	4695	11/8/2035	11/8/2035	26.25	25.97	25.97	25.97	26.24	25.97	32.93	32.93	32.92	32.92	5.8	5.23	5.23	5.62	5.68	5.57	31.81	32.92	32.92	32.92	32.92	32.92	23.55	23.55
SPP South - Energy Price - 1H2023	4696	11/9/2035	11/9/2035	20.59	20.59	20.59	20.59	20.59	20.59	29.38	29.38	29.38	6.57	5.8	5.23	5.23	5.62	5.68	24.82	29.38	29.38	29.38	29.38	29.38	29.38	20.59	20.59
SPP South - Energy Price - 1H2023	4697	11/10/2035	11/10/2035	20.59	20.59	20.59	20.59	20.59	20.59	34.97	34.97	12.49	9.57	8.45	7.61	2.09	8.18	8.11	8.11	8.92	8.11	9.71	9.98	8.11	9.4	5.19	1.67
SPP South - Energy Price - 1H2023	4698	11/11/2035	11/11/2035	1.67	1.67	1.04	1.18	1.67	1.69	2.84	2.84	2.93	8.27	8.45	7.61	7.61	8.18	2.88	14.27	34.97	34.97	34.97	34.97	34.97	34.97	20.45	20.59
SPP South - Energy Price - 1H2023	4699	11/12/2035	11/12/2035	19.16	6.44	19.16	6.54	19.16	19.16	28.95	28.3	7.08	6.57	5.8	23	9.29	24.6	26.61	28.95	28.95	29.43	28.95	28.95	28.95	28.95	19.16	19.16
SPP South - Energy Price - 1H2023	4700	11/13/2035	11/13/2035	21.55	22.42	23.96	22.7	23.96	23.96	33	33	31.81	31.81	31.81	31.81	31.81	31.81	31.81	31.81	33	33.92	33.57	32.95	33	31.91	23.05	23.96
SPP South - Energy Price - 1H2023	4701	11/14/2035	11/14/2035	23.05	23.05	23.05	23.05	23.05	23.05	33.63	35.97	33.63	33.63	33.63	33.63	33.63	35.97	33.63	33.63	35.97	35.97	36.43	36.43	36.43	35.97	26.39	25.67
SPP South - Energy Price - 1H2023	4702	11/15/2035	11/15/2035	25.08	23.56	22.83	22.89	23.56	23.56	33	33	31.11	10.09	5.8	5.23	5.23	5.62	5.68	5.8	31.11	33	34.74	33	33	33	25.08	25.08
SPP South - Energy Price - 1H2023	4703	11/16/2035	11/16/2035	25.08	24.41	24.41	25.08	25.08	25.09	34.46	34.46	34.46	32.29	32.29	32.29	32.29	32.29	32.29	32.29	32.45	34.46	34.46	33.4	32.98	32.29	23.79	24.41
SPP South - Energy Price - 1H2023	4704	11/17/2035	11/17/2035	24.41	23.79	24.41	24.41	25.09	25.09	42.62	42.62	41.46	41.46	40.93	39.14	39.31	39.08	40.1	40.6	41.46	44.1	43.46	42.62	42.64	43.93	25.94	26.3
SPP South - Energy Price - 1H2023	4705	11/18/2035	11/18/2035	25.09	25.86	25.09	25.09	24.41	24.41	41.46	41.46	41.46	41.46	41.46	41.46	37.27	8.18	9.27	8.11	37.27	41.46	41.46	37.27	37.27	37.27	21.94	22.15
SPP South - Energy Price - 1H2023	4706	11/19/2035	11/19/2035	25.61	26.2	25.61	26.67	27.54	28.58	39.44	39.44	39.44	39.44	39.44	39.44	39.34	40.02	40.02	39.44	40.02	46.51	47.78	40.02	47.24	40.02	29.4	29.4
SPP South - Energy Price - 1H2023	4707	11/20/2035	11/20/2035	28.82	28.81	28.02	28.02	28.81	28.82	39.56	43.35	39.32	39.16	38.77	38.77	39.32	39.32	38.77	39.32	38.77	41.3	41.3	42.78	42.66	39.59	28.44	28.01
SPP South - Energy Price - 1H2023	4708	11/21/2035	11/21/2035	27.4	27.4	27.4	27.4	27.4	27.4	38.03	38.56	38.56	38.56	38.56	38.03	38.03	38.03	38.56	38.03	38.56	38.56	38.56	38.56	38.56	38.03	28.18	27.4
SPP South - Energy Price - 1H2023	4709	11/22/2035	11/22/2035	26.67	26.67	26.67	25.26	26.67	26.67	34.14	34.14	34.14	34.14	34.14	27.39	32.19	27.05	27.53	32.19	34.14	34.14	34.14	34.14	34.14	34.14	24.57	24.57
SPP South - Energy Price - 1H2023	4710	11/23/2035	11/23/2035	22.44	22.44	22.44	22.44	22.44	22.44	31.59	31.11	7.76	1.42	1.25	1.01	1.19	1.25	1.25	1.25	1.67	31.11	31.11	31.59	31.59	31.11	22.44	22.44
SPP South - Energy Price - 1H2023	4711	11/24/2035	11/24/2035	21.4	20.64	21.88	22.44	22.44	22.44	38.11	38.11	35.06	10.72	35.06	35.06	34.67	38.11	38.11	16.37	38.11	38.11	38.11	38.11	38.11	38.11	22.44	22.44
SPP South - Energy Price - 1H2023	4712	11/25/2035	11/25/2035	22.44	22.44	22.44	22.44	22.44	22.44	38.11	38.11	38.11	34.29	9.91	37.28	34.29	28.99	8.78	8.42	38.11	38.11	38.11	38.11	38.11	38.11	22.44	22.44
SPP South - Energy Price - 1H2023	4713	11/26/2035	11/26/2035	22.33	22.33	22.33	22.33	22.33	22.33	30.5	31.11	30.5	30.5	30.5	30.5	30.5	30.5	30.63	30.5	30.5	31.97	31.38	30.5	30.63	30.5	22.33	23.15
SPP South - Energy Price - 1H2023	4714	11/27/2035	11/27/2035	22.46	22.46	22.46	22.46	22.46	22.46	30.65	30.65	30.65	30.65	30.65	28.75	28.2	30.65	30.65	30.65	30.65	31.51	31.58	31.34	30.65	31.05	22.46	22.47
SPP South - Energy Price - 1H2023	4715	11/28/2035	11/28/2035	22.47	22.47	22.47	22.47	22.47	22.47	30.66	30.66	30.66	30.66	30.66	30.66	30.66	30.66	30.66	30.66	30.66	31.71	31.59	32.22	32.22	32.22	25.01	25.01
SPP South - Energy Price - 1H2023	4716	11/29/2035	11/29/2035	26.67	26.67	25.01	24.36	25.01	25.01	34.5	34.14	32.87	32.87	32.87	32.87	32.87	32.87	32.87	32.87	33.66	34.14	34.12	36.56	33.57	37.47	27.12	26.67
SPP South - Energy Price - 1H2023	4717	11/30/2035	11/30/2035	26.67	26.67	26.67	27.1	24.74	24.74	33.36	34.65	33.44	33.36	33.36	33.36	33.36	33.36	33.36	33.36	34.15	38.26	38.8	38.26	38.26	38.26	28.31	27.59
SPP South - Energy Price - 1H2023	4718	12/1/2035	12/1/2035	39.24	39.49	40.18	39.35	40.18	40.18	47.28	47.44	45.67	43.01	40.93	40.93	40.93	40.93	40.93	41.14	42.87	46.98	46.98	44.77	43.01	43.01	37.83	36.01
SPP South - Energy Price - 1H2023	4719	12/2/2035	12/2/2035	36.01	36.01	36.01	36.01	36.01	36.01	40.93	40.93	40.93	40.93	10.35	40.41	40.41	40.53	40.93	40.93	40.93	44.87	43.92	43.6	42.75	43.01	36.01	36.01
SPP South - Energy Price - 1H2023	4720	12/3/2035	12/3/2035	35.7	35.7	35.7	35.7	35.7	35.7	40.38	40.38	39.93	30.64	36.73	31.58	40.38	37.78	40.38	40.38	40.38	47.84	47.84	47.17	47.17	47.17	39.83	39.83
SPP South - Energy Price - 1H2023	4721	12/4/2035	12/4/2035	39.83	39.67	39.83	39.83	40.07	40.38	47.74	48.43	48.43	47.74	44.92	43.15	40.88	40.88	40.88	40.88	43.37	44.43	44.43	44.43	44.43	44.43	39.55	39.09
SPP South - Energy Price - 1H2023	4722	12/5/2035	12/5/2035	38.23	40.62	40.66	37.98	40.03	39.66	48.85	48.85	49.58	48.02	48.02	44.55	44.17	41.85	43.9	43.36	44.48	48.99	49.58	49.58	48.99	48.99	42.29	40.05
SPP South - Energy Price - 1H2023	4723	12/6/2035	12/6/2035	41.39	42.29	42.33	42.4	41.7	41.06	50.38	50.71	50.71	47.26	47.26	43.48	43.48	43.48	43.48	43.48	43.89	50.72	50.72	47.26	46.76	47.26	38.75	38.75
SPP South - Energy Price - 1H2023	4724	12/7/2035	12/7/2035	36.21	36.2	37.78	35.8	35.67	35.35	40.36	42.33	40.02	40.02	40.02	36.82	7.77	6.97	36.82	40.02	40.02	40.02	40.02	40.02	40.02	40.02	35.35	35.35
SPP South - Energy Price - 1H2023	4725	12/8/2035	12/8/2035	35.35	35.35	35.35	35.35	35.35	35.35	40.18	40.18	40.18	40.18	39.06	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	42.46	42.46	40.18	35.35	35.35
SPP South - Energy Price - 1H2023	4726	12/9/2035	12/9/2035	35.35	35.35	35.35	35.35	35.35	35.35	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	40.18	42.06	40.18	40.18	40.18	35.35	35.35
SPP South - Energy Price - 1H2023	4727	12/10/2035	12/10/2035	35.09	35.09	35.09	35.09	35.09	35.09	40.28	40.34	39.76	39.76	39.76	39.76	39.28	39.76	37.95	39.76	39.76	39.76	39.76	39.76	39.76	39.76	35.09	35.09
SPP South - Energy Price - 1H2023	4728	12/11/2035	12/11/2035	34.35	34.35	34.35	34.35	34.35	34.35	39	39.39	39	39	38.18	39	37.78	37.78	37.78	38.18	39	40.23	40.29	40.3	40.29	40.23	37.83	35.9
SPP South - Energy Price - 1H2023	4729	12/12/2035	12/12/2035	33.58	35.9	33.58	35.9	35.9	35.9	40.25	40.19	38.23	38.23	38.23	38.23	38.23	38.23	38.23	38.23	38.23	40.26	43.45	42.21	42.42	40.8	37.83	35.46
SPP South - Energy Price - 1H2023	4730	12/13/2035	12/13/2035	31.71	31.71	31.71	31.71	31.71	31.71	36.32	36.32	36.32	36.32	17.65	10	34.22	33.41	36.32	36.32	36.32	36.32	36.32	36.32	36.32	36.32	31.71	31.73

SPP South - Energy Price - 1H2023	4731	12/14/2035	12/14/2035	30.03	30.03	30.03	30.03	30.03	30.03	34.62	38.05	38.2	38.95	36.46	37.06	36.02	35.84	36.26	36.13	40.05	41.04	40.57	40.58	40.57	40.57	34.31	34.31
SPP South - Energy Price - 1H2023	4732	12/15/2035	12/15/2035	34.31	33.45	33.45	33.45	33.45	34.31	39	39	39	39	39	37.95	38.24	38.03	39	39	39	43.01	43.01	41.33	41.33	39.11	34.31	34.31
SPP South - Energy Price - 1H2023	4733	12/16/2035	12/16/2035	33.83	33.39	33.39	33.38	33.39	33.25	37.95	37.95	39	39	39	39	39	37.95	37.95	37.95	39	40.54	40.18	39	41.08	39	34.31	34.31
SPP South - Energy Price - 1H2023	4734	12/17/2035	12/17/2035	34.63	34.63	34.63	34.63	34.63	34.63	40.65	40.89	40.89	40.1	38.03	36.67	34.89	34.89	34.89	34.89	34.89	40.44	40.89	40.89	40.44	40.89	34.63	34.63
SPP South - Energy Price - 1H2023	4735	12/18/2035	12/18/2035	30.57	30.57	30.57	30.57	30.57	30.57	35.16	35.16	35.16	33.18	8.26	7.58	7.23	6.97	7.32	11.66	35.16	35.16	35.16	35.16	35.16	35.16	30.57	33.47
SPP South - Energy Price - 1H2023	4736	12/19/2035	12/19/2035	32.17	32.17	32.17	32.17	32.17	32.17	36.26	39.33	36.75	36.15	34.85	33.53	33.53	33.53	33.53	33.53	33.53	36.3	36.45	36.45	36.45	36.45	32.17	32.17
SPP South - Energy Price - 1H2023	4737	12/20/2035	12/20/2035	33.73	33.7	33.73	33.58	33.73	33.73	39.67	40.09	36.45	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	36.41	34.92	34.92	34.92	36.21	30.33	30.33
SPP South - Energy Price - 1H2023	4738	12/21/2035	12/21/2035	30.19	30.19	30.19	30.19	30.19	32.45	34.78	36.82	36.38	36.29	35.22	36.07	34.78	34.78	34.78	34.78	34.78	36.61	36.61	38.6	36.61	36.61	33.56	33.09
SPP South - Energy Price - 1H2023	4739	12/22/2035	12/22/2035	31.73	31.73	31.73	33.56	33.56	33.56	39.21	39.21	34.32	34.32	34.32	34.32	34.32	34.32	34.32	34.32	34.32	37.3	37.23	34.32	34.32	34.32	30.19	30.19
SPP South - Energy Price - 1H2023	4740	12/23/2035	12/23/2035	30.19	30.19	30.19	30.19	32.06	30.19	34.32	37.3	34.32	34.32	34.32	34.32	34.32	34.32	34.32	34.32	34.32	38.16	38.16	38.16	38.16	38.16	33.56	33.56
SPP South - Energy Price - 1H2023	4741	12/24/2035	12/24/2035	32.73	32.73	32.73	32.73	32.73	32.73	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	37.36	38.34	40.21	43.71	40.67	38.34	37.36	33.64	32.73
SPP South - Energy Price - 1H2023	4742	12/25/2035	12/25/2035	32.73	32.73	32.83	32.94	32.83	32.83	40.2	43.72	43.72	42.58	40.2	38.65	39.4	39.58	38.73	39.38	37.36	39.06	40.2	40.2	37.36	37.36	32.73	32.73
SPP South - Energy Price - 1H2023	4743	12/26/2035	12/26/2035	27.93	27.93	27.93	27.93	27.93	27.93	32.48	32.48	32.48	32.48	32.48	32.48	32.48	32.48	32.48	32.48	33.51	35.5	32.48	32.48	32.48	32.48	27.93	27.93
SPP South - Energy Price - 1H2023	4744	12/27/2035	12/27/2035	34.85	34.85	34.85	34.85	34.85	34.85	39.52	39.52	39.52	39.52	39.52	39.52	39.52	39.52	39.52	39.52	40.26	43.1	46.18	46.18	43.01	39.52	35.42	34.85
SPP South - Energy Price - 1H2023	4745	12/28/2035	12/28/2035	34.39	34.39	34.39	34.39	34.39	33.72	38.37	40.3	38.37	38.37	38.37	38.36	38.36	38.36	38.37	38.37	38.37	38.37	38.37	38.37	38.37	38.37	33.72	33.72
SPP South - Energy Price - 1H2023	4746	12/29/2035	12/29/2035	33.72	33.72	33.72	33.72	33.72	33.72	38.33	38.33	38.33	38.33	38.33	38.33	38.33	38.33	38.33	38.33	38.33	38.98	38.64	38.33	38.33	38.33	33.72	33.72
SPP South - Energy Price - 1H2023	4747	12/30/2035	12/30/2035	33.72	33.72	33.72	33.72	33.72	33.72	38.33	38.33	38.33	34.61	10.25	9.17	8.39	7.84	7.4	11.14	7.24	38.33	38.33	38.33	38.33	38.33	33.72	33.72
SPP South - Energy Price - 1H2023	4748	12/31/2035	12/31/2035	32.58	32.58	32.58	32.58	32.58	32.58	37.21	37.21	37.21	37.2	37.2	9.9	7.37	6.88	6.5	6.61	6.36	37.2	37.21	37.21	37.21	37.21	32.58	32.58
SPP South - Energy Price - 1H2023	4749	1/1/2036	1/1/2036	32.37	32.37	32.37	32.37	32.37	32.37	37.46	37.46	37.46	37.46	8.44	37.46	37.46	37.46	37.46	37.46	37.46	37.77	38.45	37.98	37.46	37.46	32.37	32.37
SPP South - Energy Price - 1H2023	4750	1/2/2036	1/2/2036	30.86	30.86	30.86	30.86	30.86	30.86	35.89	35.89	35.89	35.89	35.89	35.89	35.89	35.89	35.89	35.89	35.89	36.28	36.65	35.89	35.89	35.89	30.86	30.86
SPP South - Energy Price - 1H2023	4751	1/3/2036	1/3/2036	30.5	30.5	30.5	30.5	30.5	30.5	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	36.92	37.09	36.92	35.52	35.52	30.5	30.5
SPP South - Energy Price - 1H2023	4752	1/4/2036	1/4/2036	35.77	35.77	35.77	35.77	35.77	35.77	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	40.98	35.77	35.77
SPP South - Energy Price - 1H2023	4753	1/5/2036	1/5/2036	35.77	35.77	35.77	35.77	35.77	35.77	45.91	45.91	45.91	45.91	45.91	45.91	45.91	45.91	45.91	45.91	45.91	45.91	47.41	47.21	46.09	46.09	35.77	35.77
SPP South - Energy Price - 1H2023	4754	1/6/2036	1/6/2036	35.77	35.77	35.77	35.77	35.77	35.77	45.91	45.91	45.91	45.91	45.91	24.57	21.67	10.1	13.52	24.57	45.91	45.91	45.91	45.91	45.91	45.91	35.77	35.77
SPP South - Energy Price - 1H2023	4755	1/7/2036	1/7/2036	32.18	32.18	32.18	32.18	32.18	32.18	37.25	39.02	38.95	37.25	37.48	38.45	38.83	38.25	37.25	37.25	38.94	41.43	43.55	43.55	42.65	39.02	35.87	35.87
SPP South - Energy Price - 1H2023	4756	1/8/2036	1/8/2036	35.26	35.26	35.26	35.26	31.64	35.26	41.61	42.92	42.92	41.61	42.92	38.93	39.16	39.04	41.18	41.45	41.09	38.92	38.94	36.7	36.7	36.7	31.64	31.64
SPP South - Energy Price - 1H2023	4757	1/9/2036	1/9/2036	30.86	30.86	30.86	30.86	30.86	30.86	35.89	36.41	36.26	35.89	35.89	35.89	35.89	35.89	35.89	35.89	35.89	36.26	38.9	38.86	36.26	35.89	30.86	30.86
SPP South - Energy Price - 1H2023	4758	1/10/2036	1/10/2036	30.5	30.5	30.6	30.69	30.5	30.5	37.06	38.88	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	35.52	37.06	38.88	37.31	35.52	35.52	30.5	30.5
SPP South - Energy Price - 1H2023	4759	1/11/2036	1/11/2036	27.73	27.73	27.73	27.73	27.73	27.73	37.43	37.98	38.29	35.54	34.45	34.45	34.04	32.65	32.65	32.65	32.65	33.7	33.04	32.65	32.65	32.65	27.73	27.73
SPP South - Energy Price - 1H2023	4760	1/12/2036	1/12/2036	27.73	27.73	27.73	27.73	27.73	27.73	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	27.73	27.73
SPP South - Energy Price - 1H2023	4761	1/13/2036	1/13/2036	27.73	27.73	27.73	27.73	27.73	27.73	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	38.7	39.56	36.94	35.6	27.73	27.73
SPP South - Energy Price - 1H2023	4762	1/14/2036	1/14/2036	31.93	31.93	31.93	31.93	31.93	31.93	37	37	37	37	37	37	37	37	30.42	36.29	37	37	37	37	37	37	31.93	31.93
SPP South - Energy Price - 1H2023	4763	1/15/2036	1/15/2036	34.69	34.69	35.9	35.9	35.9	35.9	43.78	43.78	43.78	43.78	43.78	42.99	42.12	42.48	42.36	41.07	43.78	43.78	43.78	43.78	46.86	43.78	39.84	39.55
SPP South - Energy Price - 1H2023	4764	1/16/2036	1/16/2036	38.75	38.75	38.67	38.7	35.9	38.7	42.81	42.81	42.81	42.81	42.05	39.08	36.54	35.6	33.07	36.81	39.08	42.8	42.81	42.81	42.81	42.8	33.76	33.76
SPP South - Energy Price - 1H2023	4765	1/17/2036	1/17/2036	32.82	32.82	32.82	32.82	32.82	32.82	41.82	41.82	41.82	41.82	41.82	41.82	41.82	41.75	41.63	36.54	40.74	41.82	41.82	44.11	41.82	41.82	32.82	32.82
SPP South - Energy Price - 1H2023	4766	1/18/2036	1/18/2036	33.52	33.52	33.52	33.52	33.52	33.52	41.29	42.55	9.95	2.36	2.05	5.96	5.96	1.52	6.09	6.2	5.96	42.55	46.97	45.8	47.13	45.8	38.47	38.47
SPP South - Energy Price - 1H2023	4767	1/19/2036	1/19/2036	35.9	35.9	35.9	35.9	35.9	38.47	49.38	49.38	43.03	43.03	10.65	9.53	8.72	8.14	7.69	7.82	43.03	43.03	48.96	48.94	48.94	48.94	38.13	35.9
SPP South - Energy Price - 1H2023	4768	1/20/2036	1/20/2036	35.9	35.9	35.9	35.9	38.13	38.13	48.94	48.94	46.09	43.03	43.03	43.03	43.03	43.03	43.03	12.02	43.03	46.09	46.78	46.78	46.09	46.09	33.52	33.52
SPP South - Energy Price - 1H2023	4769	1/21/2036	1/21/2036	33.52	33.52	33.52	35.9	33.52	33.52	42.38	42.38	42.38	42.38	41.39	38.99	36.5	29.98	39.36	42.38	42.38	42.38	42.38	42.38	42.38	42.38	33.36	33.36
SPP South - Energy Price - 1H2023	4770	1/22/2036	1/22/2036	38.51	38.51	38.51	38.51	38.51	38.51	47.8	50.74	47.8	47.8	47.8	47.8	47.8	47.58	45.77	47.23	47.8	47.8	47.8	47.8	47.8	47.8	38.51	40.47
SPP South - Energy Price - 1H2023	4771	1/23/2036	1/23/2036	40.47	40.47	40.47	40.47	45.1	45.4	53.04	53.04	52.59	49.86	49.86	49.86	49.86	49.86	49.86	49.86	49.86	49.86	54.28	54.28	53.04	54.28	47.95	46.67
SPP South - Energy Price - 1H2023	4772	1/24/2036	1/24/2036	43.74	43.66	43.97	43.97	43.46	43.97	58.39	63.41	48.62	46.82	45.43	45.43	45.43	45.43	45.43	45.43	45.43	47.84	56.93	55.6	52.64	51.93	44.17	43.04
SPP South - Energy Price - 1H2023	4773	1/25/2036	1/25/2036	43.29	42.76	42.76	42.76	43.02	42.76	48.82	52.87	45.16	45.16	45.16	45.16	40.33	39.87	40.84	36.54	5.46	45.16	45.16	45.16	45.16	45.16	36	36
SPP South - Energy Price - 1H2023	4774	1/26/2036	1/26/2036	36	36	36	39.13	39.13	36	46.21	46.21	46.21	46.09	41.26	7.5	7.31	7.23	7.16	7.16	6.89	46.09	47.52	46.21	46.21	46.21	39.89	39.8
SPP South - Energy Price - 1H2023	4775	1/27/2036	1/27/2036	39.81	40.31	40.24	40.14	41.17	41.17	52.86	53.11	54.14	52.85	51.8	51.51	46.21	46.21	46.21	46.21	46.21	46.52	50.23	46.88	46.51	46.21	36	36
SPP South - Energy Price - 1H2023	4776	1/28/2036	1/28/2036	35.83	35.84	35.83	35.83	35.83	35.84	42.98	42.98	39.64	37.42	6.36	5.95	5.79	5.73	5.68	1.18	5.46	32.63	36.47	36.54	36.4	37.59	31.28	31.28
SPP South - Energy Price - 1H2023	4777	1/29/2036	1/29/2036	30.08	30.08	30.08	30.08	30.08	30.08	40.63	41.25	40.28	37.42	36.86	36.94	36.92	36.54	36.54	36.54	36.54	39.5	39.72	41.7	41.7	39.95	33.38	33.29
SPP South - Energy Price - 1H2023	4778	1/30/2036	1/30/2036	32.14	31.58	32.25	31.6	31.66	32.25	39.74	41.18	39.74	39.74	39.33	39.33	39.32	39.38	39.32	39.24	36.76	39.74	39.74	40.64	40.5	41.17	35.99	35.9
SPP South - Energy Price - 1H2023	4779	1/31/2036	1/31/2036	37.73	36.07	35.99	35.99	35.9	35.9	43.13	43.13	43.13	43.13	43.13	43.13	39.67	39.67	39.67	42.4	43.13	43.13	43.13	43.13	43.15	43.5	39.32	39.61
SPP South - Energy Price - 1H2023	4780	2/1/2036	2/1/2036	24.9	24.8	24.8	24.8	24.8	24.8	48.68	49.24	48.54	47.49	47.49	47.49	47.49	47.49	46.57	47.41	44.82	47.49	48.04	48.04	47.77	47.87	25.7	24.94
SPP South - Energy Price - 1H2023	4781	2/2/2036	2/2/2036	24.9	24.8	24.8	24.8	24.8	24.8	42.87	42.87	42.87	34.54	31.93	8.76	8.76	8.76	8.65	6.82	4.98	8.93	42.86	42.87	42.86	42.86	24.8	22.81
SPP South - Energy Price - 1H2023	4782	2/3/2036	2/3/2036	22.81	19.29	22.81	24.8	24.8	24.8	42.86	42.87	42.87	42.86	42.86	42.87	42.86	35.92	37.71	42.86	42.87	42.87	42.87	44.24	42.87	42.87	24.8	24.8
SPP South - Energy Price - 1H2023	4783	2/4/2036	2/4/2036	18.93	18.93	18.93	18.93	18.93	18.93	37.69	38.21	37.21	37.21	37.21	31.67	25.43	5.19	5.14	5.14	25.99	37.21	37.21	37.21	37.21	37.21	18.93	18.93
SPP South - Energy Price - 1H2023	4784	2/5/2036	2/5/2036	17.58	17.58	17.58	17.58	17.58	17.58	34.86	35.27	34.86	33.06	33.4	33.48	7.02	5.19	5.14	5.14	4.94	33.06	34.86	34.86	34.86	34.85	17.58	17.58
SPP South - Energy Price - 1H2023	4785	2/6/2036	2/6/2036	16.44	16.44	16.44	16.44	16.44	16.44	32.85	32.85	32.85	6.49	0.93	1.01	0.93	0.93	0.93	0	0.93	4.56	32.85	32.85	32.85	32.85	17.34	17.36
SPP South - Energy Price - 1H2023	4786	2/7/2036	2/7/2036	17.4	17.4	17.4	17.4	17.4	17.7	34.53	35.24	33.06	33.4	33.4	31.63	31.57	31.42	25.3	25.43	29.63	33.06	34.53	34.53	34.53	34.53	17.4	17.39
SPP South - Energy Price - 1H2023	4787	2/8/2036	2/8/2036	16.96	16.96	16.96	16.96	16.96	16.96	33.78	33.78	33.78	11.45	10.4	8.67	8.58	5.19	5.14	5.14	4.94	32.67	33.78	33.78	33.78	33.78	16.96	16.96
SPP South - Energy Price - 1H2023	4788	2/9/2036	2/9/2036	16.96	16.96	16.96	16.96	16.96	16.96	29.32	30.59	29.32	29.32	29.32	29.32	28.18	26.2	3.46	1.08	1.85	28.04	29.32	29.32	29.32	29.32	16.96	16.96
SPP South - Energy Price - 1H2023	4789	2/10/2036	2/10/2036	16.96	16.96	16.96	16.96	16.96	16.96	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	29.32	30.16	30.31	17.63	16.96
SPP South - Energy Price - 1H2023	4790	2/11/2036	2/11/2036	16.22	16.5	16.22	16.22	16.22	16.22	32.9	33.7	34.36	33.8	33.7	33.21	32.56	32.48	32.48	32.48	32.48	34.06	33.82	33.7	33.5	32.9	16.22	16.22
SPP South - Energy Price - 1H2023	4791	2/12/2036	2/12/2036	15.9	15.9	15.9	15.9	15.9	15.9	31.91	32.54	31.91	31.91	31.91	5.38	1.98	27.79	0.94	23.55	27.79	31.91	31.91	31.91	31.91	31.91	15.9	15.9
SPP South - Energy Price - 1H2023	4792	2/13/2036	2/13/2036	16.6	16.6	16.6	16.6	16.6	16.6	33.14	33.14	28.36	22.78	29.13	22.6	22.57	5.19	22.03	5.14	4.94	33.14	33.14	33.14	33.14	33.14	16.6	16.6
SPP South - Energy Price - 1H2023	4793	2/14/2036	2/14/2036	16.38	16.38	16.38	16.38	16.38	16.38	32.76	32.76	27.99	29.89	27.99	1.01	23.13	0.98	27.99	29.72	28.77	32.76	32.76	33.19	33.3	33.34	17.29	17.23
SPP South - Energy Price - 1H2023	4794	2/15/2036	2/15/2036	16.56	16.31	15.86	16.59	16.59	16.59	33.28	33.4	31.85	31.85	28	5.24	5.24	0.98	5.14	5.14	5.24	30.18	31.85	31.85	31.85	31.85	15.86	15.86
SPP South - Energy Price - 1H2023	4795	2/16/2036	2/16/2036	15.86	15.86	15.86	15.86	15.86	15.86	27.42	28.69	27.42	27.42	27.42	27.42	27.42	5.23	27.42	27.42	27.42	27.42	27.64	27.84	28.26	28.2	16.35	15.86
SPP South - Energy Price - 1H2023	4796	2/17/2036	2/17/2036	15.86	15.86	15.86	15.86	15.86	15.86	27.42	28.26	27.42	27.42	27.42	27.42	5.58	3.36	5.18	5.18	4.98	27.42	27.42	27.42	27.42	27.42	15.86	15.86
SPP South - Energy Price - 1H2023	4797	2/18/2036	2/18/2036	18.45	18.45	18.45	18.45	18.45	19.29	38.9	41.72	37.61	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	38.35	41.72	41.72	38.9	38.01	19.35	18.66
SPP South - Energy Price - 1H2023	4798	2/19/2036	2/19/2036	19.29	19.29	19.29	19.29	19.29	19.29	37.05	41.14	36.87	35.5	33.06	31.53	31.53	31.53	27.04	18.99	31.53	31.53	36.38	36.87	36.38	36.87	18.16	18.16
SPP South - Energy Price - 1H2023	4799	2/20/2036	2/20/2036	19.93	19.93	19.93	19.93	19.93	19.93	40.48	40.32	39.98	36.38	26.06	25.09	4.11	4.04	0.97	0.94	6.04	29.52	39.33	39.43	39.33	39.22	19.93	19.66
SPP South - Energy Price - 1H2023	4800	2/21/2036	2/21/2036	18.96	18.96	18.96	18.96	18.96	18.96	38.29	38.29	38.29	35.22	35.22	38.29	33.06	35.22	38.29	35.22	35.22	38.29	38.29	38.29	38.64	38.82	20.04	19.29
SPP South - Energy Price - 1H2023	4801	2/22/2036	2/22/2036	19.29	19.29	19.29	19.29	19.29	19.29	38.48	40.86	38.71	38.19	37.8	38	36.62	36.62	36.62	36.62	36.62	36.62	38.21	37.63	36.62	36.62	18.01	18.01
SPP South - Energy Price - 1H2023	4802	2/23/2036	2/23/2036	18.01	18.01	18.01	18.01	18.01	18.01	31.14	31.14	6.19	0.85	0.89	0.82	0.94	0.86	0.92	0.95	0.92	5.87	31.14	31.14	31.14	31.14	18.01	18.01
SPP South - Energy Price - 1H2023	4803	2/24/2036	2/24/2036	18.01	18.01	18.01	18.01	18.01	18.01	31.14	31.14	29.14	0.85	0.89	0.82	0.92	0.86	0.98	0.95	0.92	5.87	5.63	12.55	11.55	11.76	7.14	6.68
SPP South - Energy Price - 1H2023	4804	2/25/2036	2/25/2036	13.64	13.64	14.02	13.16	13.64	16.67	25.27	23.38	0.9	0.84	0.88	3.65	3.65	4.94	4.54	4.98	6.04	33.06	34.26	34.26	34.25	34.26	16.67	16.67
SPP South - Energy Price - 1H2023	4805	2/26/2036	2/26/2036	17.47	17.36	17.33	17.36	17.47	17.36	32.86	33.06	30.46	5.95	0.88	0.82	0.93	0.85	0.97	0.94	0.91	5.82	34.52	35.66	35.66	35.66	17.47	17.47
SPP South - Energy Price - 1H2023	4806	2/27/2036	2/27/2036	16.28	16.28	16.28	16.28	16.28	16.75	34.15	35.02	33.57	33.06	33.06	33.57	33.57	33.06	31.96	33.57	33.57	33.57	34.75	35.13	33.94	34.74	18.13	17.91
SPP South - Energy Price - 1H2023	4807	2/28/2036	2/28/2036	18.65	18.65	16.74	18.65	18.65	18.65	35.2	35.17	35.74	34.74	34.38	34.38	34.38	33.06	34.38	6.16	6.04	31.9	34.38	34.74	35.17	35.18	18.65	18.65
SPP South - Energy Price - 1H2023	4808	2/29/2036	2/29/2036	18.7	18.65	18.65	18.7	18.7	18.7	35.21	35.21	34.45	34.45	34.45	32.15	31.7	28.16	5.93	6.16	28.35	34.39	34.45	34.45	34.45	34.45	16.78	16.78
SPP South - Energy Price - 1H2023	4809	3/1/2036	3/1/2036	15.65	15.65	15.65	15.65	15.65	15.65	22.54	22.54	0.7	0.66	0.69	0.64	0.73	20.84	20.48	22.54	22.54	22.54	25.11	25.11	25.11	24.5	15.65	15.65
SPP South - Energy Price - 1H2023	4810	3/2/2036	3/2/2036	15.65	15.65	15.65	15.65	15.65	15.65	24.5	22.54	22.54	22.54	22.54	22.54	22.54	5.2	4.66	22.18	22.54	22.54	24.5	24.5	22.54	22.54	15.65	15.65
SPP South - Energy Price - 1H2023	4811	3/3/2036	3/3/2036	18.75	18.75	18.73	18.75	18.75	18.75	28.01	28.01	28.01	22.73	21.05	20.53	6.17	20.53	20.53	20.53	20.53	16.8	23.03	23.03	23.03	23.03	18.71	18.03
SPP South - Energy Price - 1H2023	4812	3/4/2036	3/4/2036	17.17	17.17	17.17	17.17	17.17	17.46	26.3	25.95	25.95	25.69	25.95	25.67	25.95	25.69	25.95	25.95	25.95	25.95	26.18	26.61	26.2	25.95	17.78	18.03
SPP South - Energy Price - 1H2023	4813	3/5/2036	3/5/2036	20.3	20.3	20.3	20.3	20.3	20.3	30.05	30.05	30.05	27.64	30.05	30.05	30.05	30.05	30.05	30.05	30.05	30.05	30.67	30.85	30.28	30.36	20.3	20.3

SPP South - Energy Price - 1H2023	4814	3/6/2036	3/6/2036	18.27	18.27	18.27	18.27	19.64	19.67	28.2	27.99	27.55	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	27.39	18.27	18.27
SPP South - Energy Price - 1H2023	4815	3/7/2036	3/7/2036	16.37	16.37	16.37	16.37	16.37	16.37	24.89	24.89	24.89	24.89	24.89	25.09	24.89	24.89	24.89	24.89	24.89	24.89	24.89	24.89	24.89	24.89	16.37	16.37
SPP South - Energy Price - 1H2023	4816	3/8/2036	3/8/2036	16.37	16.12	16.37	16.37	10.49	10.49	16.42	16.42	4.82	4.68	0.69	0.64	0.73	0.67	0.76	0.74	0.74	4.57	23.58	23.58	23.58	23.58	16.37	16.37
SPP South - Energy Price - 1H2023	4817	3/9/2036	3/9/2036	16.37	16.37	16.37	16.37	16.37	16.37	23.87	23.87	23.98	23.87	23.87	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	16.37	16.37
SPP South - Energy Price - 1H2023	4818	3/10/2036	3/10/2036	15.24	15.24	15.24	15.24	15.24	15.24	22.3	22.3	22.3	22.3	22.3	22.29	22.29	22.3	22.3	22.3	22.29	22.29	22.29	22.29	22.29	21.04	4.34	3.88
SPP South - Energy Price - 1H2023	4819	3/11/2036	3/11/2036	4.09	4.13	5.04	5.04	5.04	15.51	22.64	20.68	7	7	4.13	4.13	3.84	4.03	4.13	4.29	4.21	4.05	21.94	22.64	22.64	22.64	15.51	15.51
SPP South - Energy Price - 1H2023	4820	3/12/2036	3/12/2036	15.93	15.93	15.93	15.93	15.93	15.93	23.19	23.19	23.03	4.15	3.74	0.57	0.65	0.68	0.68	0.66	4.21	4.05	23.19	23.19	23.19	23.19	15.93	15.93
SPP South - Energy Price - 1H2023	4821	3/13/2036	3/13/2036	16.75	16.75	16.75	16.75	16.75	17.13	25.95	25.95	26.62	26.48	25.85	25.85	24.61	24.65	24.6	24.6	24.59	24.26	24.61	24.61	24.26	24.26	16.75	16.75
SPP South - Energy Price - 1H2023	4822	3/14/2036	3/14/2036	15.56	15.55	15.55	15.55	15.56	15.55	22.7	20.32	0.62	0.59	0.62	0.57	0	0.59	15.17	15.16	21.95	22.7	22.7	22.7	22.7	22.7	15.56	15.56
SPP South - Energy Price - 1H2023	4823	3/15/2036	3/15/2036	15.56	15.56	15.56	15.56	15.56	15.56	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	21.38	3.48	22.41	22.41	22.41	22.41	22.41	15.56	15.56
SPP South - Energy Price - 1H2023	4824	3/16/2036	3/16/2036	15.56	15.56	15.56	15.56	15.56	15.56	22.92	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	4.84	7.01	22.41	22.41	22.41	22.41	22.41	15.56	15.56
SPP South - Energy Price - 1H2023	4825	3/17/2036	3/17/2036	16.64	16.78	16.64	16.64	16.64	17.07	25.85	24.6	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.6	24.6	24.6	24.6	24.6	16.64	16.64
SPP South - Energy Price - 1H2023	4826	3/18/2036	3/18/2036	16.41	16.41	16.41	16.41	16.41	16.41	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	23.81	24.19	23.81	23.81	17	17
SPP South - Energy Price - 1H2023	4827	3/19/2036	3/19/2036	17	17	17	16.53	16.53	16.53	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.03	23.03	23.03	23.24	23.96	23.96	23.96	23.96	23.96	16.53	16.53
SPP South - Energy Price - 1H2023	4828	3/20/2036	3/20/2036	17.57	17.57	17.57	17.57	17.57	17.57	25.36	25.36	25.36	25.36	25.36	23.33	23.31	23.33	23.42	23.03	23.33	25.36	25.36	25.36	25.36	25.36	17.57	17.57
SPP South - Energy Price - 1H2023	4829	3/21/2036	3/21/2036	17.07	17.07	17.07	17.07	17.07	17.07	24.71	24.33	5.49	8.21	8.21	4.89	4.84	8.21	8.21	24.71	24.71	24.71	24.71	24.71	24.71	24.71	17.07	17.07
SPP South - Energy Price - 1H2023	4830	3/22/2036	3/22/2036	17.07	17.07	17.07	17.07	17.07	17.07	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	24.59	25.97	25.97	24.59	24.59	17.07	17.07
SPP South - Energy Price - 1H2023	4831	3/23/2036	3/23/2036	17.07	17.07	17.07	17.07	17.07	17.07	24.59	24.59	24.59	6.04	0.98	0.77	0.77	0.75	0.77	0.75	0.77	0.8	24.59	6.76	7.8	7.73	5.22	4.66
SPP South - Energy Price - 1H2023	4832	3/24/2036	3/24/2036	5.32	5.1	4.66	4.69	4.84	16.2	22.25	5.78	0.86	0.77	0.87	5.37	19.42	22.67	22.67	20.86	25.02	25.19	25.19	25.19	25.19	25.19	17.44	17.44
SPP South - Energy Price - 1H2023	4833	3/25/2036	3/25/2036	16.83	16.83	16.83	16.83	16.83	16.83	24.4	24.4	24.4	24.4	23.03	0.85	0.69	8.41	5.66	6.06	23.08	24.4	24.4	24.4	24.4	24.4	16.83	16.83
SPP South - Energy Price - 1H2023	4834	3/26/2036	3/26/2036	16.22	16.22	16.22	16.22	16.22	16.22	23.6	23.6	21.78	15.01	16.32	5.37	5.58	5.67	8.41	15.01	22.47	22.47	23.6	23.03	23.03	23.03	16.22	16.22
SPP South - Energy Price - 1H2023	4835	3/27/2036	3/27/2036	15.31	15.31	15.31	15.31	15.31	15.31	22.43	22.43	22.43	22.43	22.43	22.21	22.43	22.43	20.63	6.06	22.43	22.43	22.43	22.43	22.43	22.43	14.38	14.33
SPP South - Energy Price - 1H2023	4836	3/28/2036	3/28/2036	14.33	14.33	14.33	14.33	14.33	14.33	21.14	21.14	21.14	21.14	21.14	21.14	18.89	8.39	21.14	21.14	19.45	21.14	21.14	21.14	21.14	21.14	14.33	14.33
SPP South - Energy Price - 1H2023	4837	3/29/2036	3/29/2036	14.33	14.33	14.33	14.33	14.33	14.33	20.64	20.64	20.64	20.64	20.64	8.99	8.13	6.39	6.39	3.84	7.06	20.64	20.64	20.64	20.64	20.64	14.33	14.33
SPP South - Energy Price - 1H2023	4838	3/30/2036	3/30/2036	14.33	14.33	14.33	14.33	14.33	14.33	20.64	20.64	8.42	11.38	11.38	7.54	11.38	11.61	10.2	11.38	20.64	20.64	20.67	20.9	20.64	20.64	14.33	14.33
SPP South - Energy Price - 1H2023	4839	3/31/2036	3/31/2036	14.76	14.76	14.76	14.76	14.76	14.76	21.71	21.71	21.71	21.71	21.71	19.97	21.71	19.97	21.71	17.52	19.97	21.71	21.71	21.71	21.71	21.71	14.76	14.76
SPP South - Energy Price - 1H2023	4840	4/1/2036	4/1/2036	11.84	10.89	6.7	11.84	10.89	11.84	9.61	3.43	2.32	2.24	2.22	2.24	2.33	3.52	3.35	3.33	9.52	10.02	10.11	10.02	10.24	10.02	11.84	11.84
SPP South - Energy Price - 1H2023	4841	4/2/2036	4/2/2036	12.01	12.01	12.01	12.01	12.01	12.01	10.15	10.15	8.84	7.59	9.61	8.84	9.33	8.28	9.23	10.15	9.22	9.7	10.15	10.15	10.15	10.15	12.01	12.01
SPP South - Energy Price - 1H2023	4842	4/3/2036	4/3/2036	12.3	12.3	12.3	12.3	12.3	12.3	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	12.3	12.3
SPP South - Energy Price - 1H2023	4843	4/4/2036	4/4/2036	11.44	11.44	11.44	11.44	11.44	11.83	10.02	9.72	2.32	1.12	0.36	0.36	0.36	0.28	0.3	0.4	0.28	2.51	3.84	9.72	9.72	9.72	11.44	11.44
SPP South - Energy Price - 1H2023	4844	4/5/2036	4/5/2036	5.01	5.01	4.61	4.61	5.01	5.01	7.42	4.86	0.72	0	0	0	0	0	0	0	0.57	5.06	7.5	16.95	16.95	16.95	11.44	11.44
SPP South - Energy Price - 1H2023	4845	4/6/2036	4/6/2036	11.44	11.44	11.44	11.44	11.44	11.44	16.95	16.95	8.07	4.5	7.13	7.13	4.69	7.13	4.76	7.13	16.95	16.95	18.56	18	17.56	16.95	11.44	11.44
SPP South - Energy Price - 1H2023	4846	4/7/2036	4/7/2036	11.18	11.18	11.18	11.18	11.18	11.18	9.53	9.53	9.53	9.53	4.89	5.05	2.33	2.37	2.36	3.12	3.14	9.53	9.53	9.53	9.53	9.53	11.18	11.18
SPP South - Energy Price - 1H2023	4847	4/8/2036	4/8/2036	11.59	11.59	11.59	11.59	11.59	11.59	9.84	9.84	9.84	8.57	2.61	2.46	2.33	2.37	2.36	2.61	2.61	9.61	9.84	10.05	9.84	9.84	11.59	11.59
SPP South - Energy Price - 1H2023	4848	4/9/2036	4/9/2036	11.93	11.93	11.93	11.93	11.93	11.93	10.09	3.74	2.32	2.24	0.36	2.32	0.29	2.32	2.36	3.45	4.78	10.09	10.09	10.09	10.09	10.09	11.93	11.93
SPP South - Energy Price - 1H2023	4849	4/10/2036	4/10/2036	11.72	11.72	11.72	11.72	11.72	11.72	9.61	4.3	2.33	2.24	2.22	2.24	2.33	2.37	2.33	2.53	2.61	2.51	6.48	9.91	9.61	9.91	11.72	11.72
SPP South - Energy Price - 1H2023	4850	4/11/2036	4/11/2036	11.64	11.64	11.64	11.64	12.02	12.75	10.86	9.85	9.85	9.85	9.85	9.85	9.85	9.85	9.85	9.85	9.85	9.85	9.85	10.08	10.11	9.94	12.18	12.19
SPP South - Energy Price - 1H2023	4851	4/12/2036	4/12/2036	12.06	11.64	11.64	11.64	11.64	11.96	18.28	17.25	17.25	17.25	17.25	17.25	17.25	12.34	17.09	17.25	17.25	17.25	17.25	17.25	17.25	17.25	11.64	11.64
SPP South - Energy Price - 1H2023	4852	4/13/2036	4/13/2036	11.64	11.64	11.64	11.64	11.64	11.64	17.25	17.25	17.25	17.09	17.09	17.25	17.25	17.25	17.25	17.25	17.25	17.76	17.31	17.25	17.25	17.25	11.64	11.64
SPP South - Energy Price - 1H2023	4853	4/14/2036	4/14/2036	11.54	11.54	11.54	11.54	11.54	11.54	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.78	9.86	10.14	10.15	10.01	12.04	11.54
SPP South - Energy Price - 1H2023	4854	4/15/2036	4/15/2036	12.77	11.69	12.77	12.77	12.77	12.77	10.29	9.89	9.89	9.89	9.89	9.89	9.89	9.61	9.89	9.89	9.89	9.89	10.22	10.23	10.23	10.22	12.22	12.19
SPP South - Energy Price - 1H2023	4855	4/16/2036	4/16/2036	11.77	12.18	12.22	12.22	12.9	12.9	10.32	10.25	9.95	9.95	9.95	9.95	9.61	9.18	9.15	9.95	9.15	9.95	9.95	9.95	9.95	9.95	11.77	11.77
SPP South - Energy Price - 1H2023	4856	4/17/2036	4/17/2036	11.67	11.67	11.67	11.67	11.67	11.67	9.87	9.86	9.61	9.61	8.62	8.62	8.62	4.71	4.89	8.62	8.62	9.61	9.61	9.87	9.87	9.87	11.67	11.67
SPP South - Energy Price - 1H2023	4857	4/18/2036	4/18/2036	11.37	11.37	11.37	11.37	11.37	11.37	9.65	9.65	9.65	9.65	9.61	9.65	8.84	8.84	7.03	9.35	9.17	8.84	9.61	9.61	9.61	9.21	3.78	3.37
SPP South - Energy Price - 1H2023	4858	4/19/2036	4/19/2036	3.85	3.71	3.38	3.4	3.51	3.4	5.11	4.86	4.68	4.5	4.47	4.51	4.69	4.69	4.76	5.09	5.26	5.26	4.84	16.84	16.84	16.84	11.37	11.37
SPP South - Energy Price - 1H2023	4859	4/20/2036	4/20/2036	11.37	11.37	11.37	11.37	11.37	11.37	16.84	5.99	4.68	4.5	4.47	4.51	4.76	4.76	5.53	5.09	16.84	16.84	16.84	17.16	17.47	17.4	11.37	11.37
SPP South - Energy Price - 1H2023	4860	4/21/2036	4/21/2036	11.06	11.06	11.06	11.06	11.06	11.06	9.42	7.7	3.22	1.19	1.34	1.57	8.22	9.42	9.42	9.42	9.42	9.42	9.42	9.92	9.42	9.42	11.06	11.06
SPP South - Energy Price - 1H2023	4861	4/22/2036	4/22/2036	11.28	11.28	11.28	11.28	11.28	11.28	9.58	9.58	9.58	9.58	9.58	10.2	10.14	10.93	10.93	10.93	10.93	10.93	10.93	10.93	10.93	10.93	12.35	12.35
SPP South - Energy Price - 1H2023	4862	4/23/2036	4/23/2036	11.4	11.33	11.1	11.07	11.22	11.4	9.4	9.64	9.51	9.54	9.4	9.4	9.77	9.75	9.49	10.2	10.2	10.2	10.21	10.21	9.87	9.7	11.03	11.03
SPP South - Energy Price - 1H2023	4863	4/24/2036	4/24/2036	10.98	11.05	11.04	11.01	11.17	11.47	9.71	9.36	9.36	9.36	8.92	9.36	9.36	9.36	9.16	2.74	2.73	9.36	9.36	9.36	9.36	9.36	10.98	10.98
SPP South - Energy Price - 1H2023	4864	4/25/2036	4/25/2036	10.88	10.88	10.88	10.88	11.06	10.88	9.28	8.25	1.24	1.19	1.34	1.57	1.78	1.78	1.78	3.7	9.28	9.28	9.28	9.28	9.28	9.28	10.88	10.88
SPP South - Energy Price - 1H2023	4865	4/26/2036	4/26/2036	10.88	10.88	10.88	10.88	10.88	11.01	16.12	16.12	6.01	6.01	4.74	5.48	3.58	6.14	6.01	8.99	9.49	16.12	16.12	16.12	16.12	16.12	10.88	10.88
SPP South - Energy Price - 1H2023	4866	4/27/2036	4/27/2036	10.88	10.88	10.88	10.88	10.88	10.88	16.12	4.18	2.5	2.39	4.18	3.15	4.18	4.31	5.36	16.12	16.12	16.12	16.12	16.12	16.12	16.42	11.13	10.88
SPP South - Energy Price - 1H2023	4867	4/28/2036	4/28/2036	11.25	11.25	11.25	11.31	11.46	11.57	9.84	9.56	2.44	2.65	2.44	2.44	1.78	2.14	2.44	2.44	2.73	6.65	9.56	9.56	9.58	9.56	11.25	11.25
SPP South - Energy Price - 1H2023	4868	4/29/2036	4/29/2036	11.52	11.63	11.58	11.75	11.9	12.01	9.77	9.77	9.77	9.77	9.61	9.59	9.77	9.77	9.61	8.98	9.61	9.77	9.77	9.77	9.78	9.77	11.52	11.52
SPP South - Energy Price - 1H2023	4869	4/30/2036	4/30/2036	11.49	11.49	11.49	11.49	11.49	11.55	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.3	9.74	9.74	9.84	9.76	9.74	11.49	11.49
SPP South - Energy Price - 1H2023	4870	5/1/2036	5/1/2036	11.4	11.4	11.4	11.4	11.4	11.72	10.86	4.34	2.6	2.6	1.63	1.9	2.16	2.6	2.96	3.32	3.31	8.62	10.86	10.86	10.86	10.86	11.4	11.4
SPP South - Energy Price - 1H2023	4871	5/2/2036	5/2/2036	10.79	10.79	10.81	10.79	10.79	11.06	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.37	10.6	10.98	10.79
SPP South - Energy Price - 1H2023	4872	5/3/2036	5/3/2036	10.79	10.81	10.79	10.79	10.79	11.06	12.65	12.62	12.45	12.4	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.3	12.38	10.79	10.79
SPP South - Energy Price - 1H2023	4873	5/4/2036	5/4/2036	10.79	10.81	10.79	10.79	10.94	11.06	12.65	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	10.79	10.79
SPP South - Energy Price - 1H2023	4874	5/5/2036	5/5/2036	10.51	10.51	10.51	10.51	10.65	10.51	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.18	10.51	10.51
SPP South - Energy Price - 1H2023	4875	5/6/2036	5/6/2036	10.84	10.84	10.84	10.84	10.84	10.84	10.39	10.39	10.39	10.39	9.1	9.1	3.99	10.39	10.39	10.39	10.39	10.39	10.39	10.39	10.57	10.39	10.84	10.84
SPP South - Energy Price - 1H2023	4876	5/7/2036	5/7/2036	11.42	11.42	11.42	11.42	11.42	11.42	10.88	10.88	10.88	10.88	10.9	10.9	10.88	10.88	10.88	10.9	10.88	10.88	10.88	11.45	11.1	11.25	11.69	11.42
SPP South - Energy Price - 1H2023	4877	5/8/2036	5/8/2036	11.61	11.69	11.67	11.61	11.61	11.94	11.03	11.03	11.03	11.03	11.03	11.03	11.85	11.03	11.85	11.89	11.03	11.92	11.89	12.24	12.59	11.85	11.9	11.61
SPP South - Energy Price - 1H2023	4878	5/9/2036	5/9/2036	11.58	11.66	11.66	11.63	11.79	11.91	11.34	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.02	11.01	11.02	12.25	12.03	11.29	12.66	12.66
SPP South - Energy Price - 1H2023	4879	5/10/2036	5/10/2036	11.58	11.66	11.58	11.58	11.79	11.58	13.18	13.33	14.23	14.32	14.32	13.68	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.42	14.32	13.18	11.58	11.58
SPP South - Energy Price - 1H2023	4880	5/11/2036	5/11/2036	11.58	11.58	11.58	11.58	11.58	11.58	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	13.18	11.58	11.58
SPP South - Energy Price - 1H2023	4881	5/12/2036	5/12/2036	11.67	11.67	11.67	11.67	11.67	12.19	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.5	11.09	11.67	11.67
SPP South - Energy Price - 1H2023	4882	5/13/2036	5/13/2036	11.86	11.86	11.86	11.86	11.86	11.86	11.24	11.03	11.03	10.15	10.15	10.65	10.15	11.03	10.15	10.15	10.15	11.24	11.24	11.24	11.24	11.24	11.86	11.86
SPP South - Energy Price - 1H2023	4883	5/14/2036	5/14/2036	10.95	10.95	10.95	10.95	11.9	11.9	9.84	1.9	1.51	1.44	1.63	1.9	2.16	2.6	2.96	3.32	3.31	9.4	11.28	11.28	11.28	11.28	11.9	11.9
SPP South - Energy Price - 1H2023	4884	5/15/2036	5/15/2036	12.04	11.9	12.04	12.04	12.04	12.04	11.39	2.16	1.98	1.99	1.63	2.16	2.16	9.88	9.76	9.09	9.09	11.39	11.39	11.39	11.41	11.39	12.04	12.04
SPP South - Energy Price - 1H2023	4885	5/16/2036	5/16/2036	11.99	11.99	11.99	11.99	11.99	11.99	11.35	11.35	11.35	11.35	11.35	11.35	11.35	10.91	11.35	10.45	11.35	11.35	11.35	11.35	11.35	11.35	11.99	11.99
SPP South - Energy Price - 1H2023	4886	5/17/2036	5/17/2036	7.18	4.79	4.77	5.19	4.77	5.19	4.12	2.43	4.11	2.01	4.12	5.4	13.65	13.65	13.65	13.65	14.19	13.88	14.19	14.19	13.65	13.65	11.99	11.99
SPP South - Energy Price - 1H2023	4887	5/18/2036	5/18/2036	11.99	11.99	11.99	11.99	11.99	11.99	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.22	13.65	13.65	13.65	13.65	13.99	11.99	11.99
SPP South - Energy Price - 1H2023	4888	5/19/2036	5/19/2036	12.35	12.35	12.35	12.35	12.35	12.35	10.19	4.74	4.69	9.38	11.65	11.65	11.65	11.65	11.65	11.65	11.65	11.65	11.65	11.65	11.89	11.65	12.35	12.35
SPP South - Energy Price - 1H2023	4889	5/20/2036	5/20/2036	12.42	12.42	12.42	12.42	12.42	12.42	11.71	11.71	11.71	11.71	11.71	11.71	11.84	11.71	11.71	11.71	11.71	11.88	12.06	12.41	12.43	12.58	12.8	12.42
SPP South - Energy Price - 1H2023	4890	5/21/2036	5/21/2036	12.32	12.46	12.46	12.42	12.59	12.71	11.79	11.62	11.62	11.62	11.87	11.62	11.62	11.62	11.62	11.62	11.62	11.62	11.62	11.62	11.62	11.62	12.32	12.32
SPP South - Energy Price - 1H2023	4891	5/22/2036	5/22/2036	12.19	12.19	12.19	12.19	12.19	12.19	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	12.19	12.23
SPP South - Energy Price - 1H2023	4892	5/23/2036	5/23/2036	11.78	11.78	11.78	11.77	11.78	11.78	11.17	11.17	11.17	10.39	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.78	11.78
SPP South - Energy Price - 1H2023	4893	5/24/2036	5/24/2036	11.78	11.78	11.78	11.78	11.87	11.78	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	14.38	13.4	13.4	13.4	11.85	11.78
SPP South - Energy Price - 1H2023	4894	5/25/2036	5/25/2036	11.78	11.78	11.78	11.79	11.88	11.95	13.46	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	14.38	13.57	14.36	13.4	11.78	11.78
SPP South - Energy Price - 1H2023	4895	5/26/2036	5/26/2036	11.78	11.78	11.78	11.78	11.78	11.78	11.17	10.76	10.28	11.17	11.17	10.28	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.78	11.78
SPP South - Energy Price - 1H2023	4896	5/27/2036	5/27/2036	12.14	12.14	12.14	12.18	12.25	12.25	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.47	11.58	11.47	11.58	12.26	12.39	13.09	12.32	13.29	13.29

SPP South - Energy Price - 1H2023	4897	5/28/2036	5/28/2036	12.6	12.6	12.43	12.48	12.55	12.6	11.71	11.71	11.71	11.7	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	12.42	12.42
SPP South - Energy Price - 1H2023	4898	5/29/2036	5/29/2036	12.5	12.5	12.5	12.5	12.5	12.51	11.78	11.66	10.73	11.56	11.66	11.66	11.66	10.28	11.78	11.78	11.78	11.78	11.78	11.78	11.78	11.78	12.5	12.5
SPP South - Energy Price - 1H2023	4899	5/30/2036	5/30/2036	12.73	12.73	12.73	12.73	12.73	12.73	11.66	11.66	11.66	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	12.73	12.73
SPP South - Energy Price - 1H2023	4900	5/31/2036	5/31/2036	12.73	12.73	12.73	12.73	12.73	12.73	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	14.49	12.73	12.73
SPP South - Energy Price - 1H2023	4901	6/1/2036	6/1/2036	24.93	24.93	24.98	25.05	25.16	25.28	24.98	24.98	22.98	22.98	9.95	22.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.93	25.07
SPP South - Energy Price - 1H2023	4902	6/2/2036	6/2/2036	21.81	21.56	21.56	21.56	21.81	21.81	21.64	21.65	22.21	22.89	21.86	22.05	21.55	21.55	21.55	21.55	21.55	21.55	22.52	22.52	22.52	22.59	21.56	22.09
SPP South - Energy Price - 1H2023	4903	6/3/2036	6/3/2036	21.54	21.65	21.59	21.19	21.87	21.54	22.6	22.74	23.04	21.52	21.26	21.59	21.23	24.26	24.53	24.53	24.26	24.26	24.26	25.07	25.01	24.26	23.44	21.19
SPP South - Energy Price - 1H2023	4904	6/4/2036	6/4/2036	21.51	21.51	21.55	21.65	21.89	22.06	22.55	23.72	24.58	24.58	24.85	24.85	24.58	24.85	26	25.35	24.85	24.85	24.85	24.85	24.85	24.85	23.91	23.17
SPP South - Energy Price - 1H2023	4905	6/5/2036	6/5/2036	22.86	22.86	22.86	22.86	22.86	22.86	21.09	22.17	22.08	22.3	24.01	24.01	24.27	24.27	24.63	25.82	24.69	24.53	24.83	25.06	24.27	24.01	20.93	20.93
SPP South - Energy Price - 1H2023	4906	6/6/2036	6/6/2036	20.62	20.62	20.17	20.24	20.62	20.96	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.93	21.48	20.96	21.02	20.23
SPP South - Energy Price - 1H2023	4907	6/7/2036	6/7/2036	19.89	19.89	19.89	19.89	19.89	19.89	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.89	19.89
SPP South - Energy Price - 1H2023	4908	6/8/2036	6/8/2036	19.89	19.89	19.89	19.89	19.89	19.89	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	20.54	19.92	19.89	19.89
SPP South - Energy Price - 1H2023	4909	6/9/2036	6/9/2036	21.78	21.78	21.78	21.78	21.78	21.78	21.27	17.13	17.13	17.13	18.61	9.9	15.16	17.13	21.74	20	21.74	21.74	21.74	21.74	21.74	21.74	21.78	21.78
SPP South - Energy Price - 1H2023	4910	6/10/2036	6/10/2036	23.57	21.87	23.57	5.74	23.51	23.57	7.85	5.1	1.65	4.93	21.47	23.31	23.31	23.22	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.31	23.58	23.58
SPP South - Energy Price - 1H2023	4911	6/11/2036	6/11/2036	24.15	24.15	24.15	24.15	24.15	24.15	23.69	23.69	21.79	23.81	21.9	23.69	23.81	23.81	23.81	23.81	23.69	23.81	23.81	23.81	23.81	23.81	26.45	24.15
SPP South - Energy Price - 1H2023	4912	6/12/2036	6/12/2036	23.65	23.65	23.65	23.65	23.65	23.65	23.37	23.37	21.52	23.37	23.37	23.37	23.37	23.37	23.37	23.37	23.37	23.37	23.37	23.37	24.76	24.62	24.04	23.97
SPP South - Energy Price - 1H2023	4913	6/13/2036	6/13/2036	22.83	23.18	22.78	22.78	23.03	23.18	22.62	22.62	22.62	22.62	22.62	22.62	22.62	22.62	23.65	23.9	25.17	24.09	25.17	25.17	25.17	24.36	25.04	24.83
SPP South - Energy Price - 1H2023	4914	6/14/2036	6/14/2036	23.41	23.18	22.93	22.78	23.03	23.18	22.97	23.22	23.11	23.09	24.45	24.97	24.97	24.97	24.97	22.82	22.82	22.82	24.97	24.93	22.82	22.82	23.75	22.78
SPP South - Energy Price - 1H2023	4915	6/15/2036	6/15/2036	23.23	23.18	22.78	22.78	22.78	22.78	22.82	23.07	23.11	24.97	24.97	23.44	24.97	24.97	24.97	22.97	24.97	25.54	24.97	25.66	26	24.97	25.04	24.92
SPP South - Energy Price - 1H2023	4916	6/16/2036	6/16/2036	25.25	24.13	24.01	23.87	23.98	24.2	23.77	23.76	23.44	23.44	23.44	23.77	23.44	23.45	23.44	23.44	23.44	23.44	23.44	25.22	26.4	25.19	26.35	24.75
SPP South - Energy Price - 1H2023	4917	6/17/2036	6/17/2036	25.01	23.64	23.26	23.12	24.31	24.31	23.95	24.31	25.1	23.47	23.53	23.29	26.01	26.01	26.01	25.38	24.91	25.16	25.38	25.38	25.16	25.38	25.73	25.14
SPP South - Energy Price - 1H2023	4918	6/18/2036	6/18/2036	25.14	25.46	25.1	25.1	25.1	25.1	22.84	23.62	23.16	22.76	25.14	23.14	23.89	24.3	25.18	25.15	25.18	24.77	25.18	25.97	26.29	26	25.92	25.7
SPP South - Energy Price - 1H2023	4919	6/19/2036	6/19/2036	25.7	25.7	25.7	25.7	25.7	25.65	24.72	25.17	25.16	26.5	26.5	25.18	26.5	26.5	26.83	26.5	26.5	26.83	28.03	27.44	28.76	26.83	26.42	26.42
SPP South - Energy Price - 1H2023	4920	6/20/2036	6/20/2036	26.12	26.42	26.42	25.79	26.42	26.42	25.16	25.16	24.76	25.18	25.18	25.19	25.21	26.33	26.57	26.57	25.21	25.88	26.21	26.33	26.57	26.33	26.18	25.79
SPP South - Energy Price - 1H2023	4921	6/21/2036	6/21/2036	26.39	25.79	25.43	25.17	24.75	24.34	24.26	24.57	25.83	25.81	23.6	24.26	25.83	26.38	26.56	25.83	25.83	25.83	25.83	25.83	25.83	25.83	23.57	24.17
SPP South - Energy Price - 1H2023	4922	6/22/2036	6/22/2036	23.68	23.56	23.56	23.96	24.02	23.56	23.92	23.6	23.6	23.6	23.6	23.6	23.6	23.6	25.83	25.83	25.83	25.83	23.77	23.77	25.83	23.63	23.72	23.56
SPP South - Energy Price - 1H2023	4923	6/23/2036	6/23/2036	24.23	24.23	24.23	24.23	24.23	25.02	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	23.88	24.23	24.23
SPP South - Energy Price - 1H2023	4924	6/24/2036	6/24/2036	24.5	24.5	24.5	24.5	24.5	24.5	24.12	24.12	24.12	24.12	24.73	24.12	24.78	24.35	25.22	25.21	25.22	24.12	24.35	25.35	25.41	26.11	26.1	25.89
SPP South - Energy Price - 1H2023	4925	6/25/2036	6/25/2036	26.38	25.6	25.41	26.1	26.15	25.78	24.76	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	25.04	24.51	25.78	24.96
SPP South - Energy Price - 1H2023	4926	6/26/2036	6/26/2036	25.21	25.21	25.21	25.21	25.21	25.21	23.69	24.73	23.69	23.69	24.73	24.74	24.74	24.74	24.74	24.74	24.74	24.74	25.25	25.23	24.74	24.74	25.21	25.21
SPP South - Energy Price - 1H2023	4927	6/27/2036	6/27/2036	25.09	25.09	24.76	24.71	24.95	25.09	24.27	24.12	25.91	25.2	23.94	25.2	27.3	27.3	27.3	27.3	25.75	27.66	27.66	27.3	27.3	25.94	25.12	26.33
SPP South - Energy Price - 1H2023	4928	6/28/2036	6/28/2036	26.12	24.99	24.76	24.71	25.49	25.09	24.73	24.7	26.64	24.7	24.35	26.66	26.85	26.66	26.66	27.41	26.66	26.85	26.66	24.86	26.16	26.44	26.61	25.68
SPP South - Energy Price - 1H2023	4929	6/29/2036	6/29/2036	25.72	26.33	26.17	24.71	24.95	24.82	24.35	24.35	24.35	24.35	24.35	24.67	24.35	26.46	26.2	26.14	24.96	24.35	25.87	26.46	26.16	26.66	26.61	25.01
SPP South - Energy Price - 1H2023	4930	6/30/2036	6/30/2036	24.46	23.87	24.3	24.3	24.23	23.86	23.16	23.01	22.84	23.04	22.94	26.07	26.07	26.07	26.07	26.07	25.18	25.16	26.07	25.16	25.49	25.16	24.61	25.21
SPP South - Energy Price - 1H2023	4931	7/1/2036	7/1/2036	41.32	40.67	38.51	38.92	41.32	41.09	43.35	43.25	43.69	46.09	47.06	46.08	50.12	50.12	50.17	51.96	51.96	51.96	53.45	50.12	52.93	51.96	50.49	49.47
SPP South - Energy Price - 1H2023	4932	7/2/2036	7/2/2036	47.64	43.92	42.93	42.87	42.94	43.04	44.67	45.22	49.6	46.04	52.97	52.87	52.97	52.97	50.56	50.56	47.89	52.97	53.35	53.63	53.4	53.08	47.94	45.36
SPP South - Energy Price - 1H2023	4933	7/3/2036	7/3/2036	37.88	33.76	33.76	34.43	37.88	37.88	37.23	36.96	36.96	36.66	36.96	36.66	40.53	37.79	42.39	40.68	42.48	42.48	43.13	43.05	41.97	42.58	42.27	39.62
SPP South - Energy Price - 1H2023	4934	7/4/2036	7/4/2036	39.82	38.14	37.76	36.94	34.27	37.04	36.65	36.65	36.65	37.8	38.54	38.71	40.89	41.41	41.29	41.35	42.54	42.54	43.7	42.54	42.64	43.09	45.93	43.34
SPP South - Energy Price - 1H2023	4935	7/5/2036	7/5/2036	41.3	39.82	38.39	38.39	37.84	36.85	39.14	39.14	38.13	38.13	39.14	39.14	39.14	39.14	43.27	44.94	45.09	47.17	51.44	51.91	50.76	48.5	41.02	38.8
SPP South - Energy Price - 1H2023	4936	7/6/2036	7/6/2036	38.14	34.81	34.51	33.76	33.76	33.76	38.13	38.13	38.93	38.13	39.14	38.93	39.14	39.14	42.48	39.14	44.51	43.29	40.94	46.16	44.51	44.51	35.29	33.76
SPP South - Energy Price - 1H2023	4937	7/7/2036	7/7/2036	44.1	44.1	44.1	44.1	44.1	44.1	43.82	42.82	42.76	42.76	42.84	42.84	42.87	41.09	42.87	42.84	41.09	42.87	43.72	44.07	44.18	44.73	42.38	44.1
SPP South - Energy Price - 1H2023	4938	7/8/2036	7/8/2036	42.61	44.23	44.61	42.27	42.86	44.78	46.37	46.77	43.03	43.03	45.21	47.47	47.5	47.47	48.11	50.14	47.5	47.5	47.47	47.74	47.5	47.44	44.78	44.78
SPP South - Energy Price - 1H2023	4939	7/9/2036	7/9/2036	44.32	44.32	44.32	44.32	44.32	44.32	44.66	44.72	41.27	41.61	41.27	41.71	44.2	43.93	42.64	45.38	42.92	44.72	47.68	47.05	44.72	42.88	42.25	43.23
SPP South - Energy Price - 1H2023	4940	7/10/2036	7/10/2036	40.98	40.69	40.66	41.86	41.95	41.37	40.27	40.27	40.27	40.27	42.79	43.13	41.81	44.09	42.83	42.88	40.27	40.27	44.83	46.52	40.27	46.52	43.64	43.09
SPP South - Energy Price - 1H2023	4941	7/11/2036	7/11/2036	42.63	39.04	38.94	38.94	39.25	41.31	39.9	43.43	42.76	44.16	43.05	44.21	43.88	45.51	45.51	43.76	45.51	45.51	46.84	47.99	46.09	46.37	45.36	43.83
SPP South - Energy Price - 1H2023	4942	7/12/2036	7/12/2036	42.63	42.63	42.63	41.4	40.91	40.11	45.74	45.74	45.74	46.53	45.74	45.14	47.8	47.13	49.42	49.42	49.42	48.77	52.58	49.72	49.72	49.72	42.63	42.63
SPP South - Energy Price - 1H2023	4943	7/13/2036	7/13/2036	40.53	38.94	38.94	38.94	40.46	40.11	45.14	45.14	45.14	45.14	45.14	45.14	45.14	45.14	45.14	49.07	45.14	45.14	49.42	49.42	53.74	52.58	42.97	42.89
SPP South - Energy Price - 1H2023	4944	7/14/2036	7/14/2036	43.93	43.46	42.65	43.93	43.93	43.43	42.82	43.26	45.09	45.3	47.3	46.74	48.81	51.41	51.33	50.83	50.37	53.09	55.66	54.58	56.34	52.55	51.84	46.32
SPP South - Energy Price - 1H2023	4945	7/15/2036	7/15/2036	45.36	45.36	44.55	44.55	44.88	44.55	46.22	46.66	47.19	47.25	45.1	47.89	47.94	49.76	49.98	49.49	49.76	47.25	56.8	49.76	49.76	52.78	45.91	44.55
SPP South - Energy Price - 1H2023	4946	7/16/2036	7/16/2036	44.55	44.36	43.53	44.55	44.93	42.65	42.32	41.76	41.76	41.76	42.86	44.59	45.4	41.76	42.9	42.94	46.8	46.8	48.24	48.24	43.36	47.55	45.36	44.93
SPP South - Energy Price - 1H2023	4947	7/17/2036	7/17/2036	45.36	45.36	45.36	45.36	45.36	45.36	44.53	42.98	43.84	43.48	44.96	48.96	45.6	47.36	49	48.96	46.71	48.96	49	51.59	53.25	50.01	47.02	45.36
SPP South - Energy Price - 1H2023	4948	7/18/2036	7/18/2036	45.04	45.04	45.04	45.04	45.04	45.04	45.27	47.39	47.61	48.35	48.35	48.35	48.35	47.7	48.35	48.35	48.35	48.35	49.71	48.35	48.35	47.7	45.28	45.04
SPP South - Energy Price - 1H2023	4949	7/19/2036	7/19/2036	45.04	45.04	45.04	45.04	45.04	45.28	52.22	52.16	50.78	51.23	51.88	52.49	52.58	52.22	52.58	52.58	52.58	52.58	52.91	52.58	52.91	52.22	45.04	42.66
SPP South - Energy Price - 1H2023	4950	7/20/2036	7/20/2036	43.71	43.15	41.11	41.11	44.68	41.32	47.65	47.65	47.65	47.65	47.65	50.64	51.74	52.22	52.58	52.58	52.58	52.58	52.58	52.22	52.22	52.58	45.36	45.04
SPP South - Energy Price - 1H2023	4951	7/21/2036	7/21/2036	43.29	40.58	41.38	43.28	43.28	42.86	42.73	40.72	40.43	40.77	40.43	44.43	46.7	44.19	45.96	45.38	46.7	46.7	50.5	46.7	46.7	46.1	44.5	43.28
SPP South - Energy Price - 1H2023	4952	7/22/2036	7/22/2036	43.63	43.63	43.55	43.63	42.57	43.63	43.12	42.74	40.71	43.22	43.37	42.81	46.42	47.02	46.42	47.02	47.02	47.02	52.18	47.02	47.02	46.42	43.63	44.86
SPP South - Energy Price - 1H2023	4953	7/23/2036	7/23/2036	43.98	43	42.99	39.27	42	43	42.62	42.77	43.8	45.52	46.44	46.44	46.44	46.44	46.44	46.44	46.44	46.44	52.04	50.53	50.29	45.24	44.21	44.21
SPP South - Energy Price - 1H2023	4954	7/24/2036	7/24/2036	38.63	42.29	43.47	43.47	43.47	43.47	45.2	44.74	42.33	45.2	45.77	51.23	51.23	51.23	51.23	51.23	51.23	52.24	52.12	51.23	51.23	51.23	43.69	43.47
SPP South - Energy Price - 1H2023	4955	7/25/2036	7/25/2036	41.87	43.04	41.97	43.04	43.47	45.36	44.65	43.74	44.82	45.38	44.82	44.82	46.97	52.35	52.77	51.7	52.35	50.76	52.51	52.35	50.41	45.38	43.31	41.87
SPP South - Energy Price - 1H2023	4956	7/26/2036	7/26/2036	41.73	41.73	38.26	41.49	41.87	38.26	48.38	48.54	49.68	49.65	50.65	52.58	52.58	52.58	52.58	52.58	52.58	50.2	52.58	49.9	48.71	49.77	41.87	41.87
SPP South - Energy Price - 1H2023	4957	7/27/2036	7/27/2036	39.45	41.87	41.87	39.13	41.87	40.49	44.79	44.35	44.35	44.35	45.36	48.54	48.54	49.84	50.91	49.9	52.57	52.51	52.58	54.57	52.58	52.57	43.04	43.04
SPP South - Energy Price - 1H2023	4958	7/28/2036	7/28/2036	42.71	41.59	41.72	41.24	41.59	41.72	42.65	42.71	42.71	42.72	44.56	45.11	44.56	46.25	47.03	50.43	50.43	52.2	52.49	52.9	52.94	53.09	45.15	45.36
SPP South - Energy Price - 1H2023	4959	7/29/2036	7/29/2036	43.56	43.47	43.47	43.31	43.31	43.56	45.05	43.95	43.76	45.05	45.62	45.62	51.05	51.05	56.13	56.57	56.57	59.01	58.69	56.57	56.52	53.85	49.37	45.36
SPP South - Energy Price - 1H2023	4960	7/30/2036	7/30/2036	43.55	42.36	42.36	42.36	43.55	43.55	44.61	43.87	42.69	45.26	45.83	45.83	45.84	47.76	47.91	49.56	49.16	51.31	51.31	51.31	51.31	45.83	43.55	43.55
SPP South - Energy Price - 1H2023	4961	7/31/2036	7/31/2036	43.1	43.1	41.73	41.25	42.73	42.73	44.91	42.86	45.6	44.42	46.03	45.6	45.6	46.19	42.78	46.19	47.9	48.91	50.32	46.19	46.18	46.18	43.44	43.44
SPP South - Energy Price - 1H2023	4962	8/1/2036	8/1/2036	44.9	44.9	44.9	44.53	44.9	45.78	45.77	45.71	43.24	43.09	45.78	45.79	48.34	49.15	49.15	49.15	47.52	49.78	50.04	51.56	49.15	49.15	45.78	45.72
SPP South - Energy Price - 1H2023	4963	8/2/2036	8/2/2036	44.53	44.9	44.53	44.53	44.53	44.53	40.97	40.28	40.97	40.97	40.27	40.65	42.31	42.31	42.31	42.46	42.62	43.5	42.31	43.5	44.53	43.5	45.92	45.78
SPP South - Energy Price - 1H2023	4964	8/3/2036	8/3/2036	45.55	44.9	45.78	45.27	44.53	44.53	42.31	42.31	40.97	41.22	42.31	42.31	42.31	43.5	42.31	42.31	43.5	44.54	44.54	44.54	46.05	43.5	45.72	44.63
SPP South - Energy Price - 1H2023	4965	8/4/2036	8/4/2036	39.74	38.97	38.97	39.93	40.04	40.04	43.92	43.92	43.92	44.39	43.92	44.39	45.53	45.46	45.6	45.57	45.6	46	47.36	47.9	45.99	44.39	39.18	38.97
SPP South - Energy Price - 1H2023	4966	8/5/2036	8/5/2036	44.8	44.8	44.59	44.59	44.59	44.59	47.34	47.92	45.8	45.83	49.2	49.84	49.84	49.84	49.84	49.84	49.2	49.2	49.2	49.2	49.84	49.2	45.84	45.4
SPP South - Energy Price - 1H2023	4967	8/6/2036	8/6/2036	45.4	45.4	45.4	45.39	45.39	45.39	43.82	44	43.82	43.82	43.82	43.82	43.82	44.3	45.84	43.82	45.84	45.84	49.96	46.88	46.73	45.83	45.3	45.3
SPP South - Energy Price - 1H2023	4968	8/7/2036	8/7/2036	45.88	43.85	43.49	45.3	45.3	45.3	44.27	44.27	44.27	44.27	44.27	44.27	45.85	45.85	48.21	48.95	48.7	49.42	50.47	50.42	50.47	48.84	45.93	45.93
SPP South - Energy Price - 1H2023	4969	8/8/2036	8/8/2036	44.53	43.26	43.49	44.53	44.53	44.02	44.05	45.71	44.05	44.05	44.05	44.05	45.83	45.87	44.57	48.32	48.32	48.32	50.22	50.2	47.52	47.57	44.6	45.66
SPP South - Energy Price - 1H2023	4970	8/9/2036	8/9/2036	43.19	43.21	43.33	45.06	45.66	45.66	41.7	41.25	43.3	42.18	41.76	44.53	43.39	44.61	44.54	44.61	44.61	44.61	44.54	43.39	43.12	43.39	45.66	45.66
SPP South - Energy Price - 1H2023	4971	8/10/2036	8/10/2036	45.66	41.68	41.68	41.68	41.68	41.68	39.61	39.61	39.61	39.61	39.61	39.61	39.61	42.23	43.05	43.05	39.61	39.61	44.54	44.61	43.39	43.39	45.66	45.66
SPP South - Energy Price - 1H2023	4972	8/11/2036	8/11/2036	46.1	46.1	45.94	45.44	43.19	44.41	46.72	45.78	44.41	44.41	45.85	45.87	46.91	47.52	48.35	48.68	48.84	46.59	50.62	50.62	50.62	48.98	46.1	46.1
SPP South - Energy Price - 1H2023	4973	8/12/2036	8/12/2036	46.13	45.47	45.11	45.17	44.09	45.17	45.74	43.63	43.63	45.74	45.79	45.83	46.13	46.75	47.57	49.75	48.07	49.75	55.89	54.85	50.41	49.75	45.17	45.17
SPP South - Energy Price - 1H2023	4974	8/13/2036	8/13/2036	39.21	39.21	38.9	38.26	38.26	39.21	42.47	39.97	38.35	38.86	39.98	39.6	41.07	43.24	43.99	43.99	43.99	43.99	49.61	50.12	48.4	43.7	39.02	38.26
SPP South - Energy Price - 1H2023	4975	8/14/2036	8/14/2036	35.49	35.49	35.49	34.57	35.49	35.49	39.78	38.57	36.59	39.46	39.78	39.78	39.78	41.22	40.5	41.99	44.52	44.52	47	45.94	45.31	45.33	42.8	40.85
SPP South - Energy Price - 1H2023	4976	8/15/2036	8/15/2036	39.62	38.16	39.62	38.3	38.47	39.62	40.12	39.26	39.26	36.91	39.59	39.87	43.41	43.41	44.21	43.77	43.72	44.19	44.39	44.44	44.55	44.4	40.92	38.21
SPP South - Energy Price - 1H2023	4977	8/16/2036	8/16/2036	35.75	34.93	34.93	34.93	34.93	34.93	33.19	33.41	32.33	32.36	33.19	34.93	36.1	40.3	42.75	41.92	43.61	44.54	44.54	43.61	43.74	41.92	41.05	38.21
SPP South - Energy Price - 1H2023	4978	8/17/2036	8/17/2036	36.41	36.57	34.93	34.93	34.93	34.93	33.19	33.19	33.19	34.8	35.26	36.25	36.48	39.15	40.3	41.92	42.73	43.74	44.05	43.74	43.74	41.92	41.35	41.2
SPP South - Energy Price - 1H2023	4979	8/18/2036	8/18/2036	42.83	42.83	42.57	42.83	42.83	42.83	47.01	47.73	47.62	47.01	51.78	50.66	53.12	51.38	54.79	53.41	54.19	54.59	55.03	55.42	54.78	51.38	49.73	43.32

SPP South - Energy Price - 1H2023	4980	8/19/2036	8/19/2036	45.53	45.53	45.53	44.93	41.56	45.53	50.09	50.09	46.65	50.09	50.75	50.09	50.09	50.09	55.53	50.28	54.05	54.05	59.44	56.97	50.75	50.75	46.76	45.53
SPP South - Energy Price - 1H2023	4981	8/20/2036	8/20/2036	46.76	46.76	46.76	46.76	45.52	46.76	47.7	48.23	45.89	51.24	51.25	54.98	57.12	61.44	61.62	63.18	75.91	63.18	68.65	63.18	62.92	62.02	58.72	50.85
SPP South - Energy Price - 1H2023	4982	8/21/2036	8/21/2036	47.66	46.88	46.35	46.88	46.88	46.88	51.9	50.86	50.86	51.3	51.12	56.32	57.95	59.67	59.74	59.74	59.74	61.04	59.74	64.31	59.74	57.95	56.53	47.66
SPP South - Energy Price - 1H2023	4983	8/22/2036	8/22/2036	46.07	46.65	46.07	46.07	46.88	46.88	54.2	56.13	56.13	60.28	59.93	61.54	58.22	56.66	59.41	61.53	60.4	60.4	61.06	59.16	56.13	56.13	46.88	46.88
SPP South - Energy Price - 1H2023	4984	8/23/2036	8/23/2036	46.07	46.07	46.07	46.07	46.07	46.07	43.78	42.58	42.58	43.78	43.78	44.54	52.12	52.12	54.62	54.6	55.3	55.35	56.28	56.82	54.62	44.54	46.07	46.07
SPP South - Energy Price - 1H2023	4985	8/24/2036	8/24/2036	46.07	45.26	45.07	44.83	44.81	44.81	42.58	42.58	42.58	42.58	42.58	42.58	43.78	43.78	44.12	43.78	43.78	42.58	44.54	47.28	44.64	43.78	46.07	45.04
SPP South - Energy Price - 1H2023	4986	8/25/2036	8/25/2036	45.04	45.04	45.04	45.04	45.04	45.04	46.52	43.52	43.52	43.52	43.52	43.52	43.52	45.82	49.63	49.63	49.63	50.28	56.4	55.88	55.79	50.28	46.31	46.31
SPP South - Energy Price - 1H2023	4987	8/26/2036	8/26/2036	46.97	48.3	48.3	48.3	48.3	48.3	51.45	51.45	47.33	47.33	47.33	51.45	51.45	51.45	52.15	52.15	52.15	56.64	59.32	58.68	58.43	52.15	48.3	47.12
SPP South - Energy Price - 1H2023	4988	8/27/2036	8/27/2036	47.12	47.12	47.12	47.12	47.12	47.12	49.83	46.14	45.27	45.27	45.27	45.27	45.27	45.27	45.96	45.27	45.96	58.26	55.64	55.84	57.71	51.33	46.88	46.88
SPP South - Energy Price - 1H2023	4989	8/28/2036	8/28/2036	46.88	46.88	46.88	46.88	46.88	47.72	52.15	45.93	45.78	45.94	45.78	45.78	45.78	45.78	50.34	46.31	52.88	58.77	61.24	59.56	58.22	56.33	49.08	48.73
SPP South - Energy Price - 1H2023	4990	8/29/2036	8/29/2036	48.73	48.73	47.39	48.73	48.73	48.73	52.55	51.84	49.23	51.84	51.84	53.25	55.49	60.15	73.47	75.47	61.37	76.3	60.92	61.37	60.69	59.17	47.39	47.39
SPP South - Energy Price - 1H2023	4991	8/30/2036	8/30/2036	47.39	47.39	47.39	47.38	46.88	47.38	44.54	44.54	45.02	45.02	48.12	46.3	46.3	55.22	55.31	56.63	58.77	55.22	59.75	60.3	60.17	56.63	47.39	44.95
SPP South - Energy Price - 1H2023	4992	8/31/2036	8/31/2036	46.88	44.95	46.88	44.95	44.95	46.88	44.54	42.71	42.71	41.73	44.54	44.54	45.02	46.3	53.7	53.62	55.02	58.83	55.22	60.29	58.3	46.4	47.51	47.39
SPP South - Energy Price - 1H2023	4993	9/1/2036	9/1/2036	39.5	39.5	39.5	38.97	39.5	39.5	40.36	40.36	35.92	37.95	37.32	40.36	40.36	38.98	40.36	40.61	40.36	44.24	47.49	46.07	43.07	40.36	39.5	38.97
SPP South - Energy Price - 1H2023	4994	9/2/2036	9/2/2036	38	37.99	38	37.99	36.63	38	37.22	35.56	34.29	34.76	34.24	35.65	35.87	36.45	36.33	39.26	39.55	39.04	43.28	39.55	39.55	38.89	36.8	35.67
SPP South - Energy Price - 1H2023	4995	9/3/2036	9/3/2036	35.46	35.85	36.01	36.22	36.22	37.75	38.82	38.82	38.82	39.33	39.79	43.67	44.03	43.6	43.01	42.99	42.79	39.56	43.6	44.15	43.6	39.33	38.82	38.82
SPP South - Energy Price - 1H2023	4996	9/4/2036	9/4/2036	38.65	38.65	37.59	37.59	38.65	38.65	38.68	38.68	38.68	36.02	35.6	35.59	34.55	35.58	35.6	35.58	35.17	38.68	38.68	38.68	38.68	38.15	37.59	37.59
SPP South - Energy Price - 1H2023	4997	9/5/2036	9/5/2036	37.31	35.45	35.61	37.31	34.84	37.31	35.53	34.37	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	33.7	35.58	35.58	35.4	33.7	34.07	34.07
SPP South - Energy Price - 1H2023	4998	9/6/2036	9/6/2036	34.07	34.07	34.07	34.07	34.53	34.45	58.16	57.07	57.07	57.07	57.07	57.07	57.07	57.07	57.07	57.07	62.5	62.5	64.26	62.5	62.5	62.5	35.79	34.07
SPP South - Energy Price - 1H2023	4999	9/7/2036	9/7/2036	34.07	34.07	34.07	34.07	34.07	34.07	57.07	57.07	57.07	57.07	57.07	57.07	62.5	62.5	62.5	62.5	57.5	62.5	63.95	63.98	62.5	61.27	37.31	35.13
SPP South - Energy Price - 1H2023	5000	9/8/2036	9/8/2036	35.13	35.52	35.69	35.17	35.13	37.39	37.78	37.89	37.76	36.15	35.6	34.86	35.6	38.5	38.5	38.56	39	38.56	39.77	39.67	38.56	38.5	37.39	37.39
SPP South - Energy Price - 1H2023	5001	9/9/2036	9/9/2036	38.39	38.39	36.58	38.39	38.39	38.39	38.66	38.84	37.5	34.55	34.55	34.55	34.55	34.93	34.55	34.55	34.74	37.56	37.72	37.77	36.37	34.55	35.04	35.04
SPP South - Energy Price - 1H2023	5002	9/10/2036	9/10/2036	35.47	35.47	35.47	35.47	35.47	35.47	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	40.35	35.69	38.71	34.93	36.74	36.46
SPP South - Energy Price - 1H2023	5003	9/11/2036	9/11/2036	35.87	35.93	35.93	35.93	35.81	35.42	35.62	34.41	33.44	33.44	34.4	34.4	34.4	34.4	34.41	34.41	34.41	35.66	39.75	39.74	38.5	36.84	38.21	38.21
SPP South - Energy Price - 1H2023	5004	9/12/2036	9/12/2036	37.06	37.06	37.06	37.06	37.06	37.06	37.34	35.52	34	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.85	33.85
SPP South - Energy Price - 1H2023	5005	9/13/2036	9/13/2036	33.85	33.85	33.85	33.85	33.85	33.85	56.7	15.42	10.78	9.99	11.46	12.61	15.42	17.46	20.01	22.17	22.98	56.7	56.7	56.7	56.7	56.7	33.85	33.85
SPP South - Energy Price - 1H2023	5006	9/14/2036	9/14/2036	33.85	33.85	33.85	33.85	33.85	33.85	56.7	12.33	10.78	9.99	11.46	12.61	15.42	17.46	20.01	56.7	56.7	56.7	56.7	56.7	56.7	56.7	33.85	33.85
SPP South - Energy Price - 1H2023	5007	9/15/2036	9/15/2036	33.42	33.42	33.42	33.42	33.42	33.42	33.14	33.14	33.14	33.14	33.14	33.14	33.14	33.14	35.48	37.8	37.8	37.8	37.8	37.8	35.58	34.78	33.92	33.42
SPP South - Energy Price - 1H2023	5008	9/16/2036	9/16/2036	33.6	34.07	34.24	34.11	34.46	34.52	36.7	35.48	35.48	35.53	35.18	35.48	35.53	37.47	37.47	37.59	37.94	37.94	37.94	37.59	37.47	35.53	34.95	33.54
SPP South - Energy Price - 1H2023	5009	9/17/2036	9/17/2036	33.54	33.17	33.51	33.39	33.94	33.59	35.49	35.46	32.91	33.14	32.91	34.53	33.74	37.55	37.55	37.55	35.25	37.55	37.55	37.65	37.55	35.04	34.16	33.62
SPP South - Energy Price - 1H2023	5010	9/18/2036	9/18/2036	34.16	33.72	34.09	34.16	34.16	34.16	35.79	34.06	33.38	33.38	35.51	33.53	35.51	35.57	35.57	35.6	37.23	38.56	42.42	39.16	37.23	37.23	36.9	36.9
SPP South - Energy Price - 1H2023	5011	9/19/2036	9/19/2036	33.87	33.8	33.53	33.78	35.3	36.29	34.96	33.57	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.93	35.39	34.03	32.9	32.9	33.15	33.15
SPP South - Energy Price - 1H2023	5012	9/20/2036	9/20/2036	33.15	33.15	33.15	33.15	33.15	33.15	55.53	12.61	10.78	9.99	11.46	12.61	12.61	17.46	20.01	55.53	55.53	55.53	55.53	55.53	55.53	55.53	33.15	33.15
SPP South - Energy Price - 1H2023	5013	9/21/2036	9/21/2036	13.56	12.61	11.94	11.4	11.62	10.64	17.04	3.6	3.3	3	0	0	3.6	5.93	5.45	15.87	22.38	55.53	55.53	55.53	55.53	55.53	13.32	12.86
SPP South - Energy Price - 1H2023	5014	9/22/2036	9/22/2036	12.6	12.3	11.94	11.39	10.95	14.74	28.73	11.75	6.37	10.81	7.04	11.69	16.85	28.74	28.74	28.74	28.74	29.65	32.87	32.87	30.42	30.26	28.39	28.39
SPP South - Energy Price - 1H2023	5015	9/23/2036	9/23/2036	31.17	31.17	31.17	31.17	31.17	31.17	31.16	31.16	31.16	31.16	31.16	31.16	31.16	31.16	31.67	31.16	33.5	35.59	35.59	35.59	35.44	33.5	33.14	32.75
SPP South - Energy Price - 1H2023	5016	9/24/2036	9/24/2036	31.1	31.1	31.1	31.1	31.1	32.48	32.41	32.76	34.68	35.1	34.11	33.45	34.22	35.44	35.47	35.53	35.53	35.94	35.53	35.53	35.53	34.29	33.07	32.69
SPP South - Energy Price - 1H2023	5017	9/25/2036	9/25/2036	32.95	32.95	32.95	32.95	32.95	34.33	34.15	34.45	33.08	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	35.24	34.58	33.69	32.72	32.72	32.95	32.95
SPP South - Energy Price - 1H2023	5018	9/26/2036	9/26/2036	30.97	30.97	30.97	30.97	30.97	30.97	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	30.99	31.34	30.99	30.99	30.97	30.97
SPP South - Energy Price - 1H2023	5019	9/27/2036	9/27/2036	30.97	30.97	30.97	30.97	30.97	30.97	51.88	51.88	12.44	3	2.91	3.5	3.5	3.5	3.5	5.36	4.93	24.79	51.88	51.88	23.58	23.49	13.82	13.62
SPP South - Energy Price - 1H2023	5020	9/28/2036	9/28/2036	13.62	13.39	13.62	19.73	30.97	30.97	51.88	13.17	12.86	12.64	12.86	12.86	12.86	12.86	12.86	12.86	51.88	51.88	54.3	52.71	52.71	51.88	30.97	30.97
SPP South - Energy Price - 1H2023	5021	9/29/2036	9/29/2036	28.95	28.95	28.95	28.95	28.95	28.95	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	33.42	33.42	33.42	29.22	29.22	28.95	28.95
SPP South - Energy Price - 1H2023	5022	9/30/2036	9/30/2036	33	33	33	33	33	33	33.55	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	32.76	33	33
SPP South - Energy Price - 1H2023	5023	10/1/2036	10/1/2036	19.8	19.8	19.8	19.8	19.8	19.8	20.2	20.2	20.2	6.22	5.11	4.88	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	19.8	19.8
SPP South - Energy Price - 1H2023	5024	10/2/2036	10/2/2036	20.08	20.08	20.08	20.08	19.8	19.8	20.46	6.75	3.97	3.97	4.38	4.88	6.37	6.44	9.36	20.46	20.46	20.46	21.24	20.46	20.46	20.73	20.08	20.08
SPP South - Energy Price - 1H2023	5025	10/3/2036	10/3/2036	20.33	20.33	20.33	20.33	20.33	20.33	21.08	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	21.25	21.55	21.68	21.08	21.08	20.33	20.33
SPP South - Energy Price - 1H2023	5026	10/4/2036	10/4/2036	20.33	20.33	20.33	20.33	20.33	20.33	24.51	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	26.33	26.33	25.56	24.22	24.22	20.33	20.33
SPP South - Energy Price - 1H2023	5027	10/5/2036	10/5/2036	20.33	20.33	20.33	20.33	20.33	20.33	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.22	20.33	20.33
SPP South - Energy Price - 1H2023	5028	10/6/2036	10/6/2036	22.02	21.63	21.66	22.02	22.02	22.02	23.36	22.08	23.06	23.36	23.36	21.97	23.36	21.97	21.97	23.36	23.36	25.57	25.55	23.36	23.36	21.97	22.02	23.37
SPP South - Energy Price - 1H2023	5029	10/7/2036	10/7/2036	21.77	20.85	21.51	22.76	22.89	23.31	22.29	22.29	22.15	22.06	21.05	21.05	20.83	19.95	12.24	21.05	21.03	21.05	21.19	21.19	21.05	21.05	18.4	18.25
SPP South - Energy Price - 1H2023	5030	10/8/2036	10/8/2036	18.21	18.21	18.4	18.4	18.4	20.8	21.01	21.01	21.01	21.12	21.01	22.24	21.01	21.01	21.01	21.01	21.01	21.15	22.24	22.24	22.24	22.24	22.95	22.95
SPP South - Energy Price - 1H2023	5031	10/9/2036	10/9/2036	23.19	23.37	23.37	23.37	24.33	23.79	22.8	22.8	21.49	20.88	9.57	7.89	9.57	6.44	9.57	9.18	21.46	22.8	24.01	25.58	25.42	22.8	21.49	21.41
SPP South - Energy Price - 1H2023	5032	10/10/2036	10/10/2036	21.49	21.49	21.49	21.49	21.49	21.49	22.64	21.55	21.55	21.21	21.55	21.55	20.83	20.83	21.55	21.55	21.55	22.87	25.05	25.64	24.28	21.55	21.66	20.38
SPP South - Energy Price - 1H2023	5033	10/11/2036	10/11/2036	19.77	19.77	19.77	21.18	21.49	21.49	26.02	23.91	22.4	8.68	15.49	22.4	12.44	22.4	22.4	22.4	22.4	27.71	27.85	27.71	27.47	25.61	21.49	21.49
SPP South - Energy Price - 1H2023	5034	10/12/2036	10/12/2036	21.49	21.49	21.49	21.49	21.49	21.49	27.47	25.61	6.07	7.42	5.86	10.64	9.79	8.61	9.79	22.4	22.4	25.61	27.83	27.83	25.61	25.61	21.49	22.36
SPP South - Energy Price - 1H2023	5035	10/13/2036	10/13/2036	23.37	22.81	21.5	22.81	23.91	23.36	22.89	22.35	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	24.52	23.62	24.13	22.89	22.89	23.18	22.93
SPP South - Energy Price - 1H2023	5036	10/14/2036	10/14/2036	23.37	23.37	23.37	23.37	23.37	23.37	22.89	21.79	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	22.64	22.89	22.64	22.07	21.56	21.5	20.21
SPP South - Energy Price - 1H2023	5037	10/15/2036	10/15/2036	20.21	20.21	20.54	20.21	18.48	20.21	21.76	21.26	19.02	20.49	17.54	4.88	9.6	8.38	17.54	19.63	19.31	21.26	21.26	21.26	21.26	21.26	18.48	18.48
SPP South - Energy Price - 1H2023	5038	10/16/2036	10/16/2036	18.61	18.61	20.02	21.26	20.08	21.65	22.67	21.38	21.38	20.83	19.67	19.67	20.83	19.67	21.38	21.38	21.38	21.47	21.51	21.38	21.38	21.38	20.3	18.74
SPP South - Energy Price - 1H2023	5039	10/17/2036	10/17/2036	17.3	18.74	18.38	18.3	18.77	18.74	20.17	20.17	20.17	20.17	18.67	20.17	18.56	20.17	20.17	18.56	20.17	20.17	20.17	20.32	21.27	20.32	20.39	20.14
SPP South - Energy Price - 1H2023	5040	10/18/2036	10/18/2036	20.16	20.86	19.73	19.73	18.15	19.73	21.63	23.52	20.62	9.12	20.62	20.62	20.62	20.62	20.62	20.62	24.14	27.86	27.85	27.36	27.64	27.69	22.96	20.95
SPP South - Energy Price - 1H2023	5041	10/19/2036	10/19/2036	19.73	20.86	21.45	19.73	19.73	19.73	23.52	23.51	20.62	1.9	1.24	1.49	1.9	1.9	1.9	2.29	20.62	27.2	26.76	27.71	27.71	27.6	21.39	23.37
SPP South - Energy Price - 1H2023	5042	10/20/2036	10/20/2036	23.37	22.13	22.2	21.5	23.37	23.74	23.22	23.12	22.74	22.6	22.74	22.74	22.74	23.12	23.25	24.24	26.13	30.21	30.22	27.49	25.69	25.44	23.37	21.73
SPP South - Energy Price - 1H2023	5043	10/21/2036	10/21/2036	21.78	20.15	18.9	18.9	18.9	18.9	23.16	20.83	3.97	4.03	4.03	4.03	4.03	1.89	4.03	7.4	12.25	20.83	22.93	22.98	20.83	12.25	8.39	10.81
SPP South - Energy Price - 1H2023	5044	10/22/2036	10/22/2036	10.81	10.81	6.35	10.81	19.17	19.17	23.47	23.58	23.45	23.58	23.58	23.58	23.58	23.58	24.7	23.58	23.58	23.58	23.58	23.58	23.58	23.26	19.47	19.47
SPP South - Energy Price - 1H2023	5045	10/23/2036	10/23/2036	19.47	19.47	19.47	19.46	19.47	19.47	20.86	20.86	20.86	20.86	20.86	20.83	20.83	20.86	20.86	20.86	20.86	20.86	20.86	20.86	20.86	20.83	19.46	19.46
SPP South - Energy Price - 1H2023	5046	10/24/2036	10/24/2036	19.3	19.3	19.3	19.3	19.3	19.31	20.72	20.72	20.72	20.83	20.83	20.94	20.83	20.83	22.12	22.12	22.12	23.13	23.13	22.12	22.12	20.72	19.77	19.77
SPP South - Energy Price - 1H2023	5047	10/25/2036	10/25/2036	19.77	19.77	19.77	19.77	19.84	19.77	25.6	25.6	25.6	23.64	25.6	23.64	23.64	23.64	24.01	24.22	23.94	25.6	25.6	25.6	25.6	23.01	19.31	19.31
SPP South - Energy Price - 1H2023	5048	10/26/2036	10/26/2036	19.31	19.31	19.31	19.31	19.31	19.31	23.01	23.01	2.25	2.22	2.41	1.15	1.25	1.11	1.72	1.09	5.31	23.01	23.01	23.01	23.01	23.01	19.31	19.31
SPP South - Energy Price - 1H2023	5049	10/27/2036	10/27/2036	19.41	19.41	19.41	19.41	19.41	19.41	20.83	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	23.24	23.24	21.59	20.83	20.83	21.61	21.61
SPP South - Energy Price - 1H2023	5050	10/28/2036	10/28/2036	21.93	21.93	21.93	21.93	21.93	21.93	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.56	22.12	23.48	22.11	21.64	21.64	21.93	21.93
SPP South - Energy Price - 1H2023	5051	10/29/2036	10/29/2036	21.75	21.75	21.75	21.75	21.75	21.75	21.19	21.19	21.19	23.38	21.19	21.43	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	19.54	19.54
SPP South - Energy Price - 1H2023	5052	10/30/2036	10/30/2036	19.01	19.01	19.01	19.01	19.01	19.01	20.45	20.45	20.45	20.45	20.45	20.45	18.81	20.45	19.34	20.45	20.45	21.26	21.99	22.83	21.46	21.89	21.74	21.74
SPP South - Energy Price - 1H2023	5053	10/31/2036	10/31/2036	19.83	19.83	19.31	19.31	19.31	19.31	20.92	21.1	18.96	18.96	18.96	18.73	18.74	18.65	4.13	17.44	18.96	18.96	18.96	18.96	18.96	18.96	17.39	17.39
SPP South - Energy Price - 1H2023	5054	11/1/2036	11/1/2036	22.65	22.65	22.65	22.65	22.65	22.65	35.75	35.75	12.23	8.27	8.27	7.45	7.45	8.01	8.1	8.27	35.75	39.74	35.75	35.75	35.75	35.75	22.65	22.65
SPP South - Energy Price - 1H2023	5055	11/2/2036	11/2/2036	22.65	22.65	22.65	22.65	22.65	22.65	35.75	35.75	35.75	4.02	4.37	1.89	2.05	2.82	2.82	1.79	35.75	35.75	35.75	35.75	35.75	35.75	22.65	7.34
SPP South - Energy Price - 1H2023	5056	11/3/2036	11/3/2036	7.34	7.36	7.34	7.33	7.98	10.55	11.56	8.11	2.43	2.64	2.05	1.37	1.49	1.32	2.05	2.05	6.34	30.86	30.86	30.86	26.28	20.76	5.9	6.29
SPP South - Energy Price - 1H2023	5057	11/4/2036	11/4/2036	6.15	6.79	6.85	10.33	22.3	22.3	33.2	31.74	31.09	31.09	31.09	31.09	31.09	31.09	29.2	31.09	31.09	31.74	32.08	33.7	31.09	31.09	22.3	22.3
SPP South - Energy Price - 1H2023	5058	11/5/2036	11/5/2036	24.1	24.1	24.1	24.1	24.1	24.1	34.12	34.14	33.88	33.88	33.88	33.88	30.39	30.39	30.39	31.17	33.2	35.05	35.05	33.88	33.88	33.88	24.4	26.3
SPP South - Energy Price - 1H2023	5059	11/6/2036	11/6/2036	24.4	24.29	23.37	24.4	24.4	24.4	30.69	30.69	30.69	30.39	6	5.41	5.41	5.81	5.88	5.76	30.69	30.69	30.69	30.69	30.69	30.69	21.96	21.96
SPP South - Energy Price - 1H2023	5060	11/7/2036	11/7/2036	23.13	23.13	23.13	23.13	23.13	23.13	32.07	32.07	32.07	6.8	6	5.41	5.41	5.81	5.88	26.41	32.07	32.07	32.07	32.07	32.07	32.07	23.13	23.13
SPP South - Energy Price - 1H2023	5061	11/8/2036	11/8/2036	23.13	23.13	23.13	23.13	23.13	23.13	36.52	36.51	12.23	9.37	8.27	7.45	7.45	8.01	7.94	7.94	8.73	7.94	9.51	7.94	7.94	9.2	5.47	1.76
SPP South - Energy Price - 1H2023	5062	11/9/2036	11/9/2036	1.76	1.76	1.76	1.25	1.76	1.78	2.78	2.78	2.87	8.1	8.1	7.45	7.45	8.01	2.82	13.97	36.52	36.52	36.51	36.51	36.51	36.51	23.13	23.13

SPP South - Energy Price - 1H2023	5063	11/10/2036	11/10/2036	21.28	7.38	21.59	7.38	23.55	23.55	31.68	30.6	7.33	6.8	6	24.38	6.38	26.14	27.79	31.68	29.14	31.68	31.68	31.68	31.68	31.68	23.55	23.55
SPP South - Energy Price - 1H2023	5064	11/11/2036	11/11/2036	25.56	25.56	25.56	25.56	25.56	25.56	34.03	34.75	34.03	34.02	34.03	34.03	34.03	34.03	34.03	34.03	34.03	36.38	35.89	35.35	34.2	34.07	25.56	25.56
SPP South - Energy Price - 1H2023	5065	11/12/2036	11/12/2036	26.37	26.37	26.37	26.37	26.37	26.37	34.97	35.57	34.97	34.97	34.97	34.97	34.97	35.03	34.97	34.97	34.97	38.4	37	35.57	35.71	35.42	28.98	26.37
SPP South - Energy Price - 1H2023	5066	11/13/2036	11/13/2036	26.11	26.11	26.11	26.11	26.11	26.11	34.02	34.02	31.4	6.8	6	5.41	5.41	5.81	5.88	6	33.2	34.02	34.02	34.02	34.02	34.02	26.11	26.11
SPP South - Energy Price - 1H2023	5067	11/14/2036	11/14/2036	24.47	24.08	24.08	24.08	24.08	24.72	35.1	35.61	32.36	31.65	31.65	31.65	31.65	31.65	31.65	31.65	32.33	35.68	35.39	32.36	31.65	31.65	24.08	24.08
SPP South - Energy Price - 1H2023	5068	11/15/2036	11/15/2036	24.08	24.08	24.08	24.12	24.08	24.72	39.71	40.53	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	42.32	42.32	41.61	40.9	41.91	26.36	26.36
SPP South - Energy Price - 1H2023	5069	11/16/2036	11/16/2036	24.73	24.73	24.08	24.71	24.08	24.08	38.02	38.02	38.02	38.02	38.02	38.02	38.02	8.01	9.07	7.94	38.02	38.02	38.02	38.02	38.02	38.02	24.08	24.08
SPP South - Energy Price - 1H2023	5070	11/17/2036	11/17/2036	21.81	21.81	21.81	21.81	21.81	22.67	29.54	32.16	29.58	32.16	31.25	31.1	29.58	30.89	31.87	30.65	34.03	35.14	36.73	34.04	34.06	34.03	26.36	24.89
SPP South - Energy Price - 1H2023	5071	11/18/2036	11/18/2036	27.18	26.34	26.41	26.07	26.54	27.59	36.98	37.11	35.27	35.27	35.27	35.26	35.29	35.29	35.26	35.27	35.27	35.29	35.29	35.29	35.29	35.29	26.85	26.85
SPP South - Energy Price - 1H2023	5072	11/19/2036	11/19/2036	27.33	27.08	27.08	27.08	26.91	27.59	38.38	38.62	38.41	38.45	38.1	37.83	36.13	35.82	35.97	36.06	38.21	38.66	38.66	37.19	37.26	38.17	28.17	26.95
SPP South - Energy Price - 1H2023	5073	11/20/2036	11/20/2036	25.52	25.01	24.88	24.92	24.88	25.52	33.33	33.33	33.33	33.33	33.33	27.26	33.03	9.44	26.24	33.2	33.33	33.33	33.33	33.33	33.33	33.33	24.88	24.88
SPP South - Energy Price - 1H2023	5074	11/21/2036	11/21/2036	24.19	24.19	24.19	24.19	24.19	24.19	32.51	32.51	8.03	1.47	1.3	1.04	1.23	1.3	1.3	1.3	1.73	32.51	32.51	32.51	32.51	32.51	24.18	22.25
SPP South - Energy Price - 1H2023	5075	11/22/2036	11/22/2036	22.25	22.25	22.25	22.47	24.18	24.18	38.18	38.18	24.45	10.49	35.12	35.12	23.89	38.18	38.18	16.03	38.18	38.18	38.18	38.18	38.18	38.18	24.18	24.18
SPP South - Energy Price - 1H2023	5076	11/23/2036	11/23/2036	24.19	24.18	24.19	24.18	24.18	24.18	38.18	38.18	38.18	34.39	9.7	37.38	34.39	34.39	13.96	8.25	38.18	38.18	38.18	38.18	38.18	38.18	24.19	24.19
SPP South - Energy Price - 1H2023	5077	11/24/2036	11/24/2036	27.48	27.48	27.48	27.48	27.48	27.48	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	27.48	27.48
SPP South - Energy Price - 1H2023	5078	11/25/2036	11/25/2036	26.95	26.95	26.95	26.95	26.95	26.95	35.75	35.75	35.75	35.75	35.75	32.89	32.89	33.2	35.75	35.75	35.75	35.75	35.75	35.75	35.75	36.01	26.95	26.95
SPP South - Energy Price - 1H2023	5079	11/26/2036	11/26/2036	26.55	26.55	26.55	26.55	26.55	26.55	35.28	35.28	35.28	35.28	35.28	33.2	33.2	35.22	35.28	35.28	35.28	35.53	36	35.77	35.77	36.72	28.98	28.98
SPP South - Energy Price - 1H2023	5080	11/27/2036	11/27/2036	28.98	28.98	28.72	27.63	28.72	28.72	36.86	36.5	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.99	36.67	36.64	38.99	35.89	39.94	29.61	28.98
SPP South - Energy Price - 1H2023	5081	11/28/2036	11/28/2036	27.4	27.4	27.4	27.4	26.73	24.61	34.59	34.23	34.59	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.72	37.76	38.16	37.76	37.76	37.76	28.98	28.17
SPP South - Energy Price - 1H2023	5082	11/29/2036	11/29/2036	27.4	27.4	27.4	27.4	28.17	27.4	45.14	45.25	43.26	40.42	38.85	38.85	38.85	38.85	38.85	38.85	40.21	43.92	44.47	42.23	42.23	38.87	26.4	24.61
SPP South - Energy Price - 1H2023	5083	11/30/2036	11/30/2036	24.61	24.61	24.61	24.61	24.61	24.61	38.85	38.85	38.85	38.51	9.7	8.9	38.51	38.51	38.85	38.85	38.85	43.26	43.29	42.96	41.86	41.86	24.61	24.61
SPP South - Energy Price - 1H2023	5084	12/1/2036	12/1/2036	29.74	29.74	29.74	29.74	29.74	29.74	32.01	32.01	32.01	25.45	29.56	29.45	32.01	32.01	32.01	32.01	33.62	38.62	38.62	38.66	38.59	38.59	33.91	33.91
SPP South - Energy Price - 1H2023	5085	12/2/2036	12/2/2036	36.84	36.22	36.56	36.56	37.09	37.73	38.62	40.51	38.62	37.73	37.33	36.49	34.53	33.12	34.53	34.53	36.49	37.6	37.68	37.51	37.53	37.33	35.81	34.68
SPP South - Energy Price - 1H2023	5086	12/3/2036	12/3/2036	35.88	35.88	35.88	35.88	35.88	36.01	38.95	38.95	38.95	38.66	38.51	38.26	37.33	35.84	36.49	36.49	37.14	38.68	38.95	40.28	38.95	38.95	38.1	36.1
SPP South - Energy Price - 1H2023	5087	12/4/2036	12/4/2036	37.2	38.07	38.11	38.58	37.73	36.7	38.91	40.05	39	38.77	38.67	35.99	35.5	35.66	35.93	35.66	38.67	39.8	40.14	38.73	38.72	39.56	38.77	37.47
SPP South - Energy Price - 1H2023	5088	12/5/2036	12/5/2036	40.47	40.47	40.47	40.47	39.93	40.47	40.04	39.64	38.3	38.3	38.3	36.49	7.27	6.52	35.24	38.3	38.3	38.3	38.3	38.3	38.3	38.3	36.57	36.57
SPP South - Energy Price - 1H2023	5089	12/6/2036	12/6/2036	36.57	36.57	36.57	36.57	36.57	36.57	42.88	46.1	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	47.45	47.45	47.45	47.45	42.88	36.57	36.57
SPP South - Energy Price - 1H2023	5090	12/7/2036	12/7/2036	36.57	36.57	36.57	36.57	36.57	36.57	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	42.88	47.45	47.45	47.45	47.45	47.45	37.44	40.47
SPP South - Energy Price - 1H2023	5091	12/8/2036	12/8/2036	38.88	38.88	38.88	38.88	38.88	38.88	40.43	41.76	40.43	40.43	40.43	40.43	38.63	40.43	37.92	40.43	40.43	40.43	40.43	40.43	40.43	40.43	38.88	38.88
SPP South - Energy Price - 1H2023	5092	12/9/2036	12/9/2036	39.42	39.42	39.42	39.42	39.42	39.42	40.92	40.92	40.92	40.92	40.92	40.11	38.16	38.16	37.65	38.96	40.92	40.92	42.77	42.58	41.75	42.5	42.59	40.47
SPP South - Energy Price - 1H2023	5093	12/10/2036	12/10/2036	40.47	40.47	40.47	40.47	40.47	40.47	41.05	41.05	41.05	41.05	41.05	41.05	41.05	41.05	41.05	41.05	41.05	42.42	43.78	43.09	42.81	43.46	43.64	40.46
SPP South - Energy Price - 1H2023	5094	12/11/2036	12/11/2036	42.21	42.21	42.21	42.21	42.21	42.21	42.66	42.66	42.66	41.37	36.49	9.37	36.49	34.8	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.21	42.21
SPP South - Energy Price - 1H2023	5095	12/12/2036	12/12/2036	38.5	38.5	38.5	38.5	38.5	38.5	39.25	40.03	40.12	40.58	39.25	39.56	39.48	39.25	39.25	39.25	39.25	44.22	44.2	45.84	41.95	41.95	41.68	41.51
SPP South - Energy Price - 1H2023	5096	12/13/2036	12/13/2036	41.23	42.11	42.15	41.49	41.49	40.9	48.46	47.95	47.1	48.34	47.8	47.45	46.6	46.81	47.45	47.45	47.45	50.42	50.38	49.82	49.13	48.27	41.68	41.51
SPP South - Energy Price - 1H2023	5097	12/14/2036	12/14/2036	40.47	39.27	39.27	38.58	39.27	38.5	47.45	47.95	47.1	48.34	47.8	47.48	46.67	46.04	46.83	46.16	47.22	49.56	50.38	50.38	50.38	48.87	41.68	41.51
SPP South - Energy Price - 1H2023	5098	12/15/2036	12/15/2036	40.95	41.82	41.87	41.69	41.21	40.62	41.55	45.46	45.54	41.45	38.99	38.99	38.99	38.99	38.99	38.99	38.99	42.39	42.36	42.39	42.64	42.59	41.4	41.22
SPP South - Energy Price - 1H2023	5099	12/16/2036	12/16/2036	37.96	37.96	37.96	37.96	37.96	37.96	38.75	38.75	37.2	33.58	18.25	7.1	6.77	6.52	6.86	18.25	36.49	38.75	38.75	38.75	38.75	38.75	37.96	38.35
SPP South - Energy Price - 1H2023	5100	12/17/2036	12/17/2036	38.26	38.48	38.48	38.48	38.48	39.8	38.89	38.96	38.96	38.89	38.25	38.25	38.25	38.25	38.25	38.25	38.25	38.89	38.89	38.89	38.89	38.89	40.47	38.46
SPP South - Energy Price - 1H2023	5101	12/18/2036	12/18/2036	38.21	39.06	39.12	38.46	38.46	37.87	38.85	38.64	37.98	36.48	36.48	36.48	36.48	36.48	36.48	36.48	36.48	37.57	36.48	36.48	36.48	37.5	35.47	35.47
SPP South - Energy Price - 1H2023	5102	12/19/2036	12/19/2036	32.86	32.86	32.86	32.86	32.86	32.86	34.08	34.11	34.24	34.66	34.08	34.25	34.08	34.08	34.08	34.08	34.08	34.66	34.66	35.76	35.08	34.66	33.18	32.96
SPP South - Energy Price - 1H2023	5103	12/20/2036	12/20/2036	32.86	32.86	32.96	35.83	35.83	35.26	42.01	42.87	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	40.16	38.53	38.53	38.53	38.53	32.86	32.86
SPP South - Energy Price - 1H2023	5104	12/21/2036	12/21/2036	32.86	32.86	32.86	32.86	32.86	32.86	38.53	41.34	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	42.87	42.87	42.99	42.87	42.87	36.56	36.56
SPP South - Energy Price - 1H2023	5105	12/22/2036	12/22/2036	33.28	33.28	33.28	33.28	33.28	33.28	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.46	36.04	38.75	38.74	34.46	34.46	33.28	33.28
SPP South - Energy Price - 1H2023	5106	12/23/2036	12/23/2036	33.88	33.88	33.99	34.1	34.1	34.1	36.48	38.78	38.78	36.48	36.48	35.8	36.48	35.61	35.02	36.48	35.02	36.11	35.81	35.66	35.02	35.02	33.88	33.88
SPP South - Energy Price - 1H2023	5107	12/24/2036	12/24/2036	32.69	32.69	32.69	32.69	32.69	32.69	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	34.9	33.92	33.92	33.92	33.92	32.69	32.69
SPP South - Energy Price - 1H2023	5108	12/25/2036	12/25/2036	32.69	32.69	32.69	32.69	33.69	33.69	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	33.92	35	38.7	39.18	38.72	35.73	33.92	36.37	34.92
SPP South - Energy Price - 1H2023	5109	12/26/2036	12/26/2036	34.92	34.92	34.92	34.92	34.92	33.02	34.23	38.72	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	34.23	33.02	33.02
SPP South - Energy Price - 1H2023	5110	12/27/2036	12/27/2036	33.02	33.02	33.02	33.02	33.02	33.02	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	38.72	33.02	33.02
SPP South - Energy Price - 1H2023	5111	12/28/2036	12/28/2036	33.02	33.02	33.02	33.02	33.02	33.02	38.72	38.72	38.72	38.72	10.97	9.81	8.97	8.38	7.91	9.81	7.74	38.72	38.72	38.72	38.72	38.72	33.02	33.02
SPP South - Energy Price - 1H2023	5112	12/29/2036	12/29/2036	35.96	35.96	35.96	35.96	35.96	35.96	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	38.49	37.99	37.73	36.92	36.92	35.96	35.96
SPP South - Energy Price - 1H2023	5113	12/30/2036	12/30/2036	35.64	35.64	35.64	35.64	35.64	35.64	38.77	38.86	38.86	38.8	38.77	38.77	38.77	37.39	36.63	38.27	36.63	37.61	37.62	37.41	36.63	36.63	35.64	35.64
SPP South - Energy Price - 1H2023	5114	12/31/2036	12/31/2036	31.89	31.89	31.89	31.89	31.89	31.89	33.19	33.19	33.19	33.19	33.19	33.19	33.19	33.19	33.19	33.19	33.3	34.08	33.33	33.19	33.19	33.19	34.01	31.89
SPP South - Energy Price - 1H2023	5115	1/1/2037	1/1/2037	30.55	30.55	30.55	30.55	30.55	30.55	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9	37.83	38.34	37.83	37.66	36.9	36.9	33.14	30.55
SPP South - Energy Price - 1H2023	5116	1/2/2037	1/2/2037	36.39	36.39	36.39	36.39	36.39	36.39	43.15	43.15	43.15	43.15	43.15	39.7	39.7	43.15	43.15	43.15	43.15	43.15	43.15	43.15	43.15	43.15	36.39	36.39
SPP South - Energy Price - 1H2023	5117	1/3/2037	1/3/2037	36.39	36.39	36.39	36.39	36.39	36.39	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	47.79	36.39	36.39
SPP South - Energy Price - 1H2023	5118	1/4/2037	1/4/2037	36.39	36.39	36.39	36.39	36.39	36.39	47.79	47.79	47.79	47.79	42.67	43.98	44.64	17.93	43.98	47.79	47.79	47.79	47.79	47.79	47.79	47.79	36.39	36.39
SPP South - Energy Price - 1H2023	5119	1/5/2037	1/5/2037	33.5	33.5	33.5	33.5	33.5	33.5	40.05	40.05	40.05	40.05	40.05	40.05	21.15	8.75	6.36	9.6	33.27	40.05	40.05	40.05	40.05	40.05	33.5	33.5
SPP South - Energy Price - 1H2023	5120	1/6/2037	1/6/2037	32.96	32.96	32.96	32.96	32.96	32.96	41.85	41.87	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	41.87	46.07	42.53	41.91	41.91	36.73	33.6
SPP South - Energy Price - 1H2023	5121	1/7/2037	1/7/2037	31.99	33.6	33.6	33.6	33.6	32.29	38.45	38.45	38.45	38.45	38.45	38.45	38.45	38.45	38.45	38.45	38.45	38.45	39.32	38.45	38.45	38.45	31.99	31.99
SPP South - Energy Price - 1H2023	5122	1/8/2037	1/8/2037	31.68	31.68	31.68	31.68	31.68	31.68	38.11	38.2	38.11	38.11	38.11	38.11	38.11	38.11	38.11	38.11	38.11	38.45	38.94	38.87	38.11	38.11	31.68	31.68
SPP South - Energy Price - 1H2023	5123	1/9/2037	1/9/2037	32.67	32.67	32.67	32.67	32.67	32.67	41.25	41.65	41.63	41.62	41.25	36.67	36.33	36.29	35.65	35.65	35.66	36.91	37.33	37.65	35.65	35.65	32.67	29.38
SPP South - Energy Price - 1H2023	5124	1/10/2037	1/10/2037	29.38	29.38	29.38	29.38	29.38	29.38	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	41.94	41.94	38.58	38.58	29.38	29.38
SPP South - Energy Price - 1H2023	5125	1/11/2037	1/11/2037	29.38	29.38	29.38	29.38	29.38	29.38	38.58	38.58	38.58	38.58	11.02	9.86	9.02	8.42	7.95	8.09	38.58	38.58	38.58	38.58	38.58	38.58	29.38	29.38
SPP South - Energy Price - 1H2023	5126	1/12/2037	1/12/2037	36.97	37.43	35.2	37.43	37.43	37.95	43.95	49.93	49.94	46.88	46.88	46.58	45.49	43.95	43.95	43.95	43.95	46.88	48.77	50.86	48.77	50.45	42.74	42.85
SPP South - Energy Price - 1H2023	5127	1/13/2037	1/13/2037	42.56	43.05	42.74	42.74	40.37	44.8	50.34	54.13	52.15	50.34	50.96	50.34	49.91	48.84	49.49	50.12	46.43	46.19	46.19	46.19	46.19	46.19	35.17	35.17
SPP South - Energy Price - 1H2023	5128	1/14/2037	1/14/2037	35	37.43	37.1	37.43	37.43	40.17	48.98	48.98	48.98	46.01	46.01	45.06	45.06	45.06	46.01	45.06	46.01	48.98	49.27	49.27	48.98	48.98	40.17	37.43
SPP South - Energy Price - 1H2023	5129	1/15/2037	1/15/2037	38.05	38.05	38.05	38.05	38.05	37.43	47.53	51.49	46.99	44.04	44.04	44.04	44.04	44.04	46.99	46.46	47.48	53	56.35	49.94	47.53	46.99	38.05	38.05
SPP South - Energy Price - 1H2023	5130	1/16/2037	1/16/2037	38.05	38.05	38.05	38.05	38.05	38.05	48.56	48.56	48.56	48.56	48.56	48.56	48.56	47.97	47.62	47.53	47.65	48.56	48.56	45.39	48.56	45.39	37.43	37.43
SPP South - Energy Price - 1H2023	5131	1/17/2037	1/17/2037	37.43	37.34	34.43	34.43	34.43	34.43	45.22	45.22	49.14	48.71	45.22	45.22	49.14	49.14	45.22	45.22	45.22	51.49	51.88	51.88	51.49	51.63	39.32	39.32
SPP South - Energy Price - 1H2023	5132	1/18/2037	1/18/2037	39.06	39.32	37.43	39.32	39.22	36.33	49.14	51.63	45.22	45.22	45.22	45.22	45.22	45.22	45.22	47.59	47.45	52.61	53.7	54.27	53.7	51.88	39.22	37.62
SPP South - Energy Price - 1H2023	5133	1/19/2037	1/19/2037	37.62	37.62	37.62	37.62	38.6	38.46	47.7	51.69	44.65	44.65	42.95	39.29	39.29	42.51	6.36	39.29	39.29	40.52	44.65	44.65	44.65	43.16	33.75	33.75
SPP South - Energy Price - 1H2023	5134	1/20/2037	1/20/2037	40.41	39.13	40.41	40.41	40.41	40.41	51.88	51.88	51.88	51.88	51.88	46.87	47.73	47.73	47.73	51.88	51.88	53.09	53.09	53.09	55.01	55.48	46.52	46.52
SPP South - Energy Price - 1H2023	5135	1/21/2037	1/21/2037	47.87	47.4	46.52	47.45	44.49	48.03	54.12	58.36	54.12	54.12	52.43	52.41	49.41	49.78	47.68	49.78	52.08	54.12	54.12	54.12	54.12	54.12	42.46	42.46
SPP South - Energy Price - 1H2023	5136	1/22/2037	1/22/2037	38.04	38.04	38.04	38.04	38.04	38.04	49.06	49.06	49.06	49.06	47.51	47.49	47.05	46.96	46.83	39.29	45.13	49.06	49.06	51.3	51.98	49.06	38.04	38.04
SPP South - Energy Price - 1H2023	5137	1/23/2037	1/23/2037	37.53	37.53	37.53	37.53	37.53	37.53	48.5	48.5	39.29	7.21	7.21	7.84	7.21	6.74	7.21	6.47	6.22	48.5	53.39	52.46	53.72	52.46	43.14	43.14
SPP South - Energy Price - 1H2023	5138	1/24/2037	1/24/2037	42.08	41.51	43.14	43.14	42.08	43.14	56.64	56.64	49.27	49.27	11.02	9.86	9.02	8.42	7.95	8.09	17.9	49.27	55.38	51.66	51.75	51.88	42.68	39.27
SPP South - Energy Price - 1H2023	5139	1/25/2037	1/25/2037	39.27	42.68	42.08	42.68	42.79	42.61	56.64	56.64	49.27	49.27	49.27	49.14	49.27	49.27	49.14	24.7	49.14	53.09	55.86	56.64	53.42	49.27	37.53	37.53
SPP South - Energy Price - 1H2023	5140	1/26/2037	1/26/2037	37.43	37.43	37.43	37.43	37.43	37.13	46	46	45.91	45.91	44.16	42.24	39.29	10.68	43.61	43.72	44.73	45.91	45.91	45.91	46	46	37.13	37.43
SPP South - Energy Price - 1H2023	5141	1/27/2037	1/27/2037	37.43	36.12	36.65	37.43	37.43	37.43	44.97	47.44	46.25	44.97	44.97	44.92	42.38	42.17	39.78	40.23	42	42.08	42.25	43.08	43.73	44.06	34.99	34.08
SPP South - Energy Price - 1H2023	5142	1/28/2037	1/28/2037	32.78	33.84	33.84	33.84	34.08	35.95	42.84	42.84	42.84	41.74	39.43	40.47	40.31	40.24	39.42	40.19	39.96	42.84	42.84	42.84	42.84	43.38	37.43	37.43
SPP South - Energy Price - 1H2023	5143	1/29/2037	1/29/2037	36.57	36.57	36.57	36.57	36.57	36.57	42.75	45.9	40.98	40	40	40	40	40	40	40	40	41.77	43.66	42.75	42.75	42.75	37.43	36.57
SPP South - Energy Price - 1H2023	5144	1/30/2037	1/30/2037	37.43	37.43	37.43	35.84	37.43	37.43	43.69	43.99	42.79	42.79	42.79	40.46	39.29	39.29	39.29	7.58	39.29	42.79	42.79	42.79	42.79	42.79	35.42	35.42
SPP South - Energy Price - 1H2023	5145	1/31/2037	1/31/2037	35.42	35.42	35.42	35.42	35.42	35.42	46.51	46.51	46.51	46.51	43.9	7.76	7.56	7.48	7.41	7.41	7.12	46.51	46.51	46.51	46.68	46.51	35.42	35.42

SPP South - Energy Price - 1H2023	5146	2/1/2037	2/1/2037	23.1	23.1	23.1	23.32	23.32	23.1	34.13	34.86	34.86	34.86	34.5	33.86	33.82	33.82	33.82	33.82	33.82	33.82	33.82	34.24	33.98	33.82	23.1	23.1
SPP South - Energy Price - 1H2023	5147	2/2/2037	2/2/2037	23.85	23.85	23.85	23.85	23.85	23.85	38.09	38.09	38.09	34.23	16.26	5.25	5.12	5.06	5.01	1.04	4.82	30.41	34.03	34.52	34.03	38.09	23.85	23.82
SPP South - Energy Price - 1H2023	5148	2/3/2037	2/3/2037	22.42	22.42	22.42	22.42	22.42	22.42	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.19	36.05	36.05	22.42	22.42
SPP South - Energy Price - 1H2023	5149	2/4/2037	2/4/2037	20.96	20.96	20.96	20.96	20.96	20.96	34.74	36	35.36	35.19	34.66	33.98	33.98	33.98	33.98	33.98	33.98	33.98	35.45	35.45	35.45	35.45	23.36	22.07
SPP South - Energy Price - 1H2023	5150	2/5/2037	2/5/2037	23.24	23.24	23.24	22.82	22.11	22.11	35.6	35.6	35.6	35.6	35.6	35.6	33.26	34.48	34.84	35.12	35.6	35.6	35.6	35.6	35.6	36.29	23.82	23.82
SPP South - Energy Price - 1H2023	5151	2/6/2037	2/6/2037	23.82	23.45	23.45	23.45	23.82	23.82	37.6	37.62	37.6	36.78	35.52	35.5	35.4	35.4	35.4	35.4	35.4	35.5	37.6	37.86	37.6	37.01	23.82	23.82
SPP South - Energy Price - 1H2023	5152	2/7/2037	2/7/2037	23.82	22.68	22.74	22.71	21.96	21.96	33.49	33.7	32.61	32.15	32.15	32.06	32.15	29.85	10.61	7.29	5.05	32.15	32.15	32.42	32.15	32.15	21.96	21.96
SPP South - Energy Price - 1H2023	5153	2/8/2037	2/8/2037	21.96	21.96	21.96	21.96	21.96	21.96	32.15	32.15	32.28	32.15	32.15	32.15	32.15	32.15	32.15	32.15	32.15	32.15	32.45	32.57	32.45	32.15	21.96	21.96
SPP South - Energy Price - 1H2023	5154	2/9/2037	2/9/2037	20.39	20.39	20.39	20.39	20.39	20.39	33.56	33.76	33.16	33.16	33.16	30.51	30.51	5.06	5.01	30.51	30.51	33.16	33.16	33.38	34	33.49	20.45	20.39
SPP South - Energy Price - 1H2023	5155	2/10/2037	2/10/2037	20.46	20.46	20.46	20.46	20.46	20.46	33.27	34.75	33.27	33.26	33.26	33.27	6.85	5.06	5.01	5.01	4.82	33.26	33.27	33.27	33.27	33.27	20.46	20.46
SPP South - Energy Price - 1H2023	5156	2/11/2037	2/11/2037	21.05	21.05	21.05	21.05	21.05	21.05	34.09	34.09	34.09	24.39	0.92	1.04	1.04	0.96	1.04	1.04	1.04	34.09	34.09	35.52	35.5	35.52	22.52	22.15
SPP South - Energy Price - 1H2023	5157	2/12/2037	2/12/2037	22	21.41	21.46	21.62	21.42	21.4	34.83	35.44	33.84	33.84	33.84	33.84	33.84	33.84	31.77	33.63	33.84	33.84	33.84	34.17	34.77	34.17	20.87	20.87
SPP South - Energy Price - 1H2023	5158	2/13/2037	2/13/2037	20.19	20.19	20.19	20.19	20.19	20.67	32.88	32.88	32.88	31.68	28.87	28.2	28.2	5.06	8.67	5.01	7.71	32.88	32.88	32.88	32.88	32.88	20.19	20.19
SPP South - Energy Price - 1H2023	5159	2/14/2037	2/14/2037	20.19	20.19	20.19	20.19	20.19	20.19	29.56	32.13	29.56	29.56	29.56	29.56	29.56	29.56	26.47	23.07	23.3	29.56	29.56	29.56	29.56	29.56	20.19	20.19
SPP South - Energy Price - 1H2023	5160	2/15/2037	2/15/2037	20.19	20.19	20.19	20.19	20.19	20.19	29.56	29.71	29.56	29.56	29.56	29.56	29.56	29.56	29.56	29.56	29.56	29.56	29.56	29.98	32.89	32.89	21.24	20.67
SPP South - Energy Price - 1H2023	5161	2/16/2037	2/16/2037	23.82	23.82	23.82	23.82	26.59	26.59	43.61	43.61	43.61	43.61	43.61	43.61	42.11	40.99	41.47	40.94	40.75	43.6	43.6	43.6	43.2	40.2	23.8	23.8
SPP South - Energy Price - 1H2023	5162	2/17/2037	2/17/2037	23.2	23.2	23.2	23.2	23.2	23.2	38.17	38.23	38.17	37.98	37.7	31.59	1.93	31.59	0.92	26.9	31.59	35.52	38.17	38.17	38.17	38.17	23.2	23.2
SPP South - Energy Price - 1H2023	5163	2/18/2037	2/18/2037	31.21	31.21	31.21	31.21	31.21	31.21	49.65	49.31	26.2	5.17	5.62	0.98	0.97	0.96	0.92	1.04	0.98	4.46	42.45	49.53	49.65	44.91	30.39	30.39
SPP South - Energy Price - 1H2023	5164	2/19/2037	2/19/2037	25.06	25.06	25.06	25.06	25.06	25.06	40.84	40.84	23.72	25.32	7.28	0.98	0.97	0.96	0.92	1.04	3.52	40.28	40.84	40.84	41.32	41.06	25.06	25.06
SPP South - Energy Price - 1H2023	5165	2/20/2037	2/20/2037	23.82	23.82	22.83	23.82	23.82	23.82	38.24	38.48	37.65	37.46	5.62	5.25	5.12	5.06	5.01	5.01	5.25	33.26	37.17	37.65	37.65	37.65	22.83	22.83
SPP South - Energy Price - 1H2023	5166	2/21/2037	2/21/2037	22.83	22.83	22.83	22.83	22.83	22.83	33.42	34.86	33.68	33.42	33.42	33.42	33.42	27.75	33.18	33.42	33.42	33.42	33.56	33.83	34.27	33.67	23	22.83
SPP South - Energy Price - 1H2023	5167	2/22/2037	2/22/2037	22.83	22.83	22.83	22.83	22.83	22.83	33.49	33.7	33.68	33.42	33.42	33.42	31.2	5.31	5.25	5.26	5.05	32.56	33.42	33.42	33.42	33.42	22.83	22.83
SPP South - Energy Price - 1H2023	5168	2/23/2037	2/23/2037	21.16	21.16	21.16	21.16	21.16	21.16	35.77	36.16	35.26	35.26	35.26	35.26	35.26	35.26	35.26	35.26	35.26	35.47	36.16	36.16	35.74	35.88	23.59	23.59
SPP South - Energy Price - 1H2023	5169	2/24/2037	2/24/2037	23.82	23.82	23.82	23.82	23.82	23.82	37.95	41.74	37.39	33.26	33.26	33.26	33.26	33.26	33.26	33.18	33.26	33.26	37.39	37.39	36.16	37.39	22.65	22.65
SPP South - Energy Price - 1H2023	5170	2/25/2037	2/25/2037	20.66	20.66	20.66	20.66	20.66	20.66	35.56	35.41	34.54	31.37	19.42	20.97	5.38	5.64	5.79	6.02	5.9	29.57	34.49	34.54	34.49	34.39	20.66	20.66
SPP South - Energy Price - 1H2023	5171	2/26/2037	2/26/2037	21.87	21.87	21.87	21.87	21.87	21.87	36.27	36.27	36.27	33.37	33.37	36.27	33.37	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.58	36.27	23.82	23.78
SPP South - Energy Price - 1H2023	5172	2/27/2037	2/27/2037	23.78	23.78	23.78	23.78	23.78	23.78	36.51	36.36	36.1	36.07	36.01	36.05	35.49	35.49	35.49	35.49	35.49	35.56	36.1	35.91	35.49	35.49	21.33	21.33
SPP South - Energy Price - 1H2023	5173	2/28/2037	2/28/2037	21.33	21.33	21.33	21.33	21.33	21.33	31.22	31.22	0.94	0.86	0.9	0.83	0.96	0.87	0.99	0.97	0.94	5.95	31.22	31.22	31.22	31.22	21.33	21.33
SPP South - Energy Price - 1H2023	5174	3/1/2037	3/1/2037	14.43	14.43	14.43	14.43	14.43	14.43	22.22	22.22	4.56	4.06	3.99	0.61	0.7	0.63	4.41	4.06	4.06	4.33	22.22	22.22	22.22	22.22	14.43	14.43
SPP South - Energy Price - 1H2023	5175	3/2/2037	3/2/2037	16.48	16.48	16.48	16.48	16.48	18.29	26.74	24.12	4.07	3.95	18.44	18.76	18.44	20.04	10.74	6.26	17.37	24.13	28.38	29.34	26.66	29.34	18.47	16.48
SPP South - Energy Price - 1H2023	5176	3/3/2037	3/3/2037	15.62	15.62	15.62	15.62	15.62	15.62	25.34	23.3	12.02	3.95	0.63	0.54	0.62	0.63	0.64	0.63	0.63	3.86	22.6	25.34	25.34	25.34	15.62	15.62
SPP South - Energy Price - 1H2023	5177	3/4/2037	3/4/2037	17.06	17.06	17.06	17.06	17.06	17.06	27.36	27.36	25.71	22.6	23.31	23.31	23.31	23.31	22.6	24.32	27.36	27.36	27.62	27.64	27.36	27.36	17.06	17.06
SPP South - Energy Price - 1H2023	5178	3/5/2037	3/5/2037	16.78	16.71	16.63	16.63	16.63	16.71	27.25	27.33	27.45	26.75	26.75	26.75	25.09	24.84	26.75	4.09	5.4	22.6	26.75	27.03	27.34	26.86	16.63	16.63
SPP South - Energy Price - 1H2023	5179	3/6/2037	3/6/2037	16.48	16.48	16.48	16.48	16.48	16.48	25	24.84	24.31	24.31	24.31	22.36	22.6	17.61	3.93	4.09	22.01	24.31	24.31	24.31	24.31	24.31	14.89	14.89
SPP South - Energy Price - 1H2023	5180	3/7/2037	3/7/2037	14.89	14.89	14.89	14.89	14.89	14.89	22.93	22.93	16.89	4.43	0.66	0.61	21.2	21.2	22.93	22.93	22.93	23.05	25.36	25.36	25.36	23.22	14.89	14.89
SPP South - Energy Price - 1H2023	5181	3/8/2037	3/8/2037	14.89	14.89	14.89	14.89	14.89	14.89	23.22	22.93	22.93	22.93	22.93	22.93	22.93	4.92	4.41	21.43	22.93	22.93	23.31	22.93	22.93	22.93	14.89	14.89
SPP South - Energy Price - 1H2023	5182	3/9/2037	3/9/2037	13.87	13.87	13.87	13.87	13.87	13.87	21.77	21.77	21.77	19.38	19.14	19.14	3.66	19.14	19.84	19.49	19.49	16.58	21.61	21.77	21.77	21.77	13.87	13.87
SPP South - Energy Price - 1H2023	5183	3/10/2037	3/10/2037	14.16	14.16	14.16	14.16	14.16	14.16	23.02	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.64	22.17	22.17	14.16	14.16
SPP South - Energy Price - 1H2023	5184	3/11/2037	3/11/2037	14.6	14.6	14.6	14.6	14.6	14.6	22.79	22.79	22.79	22.6	22.79	22.79	22.79	22.79	22.79	22.79	22.79	22.79	23.82	24.19	23.6	22.79	14.6	14.6
SPP South - Energy Price - 1H2023	5185	3/12/2037	3/12/2037	15.25	15.25	15.27	15.25	15.75	15.75	24.75	24.14	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	15.25	15.25
SPP South - Energy Price - 1H2023	5186	3/13/2037	3/13/2037	14.5	14.5	14.5	14.5	14.5	14.5	22.65	22.65	22.65	22.65	22.65	23.45	23.28	23.16	22.77	23.45	23.45	23.72	23.68	23.29	22.65	22.65	14.5	14.5
SPP South - Energy Price - 1H2023	5187	3/14/2037	3/14/2037	14.5	14.5	14.5	14.5	14.5	14.5	22.32	22.32	22.32	4.43	0.66	0.61	0.7	0.63	0.72	0.7	0.7	4.33	22.32	22.32	22.32	22.32	14.5	14.5
SPP South - Energy Price - 1H2023	5188	3/15/2037	3/15/2037	14.5	14.5	14.5	14.5	14.5	14.5	22.32	22.32	23.42	22.32	22.32	22.46	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	14.5	14.5
SPP South - Energy Price - 1H2023	5189	3/16/2037	3/16/2037	15.14	15.14	15.14	15.14	15.14	15.14	23.55	23.55	24.13	23.55	23.55	23.55	23.24	23.55	23.55	23.55	23.55	23.55	23.55	23.55	23.55	23.55	15.14	15.14
SPP South - Energy Price - 1H2023	5190	3/17/2037	3/17/2037	14.93	14.93	14.93	14.93	14.93	14.93	23.25	23.24	22.26	8.42	3.93	3.93	3.66	3.83	3.93	4.09	4.01	3.86	21.42	22.61	23.25	23.25	14.93	14.93
SPP South - Energy Price - 1H2023	5191	3/18/2037	3/18/2037	15.04	15.04	15.04	15.04	15.04	15.04	23.4	23.4	22.6	3.95	3.56	0.54	0.62	3.56	3.56	3.56	4.01	3.86	23.22	23.4	23.4	23.4	15.04	15.04
SPP South - Energy Price - 1H2023	5192	3/19/2037	3/19/2037	15.99	15.99	15.99	15.99	16.04	16.32	25.7	25.9	26.08	25.34	24.73	24.91	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	15.99	15.99
SPP South - Energy Price - 1H2023	5193	3/20/2037	3/20/2037	15.53	15.53	14.77	15.53	15.53	15.1	22.02	4.29	0.59	0.56	0.59	0.54	0	0.56	1.9	2.29	5.34	23.26	24.09	24.09	24.09	24.09	15.53	15.53
SPP South - Energy Price - 1H2023	5194	3/21/2037	3/21/2037	15.53	15.53	15.53	15.53	15.53	15.53	23.91	23.91	23.91	23.91	23.91	23.91	7.26	22	22.11	9.05	9.05	22	23.91	23.91	23.91	23.91	15.53	15.53
SPP South - Energy Price - 1H2023	5195	3/22/2037	3/22/2037	15.53	15.53	15.53	15.53	15.53	15.53	23.91	23.91	23.91	23.91	6.65	4.01	6.42	4.3	6.42	4.59	6.42	23.91	23.91	23.91	23.91	23.91	15.53	15.53
SPP South - Energy Price - 1H2023	5196	3/23/2037	3/23/2037	15.87	15.87	15.87	15.87	15.87	15.87	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.93	24.56	24.56	15.87	15.87
SPP South - Energy Price - 1H2023	5197	3/24/2037	3/24/2037	15.31	15.31	15.31	15.31	15.31	15.31	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.79	24.13	24.13	24.09	24.13	24.17	24.15	24.15	15.68	15.31
SPP South - Energy Price - 1H2023	5198	3/25/2037	3/25/2037	15.33	14.79	14.76	14.76	14.76	14.87	23.01	23.01	23.01	23.01	23.01	23.01	23.01	22.6	22.84	23.01	23.01	23.01	23.01	23.01	23.01	23.01	14.76	14.76
SPP South - Energy Price - 1H2023	5199	3/26/2037	3/26/2037	13.94	13.94	13.94	13.94	13.94	13.94	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	22.23	21.86	22.15	13.94	13.94
SPP South - Energy Price - 1H2023	5200	3/27/2037	3/27/2037	13.04	13.04	13.04	13.04	13.04	13.04	20.61	20.61	7.8	9.22	9.22	5.56	5.71	9.22	9.22	20.61	20.61	20.61	20.61	21.12	21.07	20.76	13.04	13.04
SPP South - Energy Price - 1H2023	5201	3/28/2037	3/28/2037	13.04	13.04	13.04	13.04	13.04	13.04	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.71	20.71	20.07	20.07	13.04	13.04
SPP South - Energy Price - 1H2023	5202	3/29/2037	3/29/2037	13.04	13.04	13.04	13.04	13.04	13.04	20.07	20.07	20.07	5.72	0	0	0	0	0	0	0.73	6.43	20.07	7.13	7.39	7.32	4.63	4.13
SPP South - Energy Price - 1H2023	5203	3/30/2037	3/30/2037	4.72	4.54	4.13	4.16	4.29	4.16	6.2	5.5	0.81	0.74	5.06	5.7	8.74	8.74	8.74	7.12	21.16	21.16	21.16	21.16	21.16	21.16	13.43	13.43
SPP South - Energy Price - 1H2023	5204	3/31/2037	3/31/2037	14.11	14.11	14.11	14.11	14.11	14.11	22.11	22.11	22.11	22.11	17.3	0.81	0.66	7.91	0.69	5.76	22.11	22.11	22.11	22.11	22.11	22.11	14.11	14.11
SPP South - Energy Price - 1H2023	5205	4/1/2037	4/1/2037	7.95	7.95	7.95	7.75	7.95	7.95	9.7	9.53	8.46	2.34	2.54	2.09	2.17	2.2	2.34	2.35	2.43	2.34	9.2	9.22	8.83	2.66	2.43	2.17
SPP South - Energy Price - 1H2023	5206	4/2/2037	4/2/2037	2.48	3.31	2.17	7.97	8.13	8.14	9.22	9.9	9.9	8.75	8.49	2.09	8.49	9.22	8.49	2.35	9.22	9.9	9.22	9.22	9.22	8.8	7.63	7.63
SPP South - Energy Price - 1H2023	5207	4/3/2037	4/3/2037	7.63	7.63	7.63	7.63	7.63	7.63	9.22	9.22	9.22	9.34	9.22	8.19	7.37	8.15	8.5	8.19	4.67	8.19	8.9	9.34	9.34	9.34	7.63	7.63
SPP South - Energy Price - 1H2023	5208	4/4/2037	4/4/2037	7.63	7.63	7.63	7.63	7.63	7.63	10.89	10.89	10.89	6.18	6.72	3.53	3.26	2.96	2.84	2.84	3.26	10.89	10.89	10.89	10.89	10.89	7.63	7.63
SPP South - Energy Price - 1H2023	5209	4/5/2037	4/5/2037	7.63	7.63	7.63	7.63	7.63	7.63	10.89	10.02	3.89	6.32	10.89	10.02	10.89	10.89	10.02	10.89	10.89	10.89	10.89	10.89	10.89	10.89	7.63	7.63
SPP South - Energy Price - 1H2023	5210	4/6/2037	4/6/2037	7.45	7.45	7.45	7.45	7.45	7.45	9.15	9.15	9.15	9.15	9.15	4.67	7.55	4.24	7.55	7.55	7.55	7.55	9.15	9.15	9.15	9.15	7.45	7.45
SPP South - Energy Price - 1H2023	5211	4/7/2037	4/7/2037	7.7	7.09	7.09	7.7	7.7	7.7	9.22	4.31	2.16	2.08	2.07	2.09	2.17	3.16	2.91	2.91	2.91	9.43	9.43	9.43	9.43	9.43	7.7	7.7
SPP South - Energy Price - 1H2023	5212	4/8/2037	4/8/2037	7.89	7.89	7.89	7.89	7.89	7.89	9.63	9.63	7.79	2.08	8.29	8.29	8.29	8.24	9.63	9.63	9.63	9.63	9.63	9.63	9.63	9.63	7.89	7.89
SPP South - Energy Price - 1H2023	5213	4/9/2037	4/9/2037	7.79	7.79	7.79	7.79	7.79	7.79	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	7.79	7.79
SPP South - Energy Price - 1H2023	5214	4/10/2037	4/10/2037	7.72	7.72	7.72	7.72	7.72	7.78	9.45	9.45	2.73	0.65	0.34	0.33	0.33	0.26	0.28	0.33	0.26	2.34	2.22	9.22	9.22	9.45	7.72	7.72
SPP South - Energy Price - 1H2023	5215	4/11/2037	4/11/2037	5.67	5.67	5.66	5.67	5.66	6.15	8.79	3.01	0.45	0	0	0	0	0	0	0	0.35	3.14	3.48	11.03	11.03	11.03	7.72	7.72
SPP South - Energy Price - 1H2023	5216	4/12/2037	4/12/2037	7.72	7.72	7.72	7.72	7.72	7.72	11.03	11.03	4.54	3.34	3.36	3.35	2.91	3.34	3.34	3.34	11.03	11.03	12.08	11.91	11.03	11.03	7.72	7.72
SPP South - Energy Price - 1H2023	5217	4/13/2037	4/13/2037	7.67	7.67	7.67	7.67	7.67	7.67	9.39	9.39	9.39	9.22	4.26	4.63	2.17	2.2	2.2	2.92	2.92	4.26	9.39	9.22	9.39	9.39	7.67	7.67
SPP South - Energy Price - 1H2023	5218	4/14/2037	4/14/2037	7.76	7.76	7.76	7.76	7.76	7.76	9.49	9.49	9.49	8.98	3.29	2.35	2.17	2.2	2.2	2.35	2.35	3.71	9.49	9.49	9.49	9.49	7.76	7.76
SPP South - Energy Price - 1H2023	5219	4/15/2037	4/15/2037	7.84	7.84	7.84	7.84	7.84	7.84	9.57	2.7	0.33	0.3	0.3	0.33	0.27	0.26	0.28	0.3	2.92	8.49	9.22	9.22	9.22	8.49	7.84	7.84
SPP South - Energy Price - 1H2023	5220	4/16/2037	4/16/2037	7.74	7.74	7.74	7.74	7.74	7.74	9.22	3.29	2.16	2.08	2.07	2.09	2.17	2.17	2.2	2.35	2.43	2.34	2.24	9.27	8.82	9.22	7.74	7.74
SPP South - Energy Price - 1H2023	5221	4/17/2037	4/17/2037	7.57	7.57	7.57	7.57	7.57	8.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.31	9.29	7.57	7.57
SPP South - Energy Price - 1H2023	5222	4/18/2037	4/18/2037	7.57	7.57	7.57	7.57	7.57	7.57	10.82	10.82	10.82	10.82	10.82	10.82	10.82	10.57	10.57	10.82	10.82	10.82	10.82	10.82	10.82	10.82	7.57	7.57
SPP South - Energy Price - 1H2023	5223	4/19/2037	4/19/2037	7.57	7.57	7.57	7.57	7.57	7.57	10.82	10.82	10.82	10.57	10.57	10.82	10.82	10.82	10.82	11.11	10.93	11.14	11.49	10.82	10.82	10.82	7.57	7.57
SPP South - Energy Price - 1H2023	5224	4/20/2037	4/20/2037	7.4	7.4	7.4	7.4	7.4	7.4	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.72	9.75	9.78	9.75	9.72	8.1	7.98
SPP South - Energy Price - 1H2023	5225	4/21/2037	4/21/2037	7.98	7.98	7.98	7.98	7.98	7.91	9.24	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.46	9.38	9.81	9.24	7.88	7.78
SPP South - Energy Price - 1H2023	5226	4/22/2037	4/22/2037	7.32	7.79	7.39	7.79	7.79	7.79	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	7.32	7.32
SPP South - Energy Price - 1H2023	5227	4/23/2037	4/23/2037	7.27	7.27	7.27	7.27	7.27	7.27	8.95	8.95	8.95	8.41	7.81	7.74	7.74	3.94	4.37	4.42	7.74	7.81	8.95	8.95	8.95	8.95	7.27	7.27
SPP South - Energy Price - 1H2023	5228	4/24/2037	4/24/2037	7.2	7.2	7.2	7.2	7.2	7.2	8.88	8.88	8.68	8.88	7.01	7.05	2.47	2.47	2.2	2.47	2.47	2.47	7.75	7.9	2.69	2.66	2.43	2.17

SPP South - Energy Price - 1H2023	5229	4/25/2037	4/25/2037	2.48	2.39	2.17	2.19	2.26	2.19	3.17	3.01	2.9	2.79	0.45	0.44	0.36	0.35	0.38	0.35	0.44	3.14	2.97	10.29	10.29	10.29	7.2	7.2
SPP South - Energy Price - 1H2023	5230	4/26/2037	4/26/2037	7.2	7.2	7.2	7.2	7.2	7.2	10.29	3.12	2.9	2.79	2.77	2.8	2.91	2.91	2.95	3.16	3.26	4.96	10.29	10.29	10.29	10.29	7.2	7.2
SPP South - Energy Price - 1H2023	5231	4/27/2037	4/27/2037	7.47	7.47	7.47	7.47	7.47	7.47	8.36	3.94	1.16	1.11	1.25	1.46	1.99	1.99	2.55	2.55	2.54	2.34	9.17	9.17	9.17	9.17	7.47	7.47
SPP South - Energy Price - 1H2023	5232	4/28/2037	4/28/2037	7.64	7.64	7.64	7.64	7.64	7.64	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.8	9.8	9.81	9.8	9.8	9.8	9.8	9.8	7.87	7.69
SPP South - Energy Price - 1H2023	5233	4/29/2037	4/29/2037	7.61	7.69	7.69	7.64	7.61	7.83	9.32	9.32	9.32	9.43	9.32	9.32	9.42	9.41	9.64	9.82	9.82	9.82	9.82	9.82	9.81	9.51	7.61	7.61
SPP South - Energy Price - 1H2023	5234	4/30/2037	4/30/2037	7.3	7.36	7.3	7.34	7.44	7.5	8.99	8.99	8.99	8.99	7.95	8.99	8.99	8.99	8.99	3.11	7.15	8.99	8.99	8.99	8.99	8.99	7.3	7.3
SPP South - Energy Price - 1H2023	5235	5/1/2037	5/1/2037	10.72	10.72	10.72	10.72	10.72	10.72	9.14	1.5	1.29	0.34	1.4	1.63	1.63	1.5	1.5	4.54	9.14	9.14	9.14	9.14	9.14	9.14	10.72	10.72
SPP South - Energy Price - 1H2023	5236	5/2/2037	5/2/2037	10.72	10.72	10.72	10.72	10.72	10.72	12.92	3.32	3.32	3.32	3.32	3.32	3.32	3.32	4.21	7.8	8.14	12.92	12.92	12.92	12.92	12.92	10.72	10.72
SPP South - Energy Price - 1H2023	5237	5/3/2037	5/3/2037	10.72	10.72	10.72	10.72	10.72	10.72	12.92	3.29	2.14	2.05	2.89	2.71	3.32	3.7	4.59	12.91	12.91	12.92	12.92	12.92	12.92	12.92	10.72	10.72
SPP South - Energy Price - 1H2023	5238	5/4/2037	5/4/2037	10.45	10.45	10.45	10.45	10.6	10.72	9.23	8.67	1.4	3.75	3.71	3.75	3.44	3.75	4.63	4.39	4.26	8.94	8.94	8.94	9.54	9.1	10.78	10.45
SPP South - Energy Price - 1H2023	5239	5/5/2037	5/5/2037	10.78	10.78	10.78	10.78	10.78	11.02	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.18	9.42	9.18	10.78	10.78
SPP South - Energy Price - 1H2023	5240	5/6/2037	5/6/2037	11.34	11.34	11.34	11.34	11.34	11.55	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.7	9.62	9.81	11.34	11.34
SPP South - Energy Price - 1H2023	5241	5/7/2037	5/7/2037	11.51	11.51	11.51	11.51	11.51	11.85	9.73	9.73	4.11	4.11	4.02	3.89	3.08	4.11	9.73	8.95	9.73	9.73	9.73	9.73	9.73	9.73	11.51	11.51
SPP South - Energy Price - 1H2023	5242	5/8/2037	5/8/2037	11.39	11.39	11.51	11.45	11.51	11.73	9.64	9.64	9.64	9.64	9.64	9.64	10.84	9.72	9.64	10.6	10.59	9.93	11.01	10.66	11.01	10.6	12.46	12.46
SPP South - Energy Price - 1H2023	5243	5/9/2037	5/9/2037	11.46	11.75	11.48	11.46	11.61	11.73	14.19	15	14.9	15	14.15	13.72	13.72	13.8	15	15	13.72	13.8	15	15.01	15.01	15	12.46	12.46
SPP South - Energy Price - 1H2023	5244	5/10/2037	5/10/2037	11.39	11.49	11.48	11.45	11.61	11.73	14.19	13.72	13.72	13.72	13.72	13.72	13.72	13.72	14.15	14.15	13.72	14.91	15	14.15	13.72	13.72	11.39	11.39
SPP South - Energy Price - 1H2023	5245	5/11/2037	5/11/2037	11.54	11.54	11.54	11.54	11.77	11.54	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	11.54	11.54
SPP South - Energy Price - 1H2023	5246	5/12/2037	5/12/2037	11.71	11.71	11.71	11.71	11.71	11.71	9.87	9.87	9.87	9.87	9.08	3.37	1.86	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	11.71	11.71
SPP South - Energy Price - 1H2023	5247	5/13/2037	5/13/2037	11.83	11.83	11.83	11.83	11.83	11.83	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	9.97	10.35	10.21	10.33	11.83	11.83
SPP South - Energy Price - 1H2023	5248	5/14/2037	5/14/2037	12.35	12.11	11.97	11.97	11.97	12.35	10.07	10.07	10.07	10.07	10.07	10.07	10.33	10.07	10.33	10.72	10.07	10.33	10.33	10.33	10.86	10.28	12.06	11.97
SPP South - Energy Price - 1H2023	5249	5/15/2037	5/15/2037	11.92	12.06	12.06	12.02	12.06	12.13	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.05	10.04	12.04	11.92
SPP South - Energy Price - 1H2023	5250	5/16/2037	5/16/2037	11.92	12.06	11.92	11.92	11.92	11.92	14.36	14.36	14.56	14.55	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	11.92	11.92
SPP South - Energy Price - 1H2023	5251	5/17/2037	5/17/2037	11.92	11.92	11.92	11.92	11.92	11.92	14.36	14.36	14.36	14.36	4.71	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	11.92	11.92
SPP South - Energy Price - 1H2023	5252	5/18/2037	5/18/2037	12.28	12.28	12.28	12.28	12.28	12.28	10.3	10.3	10.3	9.47	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	12.28	12.28
SPP South - Energy Price - 1H2023	5253	5/19/2037	5/19/2037	12.34	12.34	12.34	12.34	12.34	12.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	12.34	12.34
SPP South - Energy Price - 1H2023	5254	5/20/2037	5/20/2037	12.25	12.25	12.25	12.25	12.25	12.25	10.27	1.86	1.29	1.24	1.86	1.63	1.86	4.29	3.1	2.86	2.84	9.05	9.46	10.27	10.27	10.27	12.25	12.25
SPP South - Energy Price - 1H2023	5255	5/21/2037	5/21/2037	12.12	12.12	12.12	12.12	12.12	12.12	10.18	1.86	1.71	1.8	1.4	1.86	1.86	10.18	9.36	9.36	10.18	10.18	10.18	10.18	10.19	10.18	12.12	12.12
SPP South - Energy Price - 1H2023	5256	5/22/2037	5/22/2037	11.6	11.6	11.6	11.6	11.6	11.6	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	11.6	11.6
SPP South - Energy Price - 1H2023	5257	5/23/2037	5/23/2037	11.6	11.6	11.6	11.6	11.6	11.6	13.74	10.98	12.29	2.05	12.29	13.97	13.97	13.97	13.97	13.98	14.93	14.93	14.93	14.93	13.98	13.98	11.6	11.6
SPP South - Energy Price - 1H2023	5258	5/24/2037	5/24/2037	11.6	11.6	11.6	11.6	11.6	11.6	13.97	13.97	13.97	13.98	13.98	13.97	13.97	13.97	13.97	13.74	6.51	13.74	13.98	13.98	13.98	13.98	11.6	11.6
SPP South - Energy Price - 1H2023	5259	5/25/2037	5/25/2037	11.6	11.6	11.6	11.6	11.6	11.6	9.8	8.29	4.83	8.29	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	10.33	9.93	9.8	12.07	11.6
SPP South - Energy Price - 1H2023	5260	5/26/2037	5/26/2037	12.07	12.07	12.07	12.07	12.07	12.07	10.14	10.14	10.14	10.14	10.14	10.14	10.14	10.14	10.14	10.96	10.14	10.99	10.99	11.57	11.57	11.57	13.13	12.17
SPP South - Energy Price - 1H2023	5261	5/27/2037	5/27/2037	12.79	13.07	13.15	13.07	12.51	13.07	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	12.35	12.35
SPP South - Energy Price - 1H2023	5262	5/28/2037	5/28/2037	12.43	12.43	12.43	12.43	12.43	12.43	10.41	10.41	10.41	10.4	10.33	10.33	10.41	10.41	10.41	10.41	10.41	10.41	10.41	10.41	10.41	10.41	12.43	12.43
SPP South - Energy Price - 1H2023	5263	5/29/2037	5/29/2037	12.65	12.65	12.65	3.51	12.65	12.65	10.33	10.33	10.33	0.64	10.33	10.26	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	12.65	12.65
SPP South - Energy Price - 1H2023	5264	5/30/2037	5/30/2037	12.65	12.65	12.65	12.65	12.65	12.65	15.23	15.23	15.23	15.23	15.24	15.24	15.23	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	12.65	12.65
SPP South - Energy Price - 1H2023	5265	5/31/2037	5/31/2037	12.65	12.65	12.65	12.65	12.65	12.65	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	16.21	15.24	12.65	12.65
SPP South - Energy Price - 1H2023	5266	6/1/2037	6/1/2037	20.48	20.48	20.48	20.48	20.48	20.48	21.67	21.67	18.9	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.96	22.21	21.67	20.61	20.48
SPP South - Energy Price - 1H2023	5267	6/2/2037	6/2/2037	19.93	19.93	19.93	19.93	19.93	19.93	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	23	21.16	23.11	24.18	24.18	24.18	23.47	21.78	21.78
SPP South - Energy Price - 1H2023	5268	6/3/2037	6/3/2037	20.68	20.68	20.6	20.3	20.66	20.68	21.5	21.38	21.38	21.38	21.38	21.38	21.38	21.38	21.74	21.74	21.38	23.33	22.76	21.74	22.01	21.38	20.36	20.17
SPP South - Energy Price - 1H2023	5269	6/4/2037	6/4/2037	19.01	19.02	19.01	19.01	19.02	19.33	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.38	20.68	20.3	19.01	19.01
SPP South - Energy Price - 1H2023	5270	6/5/2037	6/5/2037	18.86	18.86	18.86	18.86	18.86	18.86	20.17	20.17	20.17	20.17	20.17	21.48	20.17	20.17	21.48	20.17	20.17	20.17	21.48	21.48	21.52	23.07	20.58	19.54
SPP South - Energy Price - 1H2023	5271	6/6/2037	6/6/2037	18.86	18.86	18.86	18.86	18.86	19.06	18.93	19.04	18.93	18.93	18.93	18.93	18.93	19.7	20.66	20.66	19.7	20.57	19.7	18.93	20.21	20.27	18.89	18.86
SPP South - Energy Price - 1H2023	5272	6/7/2037	6/7/2037	18.86	18.86	18.86	19.63	20.32	20.07	19.02	18.93	18.93	18.93	18.93	18.93	18.93	18.93	18.93	18.93	18.93	18.93	18.93	19.86	20.66	20.66	18.99	20.43
SPP South - Energy Price - 1H2023	5273	6/8/2037	6/8/2037	22.48	20.68	20.68	20.68	20.82	21.03	21.93	21.88	21.98	22.13	22.15	22.33	22.13	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.95	20.68	20.68
SPP South - Energy Price - 1H2023	5274	6/9/2037	6/9/2037	22.46	22.52	22.46	22.45	22.67	22.77	23.56	23.51	23.48	23.48	23.48	23.48	23.48	23.48	25.14	25.14	25.14	23.48	24.86	25.22	25.2	25.14	22.99	22.45
SPP South - Energy Price - 1H2023	5275	6/10/2037	6/10/2037	22.99	22.99	22.99	22.99	23.22	23.31	24.07	24.02	25.23	25.17	25.17	25.21	25.09	25.23	25.67	25.25	25.23	25.23	23.99	25.23	25.23	25.23	23.13	23.13
SPP South - Energy Price - 1H2023	5276	6/11/2037	6/11/2037	22.58	22.59	22.53	22.62	22.79	23	23.54	23.57	23.54	23.54	25.2	23.8	25.23	26.28	26.28	27.74	26.85	25.5	26	26.28	26.28	25.21	22.51	22.51
SPP South - Energy Price - 1H2023	5277	6/12/2037	6/12/2037	21.05	21.1	20.99	20.94	21.04	21.13	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	22.27	22.47	22.42	20.98	20.73
SPP South - Energy Price - 1H2023	5278	6/13/2037	6/13/2037	20.73	20.73	20.73	20.73	20.73	20.73	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.73	20.73
SPP South - Energy Price - 1H2023	5279	6/14/2037	6/14/2037	20.73	20.73	20.73	20.73	20.73	20.73	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	22.62	20.81	20.73	20.73
SPP South - Energy Price - 1H2023	5280	6/15/2037	6/15/2037	22.59	22.59	22.59	22.59	22.59	22.59	23.62	23.62	23.62	23.62	23.62	23.45	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	22.59	22.59
SPP South - Energy Price - 1H2023	5281	6/16/2037	6/16/2037	21.84	21.84	21.84	21.84	21.84	21.84	22.92	22.92	21.09	22.92	22.92	22.92	22.92	22.92	22.92	22.92	22.92	22.92	22.92	22.92	23.34	22.92	21.91	21.91
SPP South - Energy Price - 1H2023	5282	6/17/2037	6/17/2037	21.91	21.71	21.91	21.91	21.91	22.01	22.78	22.78	22.78	22.78	22.78	22.78	22.78	24.77	22.78	22.78	22.78	25.05	26	26	26	26	24.7	21.93
SPP South - Energy Price - 1H2023	5283	6/18/2037	6/18/2037	22.09	22.09	22.01	22.01	22.01	22.09	23.08	23.08	23.08	23.08	23.08	23.08	23.08	23.08	23.08	24.75	25.12	25.18	26.34	26.34	26.67	26.33	24.41	24.1
SPP South - Energy Price - 1H2023	5284	6/19/2037	6/19/2037	24.56	24.1	23.38	24.1	23.9	24.1	23.5	23.5	23.47	24.26	25.18	25.14	26.77	25.22	26.77	26.77	26.77	26.34	26.92	26.77	26.77	26.77	24.83	24.56
SPP South - Energy Price - 1H2023	5285	6/20/2037	6/20/2037	24.56	24.56	24.4	24.09	23.89	23.65	23.17	22.88	23.17	24.65	24.65	25.19	24.65	25.19	24.65	22.68	22.68	24.65	24.65	24.65	22.51	22.51	23.79	22.7
SPP South - Energy Price - 1H2023	5286	6/21/2037	6/21/2037	22.57	22.5	22.43	22.43	22.43	22.43	22.51	22.51	22.68	24.33	23.73	23.74	24.65	24.65	24.65	22.68	24.65	24.65	22.68	24.65	24.65	24.65	24.56	24.56
SPP South - Energy Price - 1H2023	5287	6/22/2037	6/22/2037	25.08	23.19	23.07	23.07	23.3	23.39	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.57	24.06	25.27	23.22
SPP South - Energy Price - 1H2023	5288	6/23/2037	6/23/2037	23.46	23.47	23.33	23.33	23.56	23.65	24.3	24.3	24.42	24.3	24.3	24.3	25.23	25.23	25.25	24.3	24.3	24.3	24.3	24.51	24.98	24.98	25.07	24.01
SPP South - Energy Price - 1H2023	5289	6/24/2037	6/24/2037	24.71	26.04	25.73	25.42	25.23	24.98	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	23.76	23.96
SPP South - Energy Price - 1H2023	5290	6/25/2037	6/25/2037	24.18	24.2	24.23	24.23	24.23	24.33	24.92	24.92	24.92	24.92	24.92	24.92	24.92	24.92	24.92	24.92	24.98	24.98	25.27	24.98	25.27	24.98	26.14	26.12
SPP South - Energy Price - 1H2023	5291	6/26/2037	6/26/2037	23.25	25.35	25.35	23.29	25.35	25.35	24.12	24.12	24.12	24.12	24.12	24.37	24.59	25.24	25.24	25.79	24.46	25.24	25.24	24.93	25.47	25.24	25.35	25.35
SPP South - Energy Price - 1H2023	5292	6/27/2037	6/27/2037	25.35	24.32	23.56	23.51	23.56	23.86	23.57	23.41	24.42	23.44	23.22	23.41	25.44	25.44	25.44	25.44	25.2	25.44	25.44	25.44	25.44	25.4	23.26	23.78
SPP South - Energy Price - 1H2023	5293	6/28/2037	6/28/2037	23.83	23.72	23.14	23.89	23.56	23.44	23.52	23.22	23.22	23.22	23.22	23.22	23.22	25.44	25.44	25.44	25.44	25.44	25.44	25.44	25.44	24.53	24.08	23.18
SPP South - Energy Price - 1H2023	5294	6/29/2037	6/29/2037	23.18	21.88	22.03	22.25	22.3	23.18	23.27	24.78	25.11	25.06	25.11	25.18	25.11	25.2	25.18	24.41	25.11	23.05	25.05	25.05	23.73	23.73	21.92	22.52
SPP South - Energy Price - 1H2023	5295	6/30/2037	6/30/2037	23.08	22.92	22.78	22.73	22.78	22.84	23.79	25.14	25.39	26.69	26.69	26.69	26.69	26.69	27.03	27.03	27.03	26.69	26.69	28.06	27.57	27.03	25.16	24.91
SPP South - Energy Price - 1H2023	5296	7/1/2037	7/1/2037	39.32	37.67	37.23	37.67	37.84	37.84	48.12	44.27	44.67	45.65	47.01	48.7	48.7	50.42	48.12	46.84	48.12	47.29	48.7	48.7	48.7	48.56	38	36.65
SPP South - Energy Price - 1H2023	5297	7/2/2037	7/2/2037	29.77	29.55	29	29	29.77	29.53	37.41	36.49	36.6	37.04	36.81	39.62	39.94	43.39	43.75	43.75	39.94	41.75	44.66	43.39	42.33	43.39	32.61	29.77
SPP South - Energy Price - 1H2023	5298	7/3/2037	7/3/2037	36.79	37.22	36.79	36.79	36.76	37.42	47.85	47.85	50.48	49.76	47.85	48.43	54.06	54.06	54.06	54.06	54.06	56.79	63.02	57.4	57.27	53.88	40.78	40.78
SPP South - Energy Price - 1H2023	5299	7/4/2037	7/4/2037	39.1	37.42	36.41	36.41	36.76	36.41	39.42	40.29	40.86	39.42	39.42	40.51	44.15	44.15	44.15	46.97	44.15	46.49	44.15	40.51	40.51	40.51	37.42	37.42
SPP South - Energy Price - 1H2023	5300	7/5/2037	7/5/2037	37.42	37.42	37.08	36.41	36.41	36.18	36.6	37.91	37.48	37.91	37.7	39.42	39.36	40.51	39.42	39.42	39.42	36.03	39.42	39.42	39.42	40.51	37.11	35.02
SPP South - Energy Price - 1H2023	5301	7/6/2037	7/6/2037	38.27	36.39	37.16	37.27	38.85	38.38	46.71	44.9	44.35	44.35	44.35	46.71	46.71	46.71	46.71	46.71	44.35	44.35	46.68	44.35	46.71	46.71	35.95	37.45
SPP South - Energy Price - 1H2023	5302	7/7/2037	7/7/2037	37.55	36.02	36.02	36.02	37.49	37.45	47.01	46.11	45.86	48.26	47.12	47.12	48.09	47.17	49.7	51.24	51.24	51.24	51.42	48.9	51.24	51.78	39.89	39.46
SPP South - Energy Price - 1H2023	5303	7/8/2037	7/8/2037	39.21	39.05	39.05	39.05	39.05	39.05	48.6	49.57	50.7	48.23	51.45	51.45	50.74	50.34	46.72	47.21	46.03	50.79	50.79	50.79	50.79	50.79	39.05	38.09
SPP South - Energy Price - 1H2023	5304	7/9/2037	7/9/2037	37.13	35.87	35.78	35.82	37.13	37.13	47.01	47.01	43.47	43.7	44.42	44.28	46.1	46.11	49.59	49.13	49.78	49.78	50.22	52.52	48.35	50.22	43.45	37.97
SPP South - Energy Price - 1H2023	5305	7/10/2037	7/10/2037	38.61	37.56	37.56	36.49	36.72	37.53	43.06	43.48	43.06	47.02	46.96	45.8	48.98	48.58	49.2	49.13	49.75	49.75	49.95	49.75	49.75	49.75	39.36	38.61
SPP South - Energy Price - 1H2023	5306	7/11/2037	7/11/2037	38.61	38.61	36.45	36.49	36.72	36.07	38.91	38.8	38.46	38.46	37.15	38.46	38.46	37.15	40.67	40.67	38.7	40.8	41.81	43.42	41.81	41.8	37.99	37.56
SPP South - Energy Price - 1H2023	5307	7/12/2037	7/12/2037	37.29	35.6	35.39	35.43	35.66	35.43	38.9	38.8	38.46	37.52	38.36	38.36	38.36	40.67	41.66	40.67	44.15	42.27	44.15	49.74	44.33	44.15	37.99	38.61
SPP South - Energy Price - 1H2023	5308	7/13/2037	7/13/2037	38.62	37.67	37.67	37.63	37.86	38.24	48.22	47.71	47.1	47.85	50.4	50.4	51.05	49.01	51.05	50.56	47.12	51.05	51.06	51.05	51.05	51.05	39.52	39.25
SPP South - Energy Price - 1H2023	5309	7/14/2037	7/14/2037	39.25	39.25	39.25	38.17	38.15	39.25	50.49	51.01	49.27	49.76	51.68	56.46	57.12	56.57	60.7	60.77	60.77	61.24	61.03	61.65	60.14	55.73	40.35	40.35
SPP South - Energy Price - 1H2023	5310	7/15/2037	7/15/2037	40.7	40.35	40.15	40.21	40.35	40.35	47.87	47.1	45.07	46.62	47.1	49.34	51.38	52.07	52.07	53.29	53.88	52.07	56.94	55.51	51.45	50.83	39.58	39.58
SPP South - Energy Price - 1H2023	5311	7/16/2037	7/16/2037	40.78	40.24	40.78	40.78	40.78	40.78	46.97	46.7	46.38	46.74	47.21	47.32	47.21	48.17	47.21	48.17	46.38	46.38	50.59	52.91	48.17	52.84	40.9	40.78

SPP South - Energy Price - 1H2023	5312	7/17/2037	7/17/2037	39.68	38	37.89	37.84	37.87	39.12	46.17	47.1	47.02	47.02	47.1	47.14	47.11	47.14	47.14	47.14	51.03	51.49	51.49	51.49	51.49	51.49	40.78	40.67
SPP South - Energy Price - 1H2023	5313	7/18/2037	7/18/2037	39.68	39.68	39.68	39.68	39.68	39.12	39.8	39.53	39.21	39.52	40.88	39.21	40.43	42.92	42.96	42.96	42.96	42.96	44.14	42.96	42.96	42.96	39.68	39.68
SPP South - Energy Price - 1H2023	5314	7/19/2037	7/19/2037	36.22	36.22	36.22	36.22	39.37	39.12	39.21	39.21	39.21	39.21	39.21	41.25	39.21	39.21	39.21	42.96	39.21	39.21	42.96	42.96	44.15	44.15	40.78	39.68
SPP South - Energy Price - 1H2023	5315	7/20/2037	7/20/2037	39.16	38.14	38.14	38.71	38.31	38.14	46.65	46.11	45.69	46.55	49.42	49.77	50.41	50.41	50.41	50.41	50.41	54.91	50.41	50.41	56.04	50.41	40.81	40.78
SPP South - Energy Price - 1H2023	5316	7/21/2037	7/21/2037	39.52	40.22	39.04	39.18	38.59	38.81	47.03	49.77	47.08	47.16	45.79	50.11	50.76	50.76	50.76	50.11	50.76	50.11	54.83	50.76	50.76	50.76	40.78	38.44
SPP South - Energy Price - 1H2023	5317	7/22/2037	7/22/2037	37.89	37.89	37.89	37.89	37.89	37.89	43.98	43.39	44.85	43.39	45.65	47.01	47.17	43.39	48.78	48.68	49.5	48.77	50.13	50.13	49.5	49.5	38.84	38.37
SPP South - Energy Price - 1H2023	5318	7/23/2037	7/23/2037	37.12	37.88	37.12	37.73	37.76	38.16	46.88	45.17	45.94	46.97	48.64	49.24	48.64	49.24	53.23	52.31	49.24	50.84	53.23	53.55	53.64	54.21	41.17	38.16
SPP South - Energy Price - 1H2023	5319	7/24/2037	7/24/2037	36.75	37.77	37.77	37.67	37.77	37.77	48.09	48.23	48.23	52.6	53.24	54.54	54.54	50.17	54.54	54.54	54.54	54.54	62.25	55.58	54.54	53.79	40.78	38.93
SPP South - Energy Price - 1H2023	5320	7/25/2037	7/25/2037	37.77	37.77	37.77	37.77	37.77	37.89	40.4	40.29	39.79	40.23	40.37	40.73	42.6	41.61	43.41	43.74	43.87	43.88	44.15	43.88	43.88	40.97	37.77	36.75
SPP South - Energy Price - 1H2023	5321	7/26/2037	7/26/2037	37.77	36.75	36.75	36.75	37.07	36.04	36.95	39.02	36.36	37.92	36.36	39.79	40.76	40.9	42.22	42.63	42.75	43.09	43.09	40.9	40.9	44.06	37.89	37.77
SPP South - Energy Price - 1H2023	5322	7/27/2037	7/27/2037	37.64	36.62	36.62	37.24	36.62	36.62	47.27	43.75	43.91	44.28	46.86	48.08	48.67	48.08	48.08	48.66	52.1	52.1	58.26	54.35	52.1	48.67	39.45	36.9
SPP South - Energy Price - 1H2023	5323	7/28/2037	7/28/2037	36.9	37.26	36.9	36.9	36.9	36.9	45	46.95	43.19	47.35	48.17	46.98	51.5	51.5	48.99	48.99	48.99	51.5	54.74	53.21	51.5	50.49	38.13	38.29
SPP South - Energy Price - 1H2023	5324	7/29/2037	7/29/2037	38.15	37.26	37.26	34.85	36.43	37.26	46.89	47.54	46.96	48.75	49.41	49.41	49.41	49.41	49.41	49.41	49.41	49.41	53.6	53.23	52.19	48.59	38.3	38.3
SPP South - Energy Price - 1H2023	5325	7/30/2037	7/30/2037	34.4	37.65	38.71	38.71	38.71	38.71	49.23	48.63	45.8	48.1	48.99	51.23	53.21	53.49	51.69	53.21	52.92	52.25	55.26	54.04	53.21	51.3	38.71	38.71
SPP South - Energy Price - 1H2023	5326	7/31/2037	7/31/2037	38.2	38.37	37.34	38.37	38.47	38.85	48.57	47.6	48.49	48.87	47.84	46.9	48.87	48.87	48.87	49.48	48.87	48.87	48.87	48.87	48.87	47.37	38.36	36.95
SPP South - Energy Price - 1H2023	5327	8/1/2037	8/1/2037	41.65	40.25	40.25	41.31	43.1	40.25	40.99	42.53	42.53	42.53	43.72	43.72	43.72	43.72	43.72	43.72	43.72	42.53	43.72	42.53	42.53	42.53	44.01	43.63
SPP South - Energy Price - 1H2023	5328	8/2/2037	8/2/2037	40.25	41.9	41.77	40.25	40.25	40.25	38.86	38.86	38.86	38.86	38.86	40.91	42.53	42.53	43.72	42.53	42.91	42.53	43.72	44.74	44.74	43.72	44.05	44.05
SPP South - Energy Price - 1H2023	5329	8/3/2037	8/3/2037	43.15	42.63	43.15	42.63	42.63	42.63	41.13	40.3	39.39	39.82	43.88	44.7	44.7	44.7	44.7	45.23	45.24	45.24	46.15	49.24	46.9	45.23	44.35	44.56
SPP South - Energy Price - 1H2023	5330	8/4/2037	8/4/2037	46.17	46.17	46.17	46.17	46.17	46.97	45.15	44.19	43.62	43.98	47.05	47.19	47.87	47.96	49.18	49.86	49.85	52.59	53.42	51.57	49.86	47.34	47.41	47.47
SPP South - Energy Price - 1H2023	5331	8/5/2037	8/5/2037	47.79	42.9	44.62	42.9	47	47	44.61	44.01	42.17	43.94	44.01	44.02	44.05	44.05	44.05	44.05	44.09	48.07	48.07	48.07	48.07	46.44	47	47
SPP South - Energy Price - 1H2023	5332	8/6/2037	8/6/2037	47.56	47.56	44.76	44.58	47.56	45.74	44.03	43.96	45.29	44.03	44.07	44.07	44.07	48.56	44.07	48.56	49.22	49.22	49.22	48.56	48.56	48.56	47.56	47.28
SPP South - Energy Price - 1H2023	5333	8/7/2037	8/7/2037	47.28	47.28	47.28	47.28	47.28	47.75	43.94	42.39	42.39	42.39	43.8	43.66	44.03	47.42	46.94	48.32	46.53	48.32	48.97	48.32	48.32	48.32	48.35	47.28
SPP South - Energy Price - 1H2023	5334	8/8/2037	8/8/2037	47.28	47.28	47.02	46.52	46	44.75	43.2	42.95	42.95	42.87	42.95	43	45.65	45.65	45.65	45.65	45.72	46.5	45.65	46.69	46.69	46.69	48.35	47.28
SPP South - Energy Price - 1H2023	5335	8/9/2037	8/9/2037	47.28	47.28	48.04	47.37	47.28	47.28	43.8	43.33	42.95	42.95	42.95	45.65	45.65	46.39	45.74	46.23	46.69	46.94	46.69	46.69	46.69	45.86	47.28	47.28
SPP South - Energy Price - 1H2023	5336	8/10/2037	8/10/2037	47.3	47.72	44.72	46.93	47.72	47.73	44.09	44.04	44.04	47.91	44.08	48.71	48.71	49.37	49.37	49.37	49.37	49.37	49.37	50.72	49.37	48.71	47.73	47.72
SPP South - Energy Price - 1H2023	5337	8/11/2037	8/11/2037	46.93	46.93	46.77	46.77	46.77	46.77	46.65	44.7	44.01	44.01	47.87	48.7	52.11	52.11	52.17	54.48	48.51	48.45	51.73	52.25	52.14	48.51	47.95	48.09
SPP South - Energy Price - 1H2023	5338	8/12/2037	8/12/2037	41.22	41.22	41.22	40.12	40.12	40.12	38.13	38.5	36.79	36.79	37.64	42.05	42.05	39.69	42.5	42.05	42.5	42.5	48.34	47.18	44.96	42.5	40.12	40.12
SPP South - Energy Price - 1H2023	5339	8/13/2037	8/13/2037	36.75	36.75	36.71	36.21	36.56	36.75	35.83	35.41	33.4	36.39	35.41	38.26	38.26	38.26	42.43	42.43	39.03	42.43	42.43	43.59	42.43	38.81	40.43	38.56
SPP South - Energy Price - 1H2023	5340	8/14/2037	8/14/2037	36.17	36.17	36.17	35.71	35.23	36.17	37.11	37.76	34.81	37.76	35.54	37.76	38.09	39.81	39.61	40.47	39.2	41.81	42.41	42.8	40.47	39.56	38.69	38.69
SPP South - Energy Price - 1H2023	5341	8/15/2037	8/15/2037	36.17	36.17	36.17	36.17	36.17	36.17	34.92	34.92	35.93	36.81	37.36	42.94	41.33	44.51	44.53	44.08	44.08	44.98	44.08	42.97	39.96	38.64	37.59	36.17
SPP South - Energy Price - 1H2023	5342	8/16/2037	8/16/2037	35.23	35.23	35.23	35.23	35.23	35.23	34.02	34.02	34.02	34.02	34.02	34.93	34.02	37.37	37.03	34.93	34.93	37.62	42.1	44.31	42.1	40.1	40.11	40.11
SPP South - Energy Price - 1H2023	5343	8/17/2037	8/17/2037	44.93	44.28	43.92	43.82	43.82	45.03	44.61	43.88	41.45	41.47	43.92	45.28	45.29	44.02	45.61	45.28	45.28	45.28	47.64	48.44	47.87	45.64	45.3	45.04
SPP South - Energy Price - 1H2023	5344	8/18/2037	8/18/2037	47.91	47.14	47.14	47.13	47.13	47.14	44.5	44.03	42.28	44.06	44.06	44.23	44.83	48.19	48.19	48.33	47.77	48.33	53.59	53.16	50.33	48.19	48.28	48.35
SPP South - Energy Price - 1H2023	5345	8/19/2037	8/19/2037	48.41	48.4	48.35	48.35	47.02	48.35	47.04	44.14	43.28	43.28	44.62	44.3	45.62	49.31	49.75	49.99	49.99	49.99	58.86	59.41	54.87	49.93	48.41	48.35
SPP South - Energy Price - 1H2023	5346	8/20/2037	8/20/2037	48.35	48.35	47.99	48.35	48.35	48.35	47.97	45.72	44.13	45.23	46.43	48.94	48.94	54.5	52.24	55.82	58.06	58.06	66.06	59.33	59.21	58.06	58.84	51.14
SPP South - Energy Price - 1H2023	5347	8/21/2037	8/21/2037	48.35	47.71	48.35	48.35	48.35	48.35	47.86	47.54	44.31	44.03	48.17	49.37	50.62	51.37	56.89	55.75	56.46	56.83	57.71	57.13	57.2	56.16	54.08	48.07
SPP South - Energy Price - 1H2023	5348	8/22/2037	8/22/2037	47.64	46.59	46.4	46.4	46.4	46.4	44.8	44.8	43.14	44.8	44.8	46.06	46.06	54.87	59.25	59.58	60.41	70.26	68.87	61.17	61.28	58.12	48.35	48.35
SPP South - Energy Price - 1H2023	5349	8/23/2037	8/23/2037	47.71	46.59	46.4	46.4	46.4	46.4	44.8	44.8	45.07	46.06	44.8	46.06	46.06	46.69	46.06	46.69	46.69	48.15	50.63	49.12	46.69	46.69	47.71	47.71
SPP South - Energy Price - 1H2023	5350	8/24/2037	8/24/2037	47.95	46.8	46.8	47.95	46.8	47.47	46.81	47.36	44.99	45.08	47.93	47.58	48.38	47.75	48.38	48.38	48.38	48.38	50.97	51.84	48.38	48.38	48.35	48.05
SPP South - Energy Price - 1H2023	5351	8/25/2037	8/25/2037	48.35	48.35	48.24	44.36	44.36	48.35	47.22	46.26	44.09	44.12	46.47	47.09	49.05	49.5	49.5	49.5	48.38	49.5	56.52	56.52	49.5	49.5	48.35	48.35
SPP South - Energy Price - 1H2023	5352	8/26/2037	8/26/2037	48.35	48.35	48.35	48.35	47.36	48.35	44.1	44.13	43.57	45.01	49.27	50.33	50.33	56.69	63.22	65.66	65.79	63.35	63.98	63.35	59.72	56.69	55.19	50.18
SPP South - Energy Price - 1H2023	5353	8/27/2037	8/27/2037	49.41	49.41	48.93	49.41	49.41	49.41	49.38	46.94	45.43	45.96	45.79	48.16	50.18	50.89	53.85	54.62	54.95	55.95	57.37	60.02	56.26	53.69	49.43	49.41
SPP South - Energy Price - 1H2023	5354	8/28/2037	8/28/2037	49.06	49.06	49.06	49.06	49.06	49.06	49.88	49.88	49.88	54.66	56.65	56.99	56.15	52.68	55.62	56.99	56.99	57.9	56.99	56.99	53.22	49.88	49.06	49.06
SPP South - Energy Price - 1H2023	5355	8/29/2037	8/29/2037	49.06	49.06	49.06	49.06	49.06	49.06	47.37	46.69	46.69	47.22	47.37	47.37	48.72	49.24	48.72	53.9	56.28	51.75	63.04	58.12	53.9	47.37	48.35	48.35
SPP South - Energy Price - 1H2023	5356	8/30/2037	8/30/2037	48.35	48.35	48.35	48.35	48.35	48.35	46.69	46.69	46.69	46.69	46.69	46.69	47.37	47.37	47.37	47.37	47.87	47.9	54.69	53.71	55.26	48.82	49.06	49.06
SPP South - Energy Price - 1H2023	5357	8/31/2037	8/31/2037	40.69	40.69	40.69	39.61	40.69	41.15	41.6	38.38	37.81	38.46	39.31	40.31	40.14	42.04	42.04	43.4	43.83	45.01	46.62	47.64	46.62	46.62	48.23	46.02
SPP South - Energy Price - 1H2023	5358	9/1/2037	9/1/2037	37.91	37.91	37.91	37.91	37.91	38.06	36.94	36.94	33.98	33.98	33.98	36.94	36.94	36.94	36.94	36.94	36.94	36.94	41.68	40.05	40.27	36.94	37.91	37.91
SPP South - Energy Price - 1H2023	5359	9/2/2037	9/2/2037	37.72	37.72	36.78	37.72	37.72	37.72	35.03	32.85	32.23	32.23	32.23	32.23	32.23	32.23	32.23	32.23	32.23	35.03	35.23	37.23	36.37	34.56	35.72	34.5
SPP South - Energy Price - 1H2023	5360	9/3/2037	9/3/2037	36.62	36.62	36.62	36.62	36.62	36.62	35.86	32.11	32.11	32.11	32.11	32.11	32.11	32.11	32.11	32.11	33.69	35.21	37.64	36.61	35.35	36.02	37.66	37.39
SPP South - Energy Price - 1H2023	5361	9/4/2037	9/4/2037	37.37	37.37	37.37	37.37	37.37	37.37	36.37	36.37	33.62	33.91	33.68	36	36.37	36.85	36.85	36.85	36.85	36.85	36.85	36.37	36.37	36.37	36.35	36.35
SPP South - Energy Price - 1H2023	5362	9/5/2037	9/5/2037	36.26	36.35	36.35	36.35	33.69	36.35	49.92	50.21	50.14	49.92	53.84	52.69	52.69	54.18	54.18	52.69	54.18	52.69	54.26	54.96	54.18	54.18	36.35	33.18
SPP South - Energy Price - 1H2023	5363	9/6/2037	9/6/2037	33.18	33.29	33.65	33.53	33.43	33.54	49	48.11	48.11	48.11	48.11	48.11	48.11	52.69	54.18	54.18	54.18	54.18	54.18	54.18	54.18	54.18	36.35	34.38
SPP South - Energy Price - 1H2023	5364	9/7/2037	9/7/2037	33.73	36.35	35.73	33.77	36.35	36.35	33.93	33.45	31.9	31.9	31.9	31.9	31.9	31.9	32.15	31.9	31.9	31.9	36.37	34.89	33.45	32.99	34.63	33.81
SPP South - Energy Price - 1H2023	5365	9/8/2037	9/8/2037	34.63	34.31	34.66	34.55	34.63	34.73	33.21	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.91	32.86	35.81	34.96	35.95	32.91	34.6	34.13
SPP South - Energy Price - 1H2023	5366	9/9/2037	9/9/2037	34.55	34.6	34.55	34.62	34.6	35.19	36.82	36.99	35.9	37.67	37.67	38.19	38.19	38.19	38.19	38.19	38.19	37.67	40.8	41.3	38.19	37.67	37.91	37.91
SPP South - Energy Price - 1H2023	5367	9/10/2037	9/10/2037	37.22	37.22	37.22	37.22	37.22	37.22	36.3	36.45	35.08	32.77	32.62	32.56	32.56	32.56	32.56	32.56	32.56	33.03	33.77	33.71	33.77	33.65	34.49	34.9
SPP South - Energy Price - 1H2023	5368	9/11/2037	9/11/2037	33.07	33.17	33.52	33.4	33.57	33.59	31.8	31.8	31.8	31.8	31.8	29.25	31.64	29.25	29.25	31.64	31.64	31.8	31.8	31.8	31.8	31.8	33.07	33.07
SPP South - Energy Price - 1H2023	5369	9/12/2037	9/12/2037	33.07	33.07	33.07	33.07	33.07	33.07	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	52.51	52.11	48.84	47.94	33.07	33.07
SPP South - Energy Price - 1H2023	5370	9/13/2037	9/13/2037	33.07	33.07	33.07	33.07	33.07	33.07	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	47.94	49.49	51.36	47.94	48.05	33.07	33.07
SPP South - Energy Price - 1H2023	5371	9/14/2037	9/14/2037	32.72	32.79	33.14	33.03	33.19	33.21	33.79	33.65	33.65	31.5	31.5	31.5	31.5	33.65	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.83	33.29
SPP South - Energy Price - 1H2023	5372	9/15/2037	9/15/2037	32.89	33.33	32.69	33.26	33.02	33.29	33.63	33.58	31.64	31.14	31.14	31.14	31.14	31.64	31.8	31.14	31.64	32.45	33.28	32.45	31.58	31.14	32.29	32.29
SPP South - Energy Price - 1H2023	5373	9/16/2037	9/16/2037	32.35	32.35	32.35	32.35	32.35	32.35	31.19	31.19	31.19	31.19	31.19	31.19	27.59	31.19	31.19	31.19	31.19	31.19	33.58	32.15	31.64	31.19	32.52	32.35
SPP South - Energy Price - 1H2023	5374	9/17/2037	9/17/2037	32.97	32.97	33.3	33.3	33.3	33.3	31.71	31.71	29.17	29.17	31.64	31.71	31.71	31.71	31.71	31.71	32.1	36.16	40.69	39.23	36.64	35.71	36.11	36.11
SPP South - Energy Price - 1H2023	5375	9/18/2037	9/18/2037	35.28	35.28	35.28	35.28	35.28	35.28	34.1	33.09	31.54	31.29	31.08	31.08	31.08	31.08	31.08	31.08	31.08	33.65	33.65	32.24	32	31.83	32.22	32.22
SPP South - Energy Price - 1H2023	5376	9/19/2037	9/19/2037	32.22	32.22	32.22	32.22	32.22	32.22	46.72	12.59	8.8	8.16	9.36	10.3	12.59	14.26	16.34	18.1	18.77	46.72	46.72	46.72	46.72	46.72	32.22	32.22
SPP South - Energy Price - 1H2023	5377	9/20/2037	9/20/2037	32.22	32.22	32.22	32.22	32.22	32.22	46.72	10.07	8.8	8.16	9.36	10.3	11.58	14.26	16.34	18.1	46.72	46.72	46.72	46.72	46.72	46.72	32.22	32.22
SPP South - Energy Price - 1H2023	5378	9/21/2037	9/21/2037	27.66	27.66	27.66	27.66	27.66	27.66	27.19	27.19	27.19	27.19	27.19	27.19	27.19	28.27	31.1	31.3	31.3	31.42	31.42	31.3	31.1	28.93	30.19	27.66
SPP South - Energy Price - 1H2023	5379	9/22/2037	9/22/2037	30.74	31.19	30.61	31.42	33.2	33.2	33.49	33.19	33.2	32.86	33.54	33.54	34.07	34.15	36.2	36.77	36.67	37.95	37.75	36.2	35.47	34.07	34.12	32.42
SPP South - Energy Price - 1H2023	5380	9/23/2037	9/23/2037	30.67	30.3	30.54	30.42	32.42	33.14	33.22	33.22	30.08	32.63	31.64	33.54	33.48	34.02	33.62	33.62	33.66	37.22	37.17	36.15	34.02	33.54	32.09	30.6
SPP South - Energy Price - 1H2023	5381	9/24/2037	9/24/2037	32.88	32.37	33.47	33.35	33.52	35.14	33.67	33.62	30.97	30.97	31.92	31.31	33.57	31.21	30.97	33.65	33.65	35.78	39.28	35.78	35.33	34.82	35.14	35.14
SPP South - Energy Price - 1H2023	5382	9/25/2037	9/25/2037	32.91	32.61	32.99	32.99	32.99	32.99	32.89	30.82	29.33	29.33	29.33	29.33	29.33	29.33	29.33	29.33	29.33	30.82	33.5	31.59	29.33	29.33	30.17	30.17
SPP South - Energy Price - 1H2023	5383	9/26/2037	9/26/2037	30.17	30.17	30.17	30.17	30.17	30.17	43.74	10.85	10.3	8.16	9.36	10.3	10.3	12.23	11.25	18.1	18.77	43.74	43.74	43.74	43.74	43.74	30.17	30.17
SPP South - Energy Price - 1H2023	5384	9/27/2037	9/27/2037	30.17	30.17	27.85	29.83	30.17	30.17	43.74	2.94	2.7	2.45	2.38	0	2.7	4.43	4.07	4.38	4.07	43.74	43.74	43.74	43.74	43.74	12.57	12.13
SPP South - Energy Price - 1H2023	5385	9/28/2037	9/28/2037	12.13	12.11	12.76	10.98	12.17	28.2	27.65	11.01	6.69	9.33	6.46	10.13	12.92	27.65	27.65	27.65	27.65	27.65	30.91	29.02	29.02	27.65	28.2	28.2
SPP South - Energy Price - 1H2023	5386	9/29/2037	9/29/2037	32.14	32.14	32.14	32.14	32.14	32.14	31.01	31.01	31.01	31.01	31.01	31.01	31.01	31.01	31.01	31.01	31.01	32.76	33.65	32.69	32.8	31.33	32.14	32.14
SPP South - Energy Price - 1H2023	5387	9/30/2037	9/30/2037	32.31	32.31	32.31	32.31	32.31	32.31	32.61	32.87	32.87	32.87	32.51	31.62	31.18	31.29	31.67	32.08	32.87	33.1	33.52	32.86	32.97	31.49	32.31	32.31
SPP South - Energy Price - 1H2023	5388	10/1/2037	10/1/2037	19.07	19.07	19.07	19.07	19.07	19.07	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.07	19.07
SPP South - Energy Price - 1H2023	5389	10/2/2037	10/2/2037	19.3	19.3	19.3	19.3	19.3	19.3	19.66	19.66	19.66	19.66	19.66	19.66	18.09	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.3	19.3
SPP South - Energy Price - 1H2023	5390	10/3/2037	10/3/2037	19.3	19.3	19.3	19.3	19.3	19.3	23.71	23.6	3.82	1.22	1.18	1.42	1.81	1.81	1.81	2.18	6.13	23.71	23.71	23.71	23.71	23.6	19.3	19.3
SPP South - Energy Price - 1H2023	5391	10/4/2037	10/4/2037	19.3	19.3	19.3	19.3	19.3	19.3	23.71	8.84	5.58	5.13	5.58	5.58	5.58	2.41	5.58	5.58	23.71	23.71	24.93	23.71	23.71	23.71	19.3	19.3
SPP South - Energy Price - 1H2023	5392	10/5/2037	10/5/2037	21	19.5	19.5	19.85	20.27	20.49	22.26	20.93	19.88	19.88	19.88	20.93	20.93	20.93	20.93	20.93	22.26	22.26	23.21	23.68	22.26	22.26	20.98	20.98
SPP South - Energy Price - 1H2023	5393	10/6/2037	10/6/2037	20.69	20.65	20.65	20.57	20.65	19.86	21.05	20.05	20.05	19.88	19.88	19.88	19.88	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	20.05	17.38	17.38
SPP South - Energy Price - 1H2023	5394	10/7/2037	10/7/2037	17.34	17.38	17.34	18.85	18.9	17.38	20	20	19.88	8.7	4.73	4.52	16.87	5.96	19.88	20	20	20.01	20.01	20.01	20.01	20.01	20.31	19.81

SPP South - Energy Price - 1H2023	5395	10/8/2037	10/8/2037	17.85	17.85	17.85	17.85	17.85	17.85	20.48	6.25	1.47	0.89	0.86	1.47	1.32	1.6	1.47	6.85	20.48	20.48	20.48	20.48	20.48	20.48	20.57	20.57
SPP South - Energy Price - 1H2023	5396	10/9/2037	10/9/2037	20.53	20.57	20.57	20.56	20.43	20.57	21.76	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	21.76	22.18	22.37	22.35	21.76	22.26	22.26
SPP South - Energy Price - 1H2023	5397	10/10/2037	10/10/2037	22.26	22.26	22.26	22.26	22.26	24.19	27.34	27.34	26.65	26.75	26.53	27.34	28.66	26.89	25.15	25.09	27.34	27.34	27.34	27.34	27.34	25.09	20.43	20.2
SPP South - Energy Price - 1H2023	5398	10/11/2037	10/11/2037	20.43	20.43	21.38	22.2	22.2	22.2	25.09	23.76	25.82	25.02	24.98	25.09	21.94	22.6	21.94	21.95	21.94	25.09	25.17	25.09	25.09	25.09	20.43	18.86
SPP South - Energy Price - 1H2023	5399	10/12/2037	10/12/2037	20.06	20.06	20.06	20.06	20.06	20.57	22.17	21.43	21.43	21.43	21.43	20.21	20.21	20.21	20.21	20.63	21.43	21.61	25.81	21.61	21.43	21.25	22.26	22.26
SPP South - Energy Price - 1H2023	5400	10/13/2037	10/13/2037	22.26	20.52	22.26	22.26	23.12	22.71	25.99	21.85	21.85	21.6	21.84	21.85	20.57	20.1	20.57	20.57	20.57	21.85	22.05	21.85	21.85	21.21	20.52	20.2
SPP South - Energy Price - 1H2023	5401	10/14/2037	10/14/2037	18.52	19.1	20.2	20.2	20.2	20.45	20.83	21.01	21.29	21.55	21.55	21.55	20.32	20.32	20.86	21.55	21.55	21.55	24.12	23.08	22.33	21.65	22.26	22.26
SPP South - Energy Price - 1H2023	5402	10/15/2037	10/15/2037	22.5	23.66	22.61	22.61	22.91	22.49	21.98	21.62	21.35	20.38	20.19	19.88	20.38	7.32	20.38	20.19	20.38	24.03	24.27	27.87	26.05	24.03	21.27	21.2
SPP South - Energy Price - 1H2023	5403	10/16/2037	10/16/2037	21.5	21.5	21.5	21.5	21.5	22.26	22.95	20.31	19.25	19.25	19.25	19.25	19.25	19.25	19.25	19.25	19.88	20.95	25.13	24.44	24.44	20.31	21.41	18.84
SPP South - Energy Price - 1H2023	5404	10/17/2037	10/17/2037	18.81	18.84	18.81	18.84	19.36	19.76	25.11	22.99	20.28	8.68	20.28	20.28	20.28	20.28	20.28	20.28	22.32	27.19	27.34	26.7	25.11	25.11	18.84	18.84
SPP South - Energy Price - 1H2023	5405	10/18/2037	10/18/2037	18.84	18.84	20.45	18.84	18.84	19.03	25.11	23.14	20.28	20.28	5.58	20.28	20.28	8.2	20.28	20.28	20.28	23.86	26.05	26.7	24.42	24.42	20.05	22.26
SPP South - Energy Price - 1H2023	5406	10/19/2037	10/19/2037	23.88	22.66	22.26	22.66	22.96	22.54	24.06	22.61	22.01	22.01	22.01	22.01	22.01	22.01	23.28	22.01	24.33	27.98	27.96	25.18	25.07	25.01	24.67	24.16
SPP South - Energy Price - 1H2023	5407	10/20/2037	10/20/2037	24.56	24.14	24.14	24.14	23.24	22.82	23.43	22.26	22.26	21.97	21.97	22.12	21.97	22.26	21.97	22.26	22.26	23.43	24.75	23.43	23.43	22.26	22.26	20.92
SPP South - Energy Price - 1H2023	5408	10/21/2037	10/21/2037	20.92	20.92	20.92	20.92	20.92	20.92	22.47	22.21	18.68	19.88	18.68	16.97	19.88	18.68	18.68	18.74	19.88	22.47	22.47	22.47	22.21	22.21	18.28	19.87
SPP South - Energy Price - 1H2023	5409	10/22/2037	10/22/2037	18.56	18.56	18.56	20.49	19.92	20.49	20.02	19.9	19.9	19.88	18.3	18.3	19.9	19.88	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	18.56	18.56
SPP South - Energy Price - 1H2023	5410	10/23/2037	10/23/2037	18.44	18.44	18.44	18.44	18.44	18.44	19.78	19.78	19.78	19.78	18.2	19.78	18.2	19.78	19.78	18.33	19.78	19.78	19.78	19.78	19.88	19.78	20.52	20.52
SPP South - Energy Price - 1H2023	5411	10/24/2037	10/24/2037	20.52	20.52	19.46	20.3	18.44	20.04	22.64	24.61	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	25.2	25.2	25.2	25.2	25.2	20.52	20.47
SPP South - Energy Price - 1H2023	5412	10/25/2037	10/25/2037	18.67	20.3	20.3	18.79	18.97	19.18	23.27	22.64	22.64	2.03	1.18	1.42	1.81	2.03	2.03	2.18	22.64	25.2	25.2	25.2	25.2	25.2	20.52	20.52
SPP South - Energy Price - 1H2023	5413	10/26/2037	10/26/2037	19.62	19.28	19.69	18.49	19.93	20.43	20.31	20.32	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	22.15	22.15	22.15	22.15	22.15	22.15	20.58	19.53
SPP South - Energy Price - 1H2023	5414	10/27/2037	10/27/2037	18.8	18.8	18.8	18.8	18.8	18.8	20.12	19.88	3.67	3.73	3.67	3.67	3.67	1.75	3.67	3.67	16.99	20.12	20.12	20.12	20.12	20.12	18.8	18.8
SPP South - Energy Price - 1H2023	5415	10/28/2037	10/28/2037	18.7	18.7	15.04	18.7	18.7	18.7	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	20.03	18.7	18.7
SPP South - Energy Price - 1H2023	5416	10/29/2037	10/29/2037	18.09	18.09	18.09	18.09	18.09	18.09	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.38	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	18.09	18.09
SPP South - Energy Price - 1H2023	5417	10/30/2037	10/30/2037	17.29	17.29	17.29	17.29	17.29	17.29	18.74	18.74	18.74	19.88	19.88	19.88	19.82	19.74	19.88	19.88	19.88	20.91	20.91	19.88	19.88	19.88	19.22	17.71
SPP South - Energy Price - 1H2023	5418	10/31/2037	10/31/2037	19.16	17.69	17.69	17.69	18.05	17.69	22.49	21.72	23.61	21.72	23.61	23.53	22.08	21.94	22.2	22.39	22.13	23.61	23.61	23.61	23.61	21.24	17.29	17.29
SPP South - Energy Price - 1H2023	5419	11/1/2037	11/1/2037	25.56	25.56	25.56	25.56	25.56	25.56	36.81	18.81	3.19	3.47	2.69	0	0	0	2.69	1.7	8.32	36.81	36.81	36.81	36.81	36.81	25.55	25.55
SPP South - Energy Price - 1H2023	5420	11/2/2037	11/2/2037	23.68	23.68	23.68	23.68	23.68	23.68	30.09	30.09	30.09	30.09	30.09	30.09	30.09	30.09	30.09	30.09	30.09	32.56	32.56	32.55	30.09	30.09	26.31	26.31
SPP South - Energy Price - 1H2023	5421	11/3/2037	11/3/2037	26.48	26.48	26.48	26.48	26.48	26.48	30.25	30.25	30.25	32.56	30.25	30.25	30.25	30.25	30.25	30.25	32.56	32.56	33.33	32.56	32.9	33.75	28.23	26.48
SPP South - Energy Price - 1H2023	5422	11/4/2037	11/4/2037	25.57	25.57	25.34	25.57	25.34	25.57	32.53	32.53	32.53	32.53	32.53	32.53	31.38	29.18	29.18	29.18	29.18	29.18	29.18	29.18	29.18	29.18	22.83	22.83
SPP South - Energy Price - 1H2023	5423	11/5/2037	11/5/2037	23.52	23.52	23.52	23.52	23.52	23.52	29.92	29.92	29.92	29.92	27.52	27.52	27.52	27.52	27.52	29.92	29.92	29.92	32.56	32.56	32.56	32.56	27.91	26.72
SPP South - Energy Price - 1H2023	5424	11/6/2037	11/6/2037	26.73	26.73	26.72	26.72	26.17	26.72	30.48	30.48	30.48	6.75	5.71	5.15	5.59	5.53	5.59	5.59	30.48	30.48	30.48	30.48	30.48	30.48	24.04	24.04
SPP South - Energy Price - 1H2023	5425	11/7/2037	11/7/2037	24.04	24.04	24.04	24.04	24.04	24.04	34.63	34.63	9.62	7.72	7.72	7.1	7.1	7.63	7.72	7.72	34.63	35.85	34.63	34.63	34.63	34.63	24.04	24.04
SPP South - Energy Price - 1H2023	5426	11/8/2037	11/8/2037	24.04	24.04	24.04	24.04	24.04	24.04	34.63	34.63	11.05	3.83	4.16	1.8	1.95	2.69	2.69	1.7	34.63	34.63	34.63	34.63	34.63	34.63	24.04	7.67
SPP South - Energy Price - 1H2023	5427	11/9/2037	11/9/2037	7.67	7.69	7.67	7.66	8.34	24.94	26.16	7.72	2.51	2.51	2.73	1.3	1.41	1.26	1.95	2.51	6.03	30.58	30.58	30.58	30.58	30.58	20.53	20.53
SPP South - Energy Price - 1H2023	5428	11/10/2037	11/10/2037	13.03	7.09	7.15	17.66	22.87	27.56	33.37	33.37	32.56	32.64	30.7	33.37	33.37	30.7	29.31	32.56	33.37	33.37	33.37	33.37	33.37	33.37	27.56	27.56
SPP South - Energy Price - 1H2023	5429	11/11/2037	11/11/2037	28.43	28.43	28.43	28.43	28.43	28.43	34.3	34.66	34.6	34.3	34.35	34.3	34.3	34.3	34.3	34.3	34.3	34.74	34.74	34.75	34.66	34.66	28.88	31.2
SPP South - Energy Price - 1H2023	5430	11/12/2037	11/12/2037	28.15	28.15	28.15	28.15	28.15	28.15	33.37	33.37	31.93	10.56	5.71	5.15	5.14	5.53	5.71	5.48	33.37	33.37	33.37	33.37	33.37	33.37	28.15	28.15
SPP South - Energy Price - 1H2023	5431	11/13/2037	11/13/2037	25.85	25.85	25.85	25.85	25.85	25.85	30.92	30.92	30.92	27.68	5.71	11.95	11.84	14.81	26.97	30.92	30.92	30.99	31.02	30.92	30.92	30.92	25.85	25.85
SPP South - Energy Price - 1H2023	5432	11/14/2037	11/14/2037	25.85	25.85	25.85	25.85	25.85	25.85	37.23	37.23	37.23	21.65	12	12	7.1	12	7.72	8.7	16.23	37.23	37.23	37.23	37.23	37.23	25.85	25.85
SPP South - Energy Price - 1H2023	5433	11/15/2037	11/15/2037	25.85	25.79	25.49	25.74	25.85	25.85	37.23	37.23	32.55	37.23	37.23	36	37.23	29.96	7.72	37.23	37.23	37.23	37.23	37.23	37.23	37.23	25.85	25.85
SPP South - Energy Price - 1H2023	5434	11/16/2037	11/16/2037	23.4	23.4	23.4	23.4	23.4	23.4	28.32	28.32	28.32	8.19	7.86	28.32	24.3	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	28.32	23.4	23.4
SPP South - Energy Price - 1H2023	5435	11/17/2037	11/17/2037	26	26	26	26	26	26.66	31.08	31.08	31.08	31.08	31.08	31.08	31.08	31.08	31.08	31.08	31.08	32.19	31.68	31.08	31.08	31.08	26	26
SPP South - Energy Price - 1H2023	5436	11/18/2037	11/18/2037	26.83	26.83	26.83	26.83	26.83	26.83	33.12	33.27	31.96	31.96	31.96	31.96	31.96	32.34	31.96	31.96	31.96	33.12	33.12	33.12	33.12	33.12	27.42	26.83
SPP South - Energy Price - 1H2023	5437	11/19/2037	11/19/2037	27.81	27.26	27.26	27.26	27.26	27.26	33.14	33.14	32.56	9	5.71	5.15	5.14	5.53	5.59	5.48	6.03	33.14	33.14	33.14	33.14	33.14	27.26	27.26
SPP South - Energy Price - 1H2023	5438	11/20/2037	11/20/2037	26	26	26	26	26	26	31.81	32.39	31.81	31.81	31.81	31.81	31.81	15.31	9.82	29.7	31.81	31.81	31.81	31.81	31.81	31.81	26	26
SPP South - Energy Price - 1H2023	5439	11/21/2037	11/21/2037	26	26	26	26	26	26	37.45	37.45	37.45	37.45	37.45	37.08	14.64	34.45	34.45	37.45	37.45	37.45	37.45	37.45	37.45	37.45	26	26
SPP South - Energy Price - 1H2023	5440	11/22/2037	11/22/2037	26	26	26	26	26	26	37.45	37.45	37.45	37.45	37.45	37.45	7.72	1.74	2.69	1.7	37.3	37.45	37.45	37.45	37.45	37.45	26	26
SPP South - Energy Price - 1H2023	5441	11/23/2037	11/23/2037	29.63	29.63	29.63	29.63	29.63	29.63	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	35.67	31.2	29.63
SPP South - Energy Price - 1H2023	5442	11/24/2037	11/24/2037	29.45	29.06	29.06	29.06	29.06	29.45	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	29.06	29.06
SPP South - Energy Price - 1H2023	5443	11/25/2037	11/25/2037	28.63	28.63	28.63	28.63	28.63	28.63	34.6	34.6	34.73	34.73	34.73	34.6	34.6	34.72	34.73	34.74	34.74	35.22	38.44	34.74	34.74	34.76	31.2	29.06
SPP South - Energy Price - 1H2023	5444	11/26/2037	11/26/2037	29.98	29.98	29.98	29.47	29.98	29.98	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	35.3	34.79	34.6	34.6	34.6	28.63	28.63
SPP South - Energy Price - 1H2023	5445	11/27/2037	11/27/2037	26.68	26.68	26.84	26.53	26.53	26.53	32.37	32.37	29.97	27.84	27.84	30.26	30.26	5.65	7.14	26.76	32.37	32.37	32.37	32.37	32.37	32.37	26.53	26.53
SPP South - Energy Price - 1H2023	5446	11/28/2037	11/28/2037	26.53	26.53	26.53	26.53	26.53	26.53	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	39.19	42.56	40.19	38.21	38.21	26.53	26.53
SPP South - Energy Price - 1H2023	5447	11/29/2037	11/29/2037	26.53	26.53	28.84	26.53	26.53	26.53	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	38.21	33.63	38.21	38.21	38.21	38.21	38.21	38.21	28.4	26.53
SPP South - Energy Price - 1H2023	5448	11/30/2037	11/30/2037	28.01	28.3	26.53	26.53	26.53	29.03	33.45	34.23	33.45	33.45	33.45	31.88	33.55	33.45	33.55	33.45	33.55	36.48	35.14	32.72	33.54	33.25	29.03	29.85
SPP South - Energy Price - 1H2023	5449	12/1/2037	12/1/2037	35.5	35.5	35.5	34.96	34.69	35.5	38.96	38.86	34.66	33.95	33.95	33.95	33.95	33.95	33.95	33.95	33.95	39.26	39.27	39.26	39.26	39.26	34.55	35.5
SPP South - Energy Price - 1H2023	5450	12/2/2037	12/2/2037	36.68	36.68	36.71	36.68	36.68	36.68	39.29	40.85	39.36	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	40.85	40.85	40.85	40.85	40.85	37.69	37.69
SPP South - Energy Price - 1H2023	5451	12/3/2037	12/3/2037	39.33	39.33	38.55	38.27	38.27	38.27	41.29	41.23	37	37	37	37	37	37	37	37	38.87	39.96	40.22	42.34	40.22	42.34	39.33	38.27
SPP South - Energy Price - 1H2023	5452	12/4/2037	12/4/2037	40.69	40.69	41.95	41.95	37.82	37.63	41.36	41.4	41.37	40.03	40.03	40.03	40.03	40.03	40.03	40.03	40.06	41.82	42.8	41.92	41.37	41.4	41.95	41.95
SPP South - Energy Price - 1H2023	5453	12/5/2037	12/5/2037	40.69	40.69	41.95	41.95	41.95	41.95	47.83	48.4	47.82	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	47.82	46.64	44.8	43.13	42.9	38.69	37.63
SPP South - Energy Price - 1H2023	5454	12/6/2037	12/6/2037	37.63	37.63	37.63	37.63	37.63	37.63	42.9	42.9	42.9	42.67	9.96	9.13	42.67	42.67	42.9	42.9	42.9	46.39	46.39	44.8	43.95	43.54	37.63	37.63
SPP South - Energy Price - 1H2023	5455	12/7/2037	12/7/2037	40.69	40.69	40.69	40.69	40.69	40.69	42.88	42.88	9.11	8.64	7.99	7.33	6.99	8.64	8.64	38.83	42.88	43.34	44.98	43.18	43.18	43.18	42.46	42.46
SPP South - Energy Price - 1H2023	5456	12/8/2037	12/8/2037	42.46	41.25	42.46	42.46	42.46	43.69	45.16	44.76	44.34	44.54	44.34	43.49	43.41	43.41	43.41	43.41	44.18	43.67	44.28	44.05	44.07	44.23	44.6	43.97
SPP South - Energy Price - 1H2023	5457	12/9/2037	12/9/2037	44.6	44.6	44.6	44.6	44.6	44.6	46.18	50.8	46.09	45.38	45.65	45.41	44.91	44.43	44.43	44.43	45.2	44.8	46.09	46.09	46.09	46.09	42.46	42.34
SPP South - Energy Price - 1H2023	5458	12/10/2037	12/10/2037	44.17	44.17	44.17	44.17	44.17	44.17	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	45.25	44.17	44.17
SPP South - Energy Price - 1H2023	5459	12/11/2037	12/11/2037	40.29	40.29	40.29	40.29	40.29	40.29	41.64	41.64	41.64	41.64	38.83	38.31	38.31	38.31	38.83	41.64	41.64	41.64	41.64	41.64	41.64	41.64	40.29	40.29
SPP South - Energy Price - 1H2023	5460	12/12/2037	12/12/2037	40.29	40.29	40.29	40.29	40.29	40.29	45.93	45.93	45.93	45.93	45.72	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	48.4	48.4	45.93	40.29	40.29
SPP South - Energy Price - 1H2023	5461	12/13/2037	12/13/2037	40.29	40.29	40.29	40.29	40.29	40.29	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	47.34	48.4	45.93	47.85	47.47	42.46	40.29
SPP South - Energy Price - 1H2023	5462	12/14/2037	12/14/2037	39.99	39.99	39.99	40.11	39.99	40.11	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	41.36	39.99	39.99
SPP South - Energy Price - 1H2023	5463	12/15/2037	12/15/2037	39.14	39.14	39.14	39.14	39.14	39.14	40.57	40.88	40.57	40.57	40.57	40.57	38.83	38.83	38.83	38.05	40.57	40.57	40.57	40.57	40.57	40.57	39.14	39.14
SPP South - Energy Price - 1H2023	5464	12/16/2037	12/16/2037	38.43	38.78	38.78	38.78	38.78	38.43	39.9	39.9	39.9	39.9	39.9	39.9	38.83	38.83	39.9	39.9	39.9	41.03	41.57	41.43	41.44	41.41	41.66	38.96
SPP South - Energy Price - 1H2023	5465	12/17/2037	12/17/2037	38.87	37.93	37.99	37.12	37.12	37.12	38.69	38.69	38.69	38.69	38.69	15.91	38.29	35.59	38.69	38.69	38.69	38.69	38.69	38.69	38.69	38.69	37.12	37.86
SPP South - Energy Price - 1H2023	5466	12/18/2037	12/18/2037	34.21	34.21	34.21	34.21	34.21	34.21	36.02	38.1	37.09	37.31	37.07	37.84	35.98	35.98	35.98	35.98	35.98	38.06	38.14	39.57	37.64	38.47	37.71	37.27
SPP South - Energy Price - 1H2023	5467	12/19/2037	12/19/2037	38.06	37.89	37.93	37.71	37.26	38.06	43.39	43.39	43.39	43.39	43.39	39.81	39.92	39.92	39.92	39.92	39.92	43.39	43.39	43.39	43.39	43.39	34.43	34.34
SPP South - Energy Price - 1H2023	5468	12/20/2037	12/20/2037	34.21	34.21	34.21	34.21	34.21	34.21	39.01	41.79	43.39	43.39	43.39	43.39	43.39	43.39	43.39	43.39	43.39	45.25	46.79	45.66	44.75	44.6	38.07	38.07
SPP South - Energy Price - 1H2023	5469	12/21/2037	12/21/2037	38.46	38.46	38.46	38.46	38.46	38.46	38.94	41.23	40.04	38.84	37.54	36.97	36.3	36.3	36.3	36.3	36.3	38.54	38.51	38.84	37.85	38.84	38.46	37.62
SPP South - Energy Price - 1H2023	5470	12/22/2037	12/22/2037	35.09	35.09	35.09	35.09	35.09	35.09	36.8	36.8	36.79	34.88	7.99	7.33	6.99	6.73	7.08	32.83	36.79	36.8	36.8	36.8	36.8	36.8	35.09	35.09
SPP South - Energy Price - 1H2023	5471	12/23/2037	12/23/2037	33.38	33.38	33.38	33.38	33.38	33.38	35.29	37.15	36.36	35.83	35.2	35.2	35.2	35.2	35.2	35.2	35.2	37.44	37.85	38.87	36.74	37.15	36.61	36.44
SPP South - Energy Price - 1H2023	5472	12/24/2037	12/24/2037	36.42	35.14	36.64	36.15	36.64	36.64	39.19	40.72	38.11	38.11	36.55	36.72	36.55	36.55	36.55	36.55	37.17	39.96	38.11	36.55	37.8	37.47	34.83	34.83
SPP South - Energy Price - 1H2023	5473	12/25/2037	12/25/2037	34.83	34.83	34.83	34.83	34.83	34.83	38.2	38.2	38.2	37.37	36.55	36.89	36.55	36.55	36.55	36.55	38.2	38.52	38.3	38.52	37.8	37.47	34.83	34.83
SPP South - Energy Price - 1H2023	5474	12/26/2037	12/26/2037	34.83	34.83	34.83	34.83	34.83	34.83	43.16	43.16	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	41.11	39.7	39.7	39.7	39.7	34.83	34.83
SPP South - Energy Price - 1H2023	5475	12/27/2037	12/27/2037	34.83	34.83	34.83	34.83	34.83	34.83	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	41.58	41.6	41.62	42.8	37.98	37.89
SPP South - Energy Price - 1H2023	5476	12/28/2037	12/28/2037	37.3	37.3	37.3	37.3	37.3	37.3	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	39.37	39.98	39.72	38.85	38.85	37.3	37.3
SPP South - Energy Price - 1H2023	5477	12/29/2037	12/29/2037	36.45	36.45	36.45	36.45	36.45	36.45	40.78	41.23	40.97	40.78	40.78	40.78	40.78	38.32	38.06	40.78	38.06	38.49	39.1	38.84	38.06	38.06	36.45	36.45

SPP South - Energy Price - 1H2023	5478	12/30/2037	12/30/2037	31.81	31.81	31.81	31.81	31.81	31.81	33.75	33.75	33.75	33.75	33.75	33.75	33.75	33.75	33.75	33.75	33.75	34.13	33.75	33.75	33.75	33.75	31.81	31.81
SPP South - Energy Price - 1H2023	5479	12/31/2037	12/31/2037	39.72	39.72	39.72	39.72	39.72	39.72	41.11	41.11	41.11	41.11	41.11	41.11	38.36	41.11	41.11	41.11	41.11	41.45	41.11	41.11	41.11	41.11	41.35	39.72
SPP South - Energy Price - 1H2023	5480	1/1/2038	1/1/2038	38.36	38.36	38.36	38.36	38.36	38.36	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	44.37	38.36	38.36
SPP South - Energy Price - 1H2023	5481	1/2/2038	1/2/2038	38.36	38.36	38.36	38.36	38.36	38.36	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	38.36	38.36
SPP South - Energy Price - 1H2023	5482	1/3/2038	1/3/2038	38.36	38.36	38.36	38.36	38.36	38.36	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	44.81	38.36	38.36
SPP South - Energy Price - 1H2023	5483	1/4/2038	1/4/2038	35.37	35.37	35.37	35.37	35.37	35.37	41.25	41.25	41.25	41.25	41.25	41.25	41.25	36.93	23.34	37.95	38.51	41.25	41.25	41.25	41.25	41.25	35.37	35.37
SPP South - Energy Price - 1H2023	5484	1/5/2038	1/5/2038	34.96	34.96	34.96	34.96	34.96	34.96	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	47.18	42.76	41.68	40.82	35.32	34.96
SPP South - Energy Price - 1H2023	5485	1/6/2038	1/6/2038	34.06	34.06	34.06	34.2	34.06	34.06	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	39.89	34.06	34.06
SPP South - Energy Price - 1H2023	5486	1/7/2038	1/7/2038	33.79	33.79	33.79	33.79	33.79	33.79	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	33.79	33.79
SPP South - Energy Price - 1H2023	5487	1/8/2038	1/8/2038	31.27	31.27	31.37	32.96	32.7	32.96	38.98	40.41	40.15	40.01	38.98	38.17	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	31.27	31.27
SPP South - Energy Price - 1H2023	5488	1/9/2038	1/9/2038	31.27	31.27	31.27	31.27	31.27	31.27	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	31.27	31.27
SPP South - Energy Price - 1H2023	5489	1/10/2038	1/10/2038	31.27	31.27	31.27	31.27	31.27	31.27	36.54	36.54	36.54	36.54	36.54	36.54	11.76	7.77	10.41	36.54	36.54	36.54	36.54	36.54	36.54	36.54	31.27	31.27
SPP South - Energy Price - 1H2023	5490	1/11/2038	1/11/2038	35.05	35.05	35.05	35.05	35.05	35.05	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	35.05	35.05
SPP South - Energy Price - 1H2023	5491	1/12/2038	1/12/2038	37.4	37.4	37.4	37.4	37.4	37.4	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	43.37	37.4	37.4
SPP South - Energy Price - 1H2023	5492	1/13/2038	1/13/2038	37.14	37.14	37.14	37.14	37.14	37.14	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	43.09	37.14	37.14
SPP South - Energy Price - 1H2023	5493	1/14/2038	1/14/2038	35.64	35.64	35.64	35.64	35.64	35.64	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	43.51	43.3	41.53	41.53	41.53	35.64	35.64
SPP South - Energy Price - 1H2023	5494	1/15/2038	1/15/2038	36.96	36.96	36.96	36.96	36.96	36.96	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	36.96	36.96
SPP South - Energy Price - 1H2023	5495	1/16/2038	1/16/2038	36.96	36.96	36.96	36.96	36.96	36.96	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	36.96	36.96
SPP South - Energy Price - 1H2023	5496	1/17/2038	1/17/2038	36.96	36.96	36.96	36.96	36.96	36.96	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	43.18	36.96	36.96
SPP South - Energy Price - 1H2023	5497	1/18/2038	1/18/2038	36.36	36.36	36.36	36.36	36.36	36.36	42.28	42.28	42.28	42.28	42.28	42.28	41.05	42.28	6.44	42.28	42.28	42.28	42.28	42.28	42.28	42.28	36.36	36.36
SPP South - Energy Price - 1H2023	5498	1/19/2038	1/19/2038	42.66	42.66	42.66	42.66	42.66	42.66	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	42.66	42.66
SPP South - Energy Price - 1H2023	5499	1/20/2038	1/20/2038	44.82	44.82	44.82	44.82	44.82	44.82	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	51.12	44.82	44.82
SPP South - Energy Price - 1H2023	5500	1/21/2038	1/21/2038	40.17	40.17	40.17	40.17	40.17	40.17	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	40.17	40.17
SPP South - Energy Price - 1H2023	5501	1/22/2038	1/22/2038	39.88	39.88	39.88	39.88	39.88	39.88	45.96	45.96	45.96	9.63	8.92	8.77	7.3	6.82	10.47	9.63	9.63	45.96	45.96	45.96	45.96	45.96	39.88	39.88
SPP South - Energy Price - 1H2023	5502	1/23/2038	1/23/2038	39.88	39.88	39.88	39.88	39.88	39.88	46.59	46.59	46.59	46.59	17.04	17.04	16.91	10.68	17.04	17.04	46.59	46.59	46.59	46.59	46.59	46.59	39.88	39.88
SPP South - Energy Price - 1H2023	5503	1/24/2038	1/24/2038	39.88	39.88	39.88	39.88	39.88	39.88	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	39.88	39.88
SPP South - Energy Price - 1H2023	5504	1/25/2038	1/25/2038	34.4	34.4	34.4	34.4	34.4	34.4	40.24	40.24	40.24	40.24	40.24	40.24	40.24	37.02	40.24	40.24	40.24	40.24	40.24	40.24	40.24	40.24	34.4	34.4
SPP South - Energy Price - 1H2023	5505	1/26/2038	1/26/2038	33.46	33.46	33.46	33.46	33.46	33.46	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25	33.46	33.46
SPP South - Energy Price - 1H2023	5506	1/27/2038	1/27/2038	33.32	33.32	33.32	33.32	33.32	33.32	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	39.11	35.09	34.14
SPP South - Energy Price - 1H2023	5507	1/28/2038	1/28/2038	38.78	38.78	38.78	38.78	38.78	38.78	47.54	48.64	42.78	42.31	42.31	42.31	42.31	42.31	42.31	42.31	42.31	46	48.01	47.65	47.71	47.54	39.01	39.04
SPP South - Energy Price - 1H2023	5508	1/29/2038	1/29/2038	42.9	42.9	42.9	42.9	42.9	42.9	51.87	52.51	46.12	46.12	46.12	46.12	46.12	46.12	46.12	42.43	46.12	46.12	46.12	46.12	46.12	46.12	38.43	38.43
SPP South - Energy Price - 1H2023	5509	1/30/2038	1/30/2038	38.43	38.43	38.43	38.43	38.43	38.43	44.89	44.89	44.89	44.89	44.89	24.17	14.78	14.78	14.55	14.78	24.17	44.89	44.89	44.89	45.23	44.89	39.01	38.43
SPP South - Energy Price - 1H2023	5510	1/31/2038	1/31/2038	38.89	40.46	40.46	42.9	42.9	40.84	50.13	50.13	50.13	50.13	50.13	49.52	44.89	44.89	44.89	44.89	44.89	44.89	46.06	45.59	45.61	44.89	38.43	38.43
SPP South - Energy Price - 1H2023	5511	2/1/2038	2/1/2038	26.1	26.1	26.1	26.1	26.1	26.1	35.38	35.38	35.38	35.38	35.38	20.66	20.66	20.66	14.75	4.42	20.66	33.32	33.32	35.38	35.38	35.38	26.1	26.1
SPP South - Energy Price - 1H2023	5512	2/2/2038	2/2/2038	24.53	24.53	24.53	24.53	24.53	24.53	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	33.51	35.71	35.14	33.51	24.53	24.53
SPP South - Energy Price - 1H2023	5513	2/3/2038	2/3/2038	22.94	22.94	22.94	22.94	22.94	22.94	32.31	36.01	34.36	34.36	33.53	31.61	31.61	31.61	31.61	31.61	31.61	31.61	34.36	35.52	35.52	35.52	25.58	25.58
SPP South - Energy Price - 1H2023	5514	2/4/2038	2/4/2038	27	25.58	25.58	25.58	24.19	25.58	34.1	34.58	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	34.01	27	27
SPP South - Energy Price - 1H2023	5515	2/5/2038	2/5/2038	26.82	26.82	26.82	26.82	26.82	26.82	37.43	37.61	37.01	35.29	35.24	34.04	32.92	32.92	32.92	32.92	32.92	35.78	35.78	36.17	36.82	37.01	26.82	26.82
SPP South - Energy Price - 1H2023	5516	2/6/2038	2/6/2038	26.82	24.79	24.86	24.83	24.04	24.04	32.67	32.56	30.45	30.06	30.06	30.06	30.06	30.06	28.27	9.32	9.47	30.06	30.06	30.45	30.15	30.06	24.04	24.04
SPP South - Energy Price - 1H2023	5517	2/7/2038	2/7/2038	24.04	24.04	24.04	24.04	24.04	24.04	30.06	30.06	30.27	30.06	30.06	30.06	30.06	30.06	30.06	30.06	30.06	30.06	30.73	30.73	30.73	30.06	24.04	24.04
SPP South - Energy Price - 1H2023	5518	2/8/2038	2/8/2038	22.32	22.32	22.32	22.32	22.32	22.32	31.48	31.89	30.87	30.87	30.86	30.86	30.86	28.8	17.28	30.86	30.86	31.31	32.93	32.63	32.4	31.54	22.4	22.32
SPP South - Energy Price - 1H2023	5519	2/9/2038	2/9/2038	22.4	22.4	22.4	22.4	22.4	22.4	31.66	33.85	30.96	30.96	30.96	30.96	20.35	9.43	11.35	14.92	20.35	30.96	30.96	30.96	30.96	30.96	22.4	22.4
SPP South - Energy Price - 1H2023	5520	2/10/2038	2/10/2038	23.03	23.03	23.03	23.03	23.03	23.03	31.72	31.72	31.72	23.57	4.51	4.63	4.51	4.46	4.42	4.42	4.25	31.72	31.72	34.73	34.66	34.78	25.29	25.31
SPP South - Energy Price - 1H2023	5521	2/11/2038	2/11/2038	23.46	22.84	22.9	23.63	23.42	23.63	32.26	34.34	31.49	31.49	31.49	31.49	31.49	31.49	31.12	31.23	31.49	31.49	31.49	33.4	33.08	32.49	22.84	22.84
SPP South - Energy Price - 1H2023	5522	2/12/2038	2/12/2038	22.1	22.1	22.1	22.1	22.1	24.62	30.61	30.61	30.61	30.6	30.6	30.6	30.6	4.46	29.25	4.42	28.16	30.6	30.61	30.61	30.61	30.61	22.1	22.1
SPP South - Energy Price - 1H2023	5523	2/13/2038	2/13/2038	22.1	22.1	22.1	22.1	22.1	22.1	27.63	30.04	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	22.1	22.1
SPP South - Energy Price - 1H2023	5524	2/14/2038	2/14/2038	22.1	22.1	22.1	22.1	22.1	22.1	27.63	27.89	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.63	27.73	30.78	30.78	24.62	22.65
SPP South - Energy Price - 1H2023	5525	2/15/2038	2/15/2038	29.11	29.81	29.11	29.11	29.95	29.95	40.39	40.39	41.02	40.66	40.39	40.39	40.36	39.74	39.74	39.1	39.74	40.36	40.36	40.56	40.36	40.26	29.11	28.74
SPP South - Energy Price - 1H2023	5526	2/16/2038	2/16/2038	25.58	28.36	28.18	28.25	28.36	29.13	38.25	38.84	37.51	37.51	37.51	34.51	34.51	36.48	19.58	34.51	35.5	35.94	37.51	37.51	37.51	37.51	28.36	28.02
SPP South - Energy Price - 1H2023	5527	2/17/2038	2/17/2038	34.17	34.17	34.17	34.17	34.17	34.17	48.13	48.13	31.74	5.58	4.95	4.51	4.51	4.46	0.81	4.42	4.25	39.8	48.13	48.13	48.13	48.13	34.17	34.17
SPP South - Energy Price - 1H2023	5528	2/18/2038	2/18/2038	27.43	27.43	27.43	27.43	27.43	27.43	37.19	37.19	34.73	34.73	30.31	4.63	4.51	0.84	6.73	6.73	6.73	37.19	37.19	37.19	37.19	37.19	27.44	27.43
SPP South - Energy Price - 1H2023	5529	2/19/2038	2/19/2038	25.37	25.37	24.99	25.37	25.37	25.37	34.35	34.27	34.27	34.27	4.95	4.63	4.51	4.46	4.95	4.95	34.27	34.27	34.27	34.27	34.27	34.27	24.99	24.99
SPP South - Energy Price - 1H2023	5530	2/20/2038	2/20/2038	24.99	24.99	24.99	24.99	24.99	24.99	31.25	32	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.7	32.01	31.25	24.99	24.99
SPP South - Energy Price - 1H2023	5531	2/21/2038	2/21/2038	24.99	24.99	24.99	24.99	24.99	24.99	31.25	31.35	31.58	31.25	31.25	31.25	31.25	6.09	10.36	14.34	10.36	31.25	31.25	31.25	31.25	31.25	24.99	24.99
SPP South - Energy Price - 1H2023	5532	2/22/2038	2/22/2038	23.16	23.16	23.16	23.16	23.16	23.16	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	35.2	35.58	32.16	32.09	25.34	23.16
SPP South - Energy Price - 1H2023	5533	2/23/2038	2/23/2038	25.34	25.34	25.34	25.34	25.34	27.68	37.54	37.32	34.03	34.03	34.03	34.03	34.03	34.03	34.03	33.05	34.03	34.03	34.03	34.03	34.03	34.03	24.79	24.79
SPP South - Energy Price - 1H2023	5534	2/24/2038	2/24/2038	22.61	22.61	22.61	22.61	22.61	22.61	32.04	31.7	31.43	31.43	25.29	25.09	4.74	4.97	5.1	5.3	12.25	31.43	31.43	31.43	31.43	31.43	22.61	22.61
SPP South - Energy Price - 1H2023	5535	2/25/2038	2/25/2038	23.94	23.94	23.94	23.94	23.94	23.94	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	33.01	36.31	33.01	24.58	23.94
SPP South - Energy Price - 1H2023	5536	2/26/2038	2/26/2038	24.22	24.22	23.72	24.22	23.72	24.22	33	33.11	33.01	32.6	32.41	32.59	32.3	32.3	32.3	32.3	32.3	32.3	32.61	32.47	32.3	32.3	23.34	23.34
SPP South - Energy Price - 1H2023	5537	2/27/2038	2/27/2038	23.34	23.34	23.34	23.34	23.34	23.34	29.19	29.19	5.66	5.47	4.96	4.98	5.09	5.34	5.47	5.69	5.47	8.3	29.19	29.19	29.19	29.19	23.34	23.34
SPP South - Energy Price - 1H2023	5538	2/28/2038	2/28/2038	23.34	23.34	23.34	23.34	23.34	23.34	29.19	29.19	29.19	5.5	5.5	4.98	5.09	5.34	5.5	5.69	5.58	8.96	29.19	29.19	29.19	29.19	23.34	23.34
SPP South - Energy Price - 1H2023	5539	3/1/2038	3/1/2038	20.79	20.79	20.79	20.79	20.79	20.79	23.56	23.56	3.17	3.08	17.97	20.39	20.28	23.56	18.75	5.71	14.96	21.72	23.56	23.56	23.56	23.56	20.79	20.79
SPP South - Energy Price - 1H2023	5540	3/2/2038	3/2/2038	17.59	17.59	17.59	17.59	17.59	17.59	20.34	20.34	20.34	11.63	2.77	2.79	2.85	2.99	3.06	3.19	3.12	3.06	20.34	20.34	20.34	20.34	17.59	17.59
SPP South - Energy Price - 1H2023	5541	3/3/2038	3/3/2038	19.2	19.2	19.2	19.2	19.2	19.2	21.97	21.97	21.97	21.97	21.97	21.97	21.97	21.97	21.04	21.97	21.97	21.97	21.97	21.97	21.97	21.97	19.2	19.2
SPP South - Energy Price - 1H2023	5542	3/4/2038	3/4/2038	19.2	19.2	18.71	19.2	19.2	19.2	21.48	21.48	21.8	21.48	21.48	21.48	21.48	21.48	21.48	3.19	19.76	21.48	21.48	21.48	21.48	21.48	20.87	20.74
SPP South - Energy Price - 1H2023	5543	3/5/2038	3/5/2038	18.77	18.77	18.77	18.77	19.23	19.23	21.66	20.01	19.52	19.52	19.52	18.12	19.52	16.69	3.53	16.69	18.51	19.52	19.52	19.52	19.52	19.52	16.76	16.76
SPP South - Energy Price - 1H2023	5544	3/6/2038	3/6/2038	16.76	16.76	16.76	16.76	16.76	16.76	19.62	19.62	18.79	18.33	17.78	17.9	19.62	19.62	19.62	19.62	19.62	19.62	19.93	19.93	19.93	19.93	16.76	16.76
SPP South - Energy Price - 1H2023	5545	3/7/2038	3/7/2038	16.76	16.76	16.76	16.76	16.76	16.76	19.62	19.62	19.62	19.62	19.62	19.62	19.62	18.31	18.31	19.62	19.62	19.62	19.9	19.62	19.62	19.62	16.76	16.76
SPP South - Energy Price - 1H2023	5546	3/8/2038	3/8/2038	15.61	15.61	15.61	15.61	15.61	15.61	17.5	17.5	17.5	15.93	15.93	15.93	2.85	15.67	15.93	15.93	16.13	17.4	17.5	17.5	17.5	17.5	15.61	15.61
SPP South - Energy Price - 1H2023	5547	3/9/2038	3/9/2038	16.32	16.32	16.32	16.32	16.32	16.32	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	16.32	16.32
SPP South - Energy Price - 1H2023	5548	3/10/2038	3/10/2038	16.5	16.5	16.5	16.5	16.5	16.5	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.86	19.56	18.39	18.39	16.5	16.5
SPP South - Energy Price - 1H2023	5549	3/11/2038	3/11/2038	17.16	17.16	17.16	17.16	17.16	17.53	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	17.16	17.16
SPP South - Energy Price - 1H2023	5550	3/12/2038	3/12/2038	16.43	16.43	16.43	16.43	16.43	16.43	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	16.43	16.43
SPP South - Energy Price - 1H2023	5551	3/13/2038	3/13/2038	16.43	16.43	16.43	16.43	16.43	16.43	19.24	19.24	19.24	3.67	3.31	3.33	0.58	3.57	3.66	3.8	3.73	3.66	19.24	19.24	19.24	19.24	16.43	16.43
SPP South - Energy Price - 1H2023	5552	3/14/2038	3/14/2038	16.43	16.43	16.43	16.43	16.43	16.43	19.24	19.24	19.88	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24	16.43	16.43
SPP South - Energy Price - 1H2023	5553	3/15/2038	3/15/2038	17.05	17.05	17.05	17.05	17.05	17.05	19	19	19	19	19	19	18.99	19	19	19	18.99	18.99	18.99	19	18.99	18.99	17.05	17.05
SPP South - Energy Price - 1H2023	5554	3/16/2038	3/16/2038	16.81	16.81	16.81	16.81	16.81	16.81	18.76	18.76	18.76	17.91	17.91	16.48	16.48	5.47	16.48	7.06	16.48	16.48	18.04	18.76	18.76	18.76	16.81	16.81
SPP South - Energy Price - 1H2023	5555	3/17/2038	3/17/2038	16.93	16.93	16.93	16.93	16.93	16.93	18.88	18.88	18.88	3.08	3.06	2.79	2.85	2.99	3.06	3.19	7.18	7.55	18.88	18.88	18.88	18.88	16.93	16.93
SPP South - Energy Price - 1H2023	5556	3/18/2038	3/18/2038	17.99	17.99	17.99	17.99	18.02	20.1	23.1	23.08	22.92	22.39	20.74	21.94	20.74	20.74	20.74	20.74	20.74	20.74	21.9	22.18	20.74	20.74	17.99	17.99
SPP South - Energy Price - 1H2023	5557	3/19/2038	3/19/2038	17.48	17.48	17.48	17.48	17.48	17.48	20.22	18.64	3.17	3.08	2.77	2.79	0.48	3.17	3.17	6.03	5.55	20.22	20.22	20.22	20.22	20.22	17.48	17.48
SPP South - Energy Price - 1H2023	5558	3/20/2038	3/20/2038	17.48	17.48	17.48	17.48	17.48	17.98	20.69	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	20.47	17.48	17.48
SPP South - Energy Price - 1H2023	5559	3/21/2038	3/21/2038	17.48	17.48	17.48	17.48	17.48	17.48	20.47	20.47	20.47	20.47	20.47	20.47	20.47	3.57	20.47	6.15	20.47	20.47	20.47	20.47	20.47	20.47	17.48	17.48
SPP South - Energy Price - 1H2023	5560	3/22/2038	3/22/2038	17.86	17.86	17.86	17.86	17.86	19.94	22.76	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	21.31	22.54	21.31	21.31	21.31	21.31	17.86	17.86

SPP South - Energy Price - 1H2023	5561	3/23/2038	3/23/2038	17.24	17.24	17.24	17.24	17.24	17.24	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	21.07	21.43	21.43	21.26	21.43	22.33	22.33	21.43	19.23	19.23
SPP South - Energy Price - 1H2023	5562	3/24/2038	3/24/2038	18.52	18.52	18.15	16.61	18.15	18.15	19.83	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	16.89	17.07
SPP South - Energy Price - 1H2023	5563	3/25/2038	3/25/2038	16.35	17.23	17.23	17.23	17.23	17.47	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	18.42	15.69	15.69
SPP South - Energy Price - 1H2023	5564	3/26/2038	3/26/2038	14.68	14.68	14.68	14.68	14.68	14.68	17.4	17.4	16.01	17.4	17.4	10.16	10.21	17.4	17.4	17.4	17.4	17.4	17.4	19.11	18.62	19.41	16.32	14.68
SPP South - Energy Price - 1H2023	5565	3/27/2038	3/27/2038	14.68	14.68	14.68	15.95	14.68	14.68	18.67	17.18	17.18	17.18	17.18	17.18	17.18	17.18	17.18	17.18	17.18	17.71	19.11	19.11	18.67	17.71	14.68	14.68
SPP South - Energy Price - 1H2023	5566	3/28/2038	3/28/2038	14.68	14.68	14.68	14.68	14.68	14.68	17.18	17.18	17.18	5.02	4.71	4.76	4.94	5.02	5.01	5.02	5.55	14.45	17.18	17.18	17.18	17.18	14.68	14.68
SPP South - Energy Price - 1H2023	5567	3/29/2038	3/29/2038	14.68	13.5	14.5	14.5	14.68	15.01	17.85	13.24	4.13	3.97	5.01	5.68	16.07	16.07	16.07	6.95	17.85	17.85	18.33	18.16	18.22	18.18	15.12	15.12
SPP South - Energy Price - 1H2023	5568	3/30/2038	3/30/2038	15.89	15.89	15.89	15.89	15.89	15.89	18.62	18.62	18.62	18.62	18.62	3.99	6.02	16.16	7.16	4.49	18.62	18.62	18.62	18.62	18.62	18.62	15.89	15.89
SPP South - Energy Price - 1H2023	5569	3/31/2038	3/31/2038	15.93	15.93	15.93	15.93	15.93	15.93	18.67	18.67	18.67	15.95	15.95	3.99	15.95	15.95	15.95	18.67	18.67	18.67	18.67	18.67	18.67	18.67	15.93	15.93
SPP South - Energy Price - 1H2023	5570	4/1/2038	4/1/2038	7.61	7.61	7.61	7.61	7.61	7.61	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	7.73	8.4	8.4	8.4	8.4	8.4	8.4	7.61	7.61
SPP South - Energy Price - 1H2023	5571	4/2/2038	4/2/2038	7.13	7.13	7.13	7.13	7.13	7.13	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.13	7.13
SPP South - Energy Price - 1H2023	5572	4/3/2038	4/3/2038	7.13	7.13	7.75	7.75	7.75	7.21	8.96	8.96	8.96	8.96	8.96	8.96	3.35	2.35	2.35	2.51	3.35	8.96	8.99	8.96	8.96	8.99	7.15	7.13
SPP South - Energy Price - 1H2023	5573	4/4/2038	4/4/2038	7.13	7.13	7.13	7.13	7.13	7.13	8.96	8.96	8.78	8.27	8.96	8.96	8.96	8.96	8.96	8.96	8.96	8.96	9.53	9.82	9.53	9.53	7.13	7.13
SPP South - Energy Price - 1H2023	5574	4/5/2038	4/5/2038	6.98	6.98	6.98	6.98	6.98	6.98	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.13	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	6.98	6.98
SPP South - Energy Price - 1H2023	5575	4/6/2038	4/6/2038	7.22	7.22	7.22	7.22	7.22	7.22	7.98	7.98	3.17	3.17	1.62	1.64	3.17	4.83	4.45	4.45	6.68	7.98	8.42	7.98	8.69	7.98	7.23	7.22
SPP South - Energy Price - 1H2023	5576	4/7/2038	4/7/2038	7.43	7.43	7.43	7.43	7.43	7.43	8.18	8.18	7.35	7.35	7.99	7.35	7.35	7.35	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18	7.43	7.43
SPP South - Energy Price - 1H2023	5577	4/8/2038	4/8/2038	7.33	7.33	7.33	7.33	7.33	7.33	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.33	7.33
SPP South - Energy Price - 1H2023	5578	4/9/2038	4/9/2038	7.23	7.23	7.23	7.23	7.23	7.38	7.67	7.67	6.64	4.57	3.6	3.6	3.6	3.6	2.78	3.6	1.91	3.6	7.67	7.67	7.67	7.67	7.23	7.23
SPP South - Energy Price - 1H2023	5579	4/10/2038	4/10/2038	7.23	7.23	7.23	7.23	7.23	7.23	9.09	9.09	2.31	0.32	0.36	0.35	0.29	0.28	0.3	0.33	2.6	7.69	9.09	9.09	9.09	9.09	7.23	7.23
SPP South - Energy Price - 1H2023	5580	4/11/2038	4/11/2038	7.23	7.23	7.23	7.23	7.23	7.23	9.09	9.09	9.09	8.36	9.09	8.36	2.75	8.36	8.36	9.09	9.09	9.09	9.09	9.09	9.09	9.09	7.23	7.23
SPP South - Energy Price - 1H2023	5581	4/12/2038	4/12/2038	7.2	7.2	7.2	7.2	7.2	7.2	7.64	7.64	7.64	7.64	7.64	7.64	3.44	2.68	2.83	7.03	7.03	7.64	7.64	7.64	7.64	7.64	7.2	7.2
SPP South - Energy Price - 1H2023	5582	4/13/2038	4/13/2038	7.28	7.28	7.28	7.28	7.28	7.28	7.71	7.71	7.71	7.71	7.71	3.67	2.98	2.96	3.67	3.67	2.7	7.71	7.71	7.71	7.71	7.71	7.28	7.28
SPP South - Energy Price - 1H2023	5583	4/14/2038	4/14/2038	7.38	7.38	7.38	7.38	7.38	7.38	7.8	7.31	1.7	1.63	0.27	1.73	1.7	1.73	1.73	2.28	6.69	7.8	7.8	7.8	7.8	7.8	7.38	7.38
SPP South - Energy Price - 1H2023	5584	4/15/2038	4/15/2038	7.25	7.25	7.25	7.25	7.25	7.25	7.68	7.28	6.57	1.63	1.62	1.85	2.01	1.73	1.73	1.85	1.91	6.57	6.7	7.68	7.68	7.68	7.25	7.25
SPP South - Energy Price - 1H2023	5585	4/16/2038	4/16/2038	7.11	7.11	7.11	7.11	7.11	7.11	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.11	7.11
SPP South - Energy Price - 1H2023	5586	4/17/2038	4/17/2038	7.11	7.11	7.11	7.11	7.11	7.11	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	7.11	7.11
SPP South - Energy Price - 1H2023	5587	4/18/2038	4/18/2038	7.11	7.11	7.11	7.11	7.11	7.11	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	7.11	7.11
SPP South - Energy Price - 1H2023	5588	4/19/2038	4/19/2038	6.96	6.96	6.96	6.96	6.96	6.96	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.57	7.59	7.61	7.64	7.7	7.08	6.96
SPP South - Energy Price - 1H2023	5589	4/20/2038	4/20/2038	7.08	7.08	7.08	7.08	7.08	7.08	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.7	7.64	7.66	7.56	7.08	7.08
SPP South - Energy Price - 1H2023	5590	4/21/2038	4/21/2038	6.92	6.92	6.92	6.92	6.92	6.92	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	7.37	6.92	6.92
SPP South - Energy Price - 1H2023	5591	4/22/2038	4/22/2038	6.82	6.82	6.82	6.82	6.82	6.82	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	6.82	6.82
SPP South - Energy Price - 1H2023	5592	4/23/2038	4/23/2038	6.79	6.79	6.79	6.79	6.79	6.79	7.25	7.25	7.25	7.25	7.25	7.25	6.67	7.22	6.43	7.25	7.25	7.25	7.25	7.25	7.25	7.25	6.79	6.79
SPP South - Energy Price - 1H2023	5593	4/24/2038	4/24/2038	6.79	6.79	6.79	6.79	6.79	6.79	8.53	8.49	7.42	7.42	2.21	2.23	2.32	2.35	2.35	2.51	2.6	2.73	2.51	8.54	8.54	8.54	6.79	6.79
SPP South - Energy Price - 1H2023	5594	4/25/2038	4/25/2038	6.79	6.79	6.79	6.79	6.79	6.79	8.54	8.54	2.59	2.53	2.21	2.59	2.59	2.35	2.59	2.59	2.6	8.54	8.54	8.54	8.54	8.54	6.79	6.79
SPP South - Energy Price - 1H2023	5595	4/26/2038	4/26/2038	7.03	7.03	7.03	7.03	7.03	7.03	7.48	6.5	5.98	0.87	0.98	2.94	5.98	5.98	6.5	5.98	5.98	5.98	7.48	7.48	7.48	7.48	7.03	7.03
SPP South - Energy Price - 1H2023	5596	4/27/2038	4/27/2038	7.17	7.17	7.17	7.17	7.17	7.17	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.61	7.72	7.71	7.61	7.38	7.17
SPP South - Energy Price - 1H2023	5597	4/28/2038	4/28/2038	7.14	7.14	7.14	7.14	7.14	7.14	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.6	7.94	7.58	7.58	7.14	7.14
SPP South - Energy Price - 1H2023	5598	4/29/2038	4/29/2038	6.84	6.84	6.84	6.84	6.84	6.84	7.3	7.3	7.3	7.3	6.8	7.3	7.3	7.3	7.3	3.4	7.3	7.3	7.3	7.3	7.3	7.3	6.84	6.84
SPP South - Energy Price - 1H2023	5599	4/30/2038	4/30/2038	6.73	6.73	6.73	6.73	6.73	6.73	7.2	3.49	0.91	1.2	1.3	1.3	1.3	1.56	1.78	4.36	7.2	7.2	7.2	7.2	7.2	7.2	6.73	6.73
SPP South - Energy Price - 1H2023	5600	5/1/2038	5/1/2038	9.93	9.93	9.93	9.93	9.93	9.93	11.43	11.43	11.43	11.43	2.94	10.51	2.94	10.51	10.51	10.51	11.43	11.43	11.43	11.43	11.43	11.43	9.93	9.93
SPP South - Energy Price - 1H2023	5601	5/2/2038	5/2/2038	9.93	9.93	9.93	9.93	9.93	9.93	11.43	3.64	1.79	2.7	3.64	2.94	3.95	3.64	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	9.93	9.93
SPP South - Energy Price - 1H2023	5602	5/3/2038	5/3/2038	9.46	9.46	9.46	9.46	9.46	9.46	6.9	6.9	5.68	6.02	5.68	5.68	3.59	3.59	6.02	5.68	6.9	6.9	6.9	6.9	7.05	6.9	9.46	9.46
SPP South - Energy Price - 1H2023	5603	5/4/2038	5/4/2038	9.7	9.7	9.7	9.7	9.7	9.7	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	9.7	9.7
SPP South - Energy Price - 1H2023	5604	5/5/2038	5/5/2038	9.87	9.87	9.87	9.87	9.87	9.87	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.23	7.18	7.16	9.87	9.87
SPP South - Energy Price - 1H2023	5605	5/6/2038	5/6/2038	10.31	10.31	10.31	10.31	10.31	10.62	7.44	7.44	7.44	7.44	6.85	7.44	6.85	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	10.31	10.31
SPP South - Energy Price - 1H2023	5606	5/7/2038	5/7/2038	10.28	10.28	10.28	10.28	10.28	10.59	7.42	7.42	7.42	7.42	7.42	7.42	8.32	7.42	7.42	7.57	7.42	7.42	8.47	7.77	7.87	7.77	10.57	10.28
SPP South - Energy Price - 1H2023	5607	5/8/2038	5/8/2038	10.28	10.38	10.28	10.28	10.28	10.59	12.24	12.21	12.07	12.03	11.85	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	12.86	12.94	12.86	11.17	10.28
SPP South - Energy Price - 1H2023	5608	5/9/2038	5/9/2038	10.28	10.38	10.38	10.28	10.49	10.59	12.23	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	11.83	10.28	10.28
SPP South - Energy Price - 1H2023	5609	5/10/2038	5/10/2038	10.42	10.42	10.42	10.42	10.64	10.42	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	7.51	10.42	10.42
SPP South - Energy Price - 1H2023	5610	5/11/2038	5/11/2038	10.5	10.5	10.5	10.5	10.5	10.5	7.56	7.56	7.56	7.56	7.56	6.96	6.66	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	10.5	10.5
SPP South - Energy Price - 1H2023	5611	5/12/2038	5/12/2038	10.67	10.67	10.67	10.67	10.67	10.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.85	7.81	7.96	10.81	10.67
SPP South - Energy Price - 1H2023	5612	5/13/2038	5/13/2038	10.81	10.81	10.79	10.79	10.79	10.97	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.86	7.89	7.75	10.81	10.79
SPP South - Energy Price - 1H2023	5613	5/14/2038	5/14/2038	10.72	10.8	10.8	10.71	10.71	10.8	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.69	7.71	7.69	10.72	10.71
SPP South - Energy Price - 1H2023	5614	5/15/2038	5/15/2038	10.71	10.71	10.71	10.71	10.71	10.71	12.32	12.32	12.49	12.48	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	10.71	10.71
SPP South - Energy Price - 1H2023	5615	5/16/2038	5/16/2038	10.71	10.71	10.71	10.71	10.71	10.71	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	10.71	10.71
SPP South - Energy Price - 1H2023	5616	5/17/2038	5/17/2038	11.08	11.08	11.08	11.08	11.08	11.08	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	11.08	11.08
SPP South - Energy Price - 1H2023	5617	5/18/2038	5/18/2038	11.17	11.17	11.17	11.17	11.17	11.17	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	11.17	11.17
SPP South - Energy Price - 1H2023	5618	5/19/2038	5/19/2038	11.03	11.03	11.03	11.03	11.03	11.03	7.9	7.45	6.85	3.23	6.85	6.89	6.89	7.49	7.49	6.89	6.89	7.9	7.9	7.9	7.9	7.9	11.03	11.03
SPP South - Energy Price - 1H2023	5619	5/20/2038	5/20/2038	10.92	10.92	10.92	10.92	10.92	10.92	7.83	7.43	6.84	6.84	6.84	6.84	6.84	7.83	7.83	7.83	7.83	7.83	7.83	7.83	7.84	7.83	10.92	10.92
SPP South - Energy Price - 1H2023	5620	5/21/2038	5/21/2038	10.44	10.44	10.44	10.44	10.44	10.44	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	10.44	10.44
SPP South - Energy Price - 1H2023	5621	5/22/2038	5/22/2038	10.44	10.44	10.44	10.44	10.44	10.44	12.02	11.05	12.02	10.78	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	10.44	10.44
SPP South - Energy Price - 1H2023	5622	5/23/2038	5/23/2038	10.44	10.44	10.44	10.44	10.44	10.44	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	12.02	10.44	10.44
SPP South - Energy Price - 1H2023	5623	5/24/2038	5/24/2038	9.45	9.45	9.45	9.45	9.45	9.45	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.97	6.9	9.79	9.45
SPP South - Energy Price - 1H2023	5624	5/25/2038	5/25/2038	10.83	10.83	10.83	10.83	10.83	10.83	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	8.85	8.87	8.77	11.28	10.83
SPP South - Energy Price - 1H2023	5625	5/26/2038	5/26/2038	11.22	11.28	11.28	11.21	11.18	11.56	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	11.18	11.18
SPP South - Energy Price - 1H2023	5626	5/27/2038	5/27/2038	11.25	11.25	11.25	11.25	11.25	11.25	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04	11.25	11.25
SPP South - Energy Price - 1H2023	5627	5/28/2038	5/28/2038	11.45	11.45	11.45	11.45	11.45	11.45	8.16	8.16	8.16	0.48	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	11.45	11.45
SPP South - Energy Price - 1H2023	5628	5/29/2038	5/29/2038	11.45	11.45	11.45	11.45	11.45	11.45	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	11.45	11.45
SPP South - Energy Price - 1H2023	5629	5/30/2038	5/30/2038	11.45	11.45	11.45	11.45	11.45	11.45	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	13.17	11.45	11.45
SPP South - Energy Price - 1H2023	5630	5/31/2038	5/31/2038	11.45	11.45	11.45	11.45	11.45	11.45	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.27	8.16	8.16	11.45	11.45
SPP South - Energy Price - 1H2023	5631	6/1/2038	6/1/2038	23.31	23.31	23.31	23.31	23.31	23.31	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	20.81	21.42	21.85	23.62	23.54	22.35	24.96	24.42
SPP South - Energy Price - 1H2023	5632	6/2/2038	6/2/2038	24.15	23.92	23.6	23.6	24.15	24.15	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.03	21.33	21.03	21.03	21.03	23.6	23.6
SPP South - Energy Price - 1H2023	5633	6/3/2038	6/3/2038	22.23	22.23	22.23	22.23	22.23	22.23	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	22.23	22.23
SPP South - Energy Price - 1H2023	5634	6/4/2038	6/4/2038	22.06	22.06	22.06	22.06	22.06	22.06	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	20.02	20.97	20.5	20.81	23.47	22.58
SPP South - Energy Price - 1H2023	5635	6/5/2038	6/5/2038	22.06	22.06	22.06	22.06	22.06	22.06	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.59	22.49	22.06	22.06
SPP South - Energy Price - 1H2023	5636	6/6/2038	6/6/2038	22.06	22.06	22.06	22.06	22.1	22.34	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.74	22.89	22.56	22.06	22.56
SPP South - Energy Price - 1H2023	5637	6/7/2038	6/7/2038	24.51	24.15	24.15	24.15	24.15	24.15	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	24.15	24.15
SPP South - Energy Price - 1H2023	5638	6/8/2038	6/8/2038	26.25	26.25	26.25	26.25	26.25	26.25	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.63	23.88	23.6	26.4	26.25
SPP South - Energy Price - 1H2023	5639	6/9/2038	6/9/2038	26.9	26.9	26.9	26.9	26.9	26.9	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	24.07	23.6	23.6	26.9	26.9
SPP South - Energy Price - 1H2023	5640	6/10/2038	6/10/2038	26.33	26.33	26.33	26.33	26.33	26.33	23.16	23.16	23.16	23.16	23.16	23.16	23.16	24.78	24.78	26.41	24.78	24.47	24.78	24.78	24.78	24.53	26.33	26.33
SPP South - Energy Price - 1H2023	5641	6/11/2038	6/11/2038	24.19	24.19	24.19	24.19	24.19	24.19	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.87	21.49	24.54	24.19
SPP South - Energy Price - 1H2023	5642	6/12/2038	6/12/2038	24.19	24.19	24.19	24.19	24.19	24.19	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.19	24.19
SPP South - Energy Price - 1H2023	5643	6/13/2038	6/13/2038	24.19	24.19	24.19	24.19	24.19	24.19	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.19	24.19

SPP South - Energy Price - 1H2023	5644	6/14/2038	6/14/2038	26.43	26.43	26.43	26.43	26.43	26.43	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	26.43	26.43
SPP South - Energy Price - 1H2023	5645	6/15/2038	6/15/2038	25.37	25.37	25.37	25.37	25.37	25.37	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	25.37	25.47
SPP South - Energy Price - 1H2023	5646	6/16/2038	6/16/2038	24.25	24.25	24.25	24.27	24.46	24.46	21.54	21.54	21.54	21.54	21.54	21.54	21.54	21.54	21.54	21.54	21.54	21.54	24.59	24.59	24.59	24.59	27.26	24.27
SPP South - Energy Price - 1H2023	5647	6/17/2038	6/17/2038	25.73	25.65	25.65	25.65	25.65	25.65	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	25.82	25.82	26.14	24.24	28.09	26.18
SPP South - Energy Price - 1H2023	5648	6/18/2038	6/18/2038	26.74	26.74	26.44	26.67	26.67	26.74	23.02	23.05	23.02	23.02	23.02	23.02	24.07	23.02	24.74	26.25	26.25	25.56	26.52	26.25	26.25	26.25	28.64	27.36
SPP South - Energy Price - 1H2023	5649	6/19/2038	6/19/2038	26.67	26.28	26.21	26.29	26.41	26.51	26.77	26.7	26.86	26.7	26.7	29.02	27.19	29.02	26.66	26.66	26.66	26.66	28.45	27.73	26.66	26.66	26.3	26.15
SPP South - Energy Price - 1H2023	5650	6/20/2038	6/20/2038	26.26	26.15	26.15	26.15	26.15	26.15	26.66	26.66	26.66	26.66	26.66	26.66	26.66	28.98	26.66	26.66	26.66	26.66	26.66	27.73	28.41	28.85	26.67	26.31
SPP South - Energy Price - 1H2023	5651	6/21/2038	6/21/2038	27.16	26.99	26.99	26.99	26.99	27.35	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.67	23.68	23.67	27.29	27.21
SPP South - Energy Price - 1H2023	5652	6/22/2038	6/22/2038	27.29	27.29	27.29	27.29	27.29	27.65	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	27.44	27.54
SPP South - Energy Price - 1H2023	5653	6/23/2038	6/23/2038	28.03	28.05	27.98	28.03	28.05	28.15	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	24.29	27.79	28.08
SPP South - Energy Price - 1H2023	5654	6/24/2038	6/24/2038	28.08	28.08	28.08	28.08	28.08	28.08	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	24.52	28.08	28.39
SPP South - Energy Price - 1H2023	5655	6/25/2038	6/25/2038	27.25	27.27	27.2	27.3	27.49	27.72	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	24.01	24.5	24.28	27.51	27.59
SPP South - Energy Price - 1H2023	5656	6/26/2038	6/26/2038	28.01	27.73	27.06	27.48	27.06	27.2	27.93	27.81	28.22	27.59	27.59	27.59	27.59	27.59	29.99	27.59	27.59	27.59	28.63	28.95	29.5	27.59	27.06	27.06
SPP South - Energy Price - 1H2023	5657	6/27/2038	6/27/2038	27.06	27.06	27.06	27.48	27.54	27.2	27.59	27.59	27.59	27.59	27.59	27.59	27.59	27.59	27.59	28.63	27.59	29.99	27.59	27.93	29.21	27.59	27.11	27.06
SPP South - Energy Price - 1H2023	5658	6/28/2038	6/28/2038	26.38	25.55	25.55	25.55	25.55	26.36	22.85	23.25	23.37	23.25	22.55	22.83	22.55	23.56	23.38	22.57	22.55	22.55	23.01	23.25	23.25	22.55	25.55	25.55
SPP South - Energy Price - 1H2023	5659	6/29/2038	6/29/2038	25.75	25.75	25.75	25.75	25.75	25.75	22.82	24.34	24.64	25.26	25.9	25.9	25.9	25.9	26.23	25.9	25.9	25.9	25.9	26.23	26.23	26.23	28.79	28.19
SPP South - Energy Price - 1H2023	5660	6/30/2038	6/30/2038	28.73	28.38	27.26	28.38	28.38	28.38	24.2	23.08	23.08	23.08	23.08	24.76	24.76	24.76	24.52	23.71	24.76	23.47	24.76	24.76	25.6	24.93	28.73	26.99
SPP South - Energy Price - 1H2023	5661	7/1/2038	7/1/2038	32.65	31.81	31.53	30.67	32.62	32.29	34.37	33.3	34.04	33.89	33.86	34.94	37.49	37.77	37.81	39.24	37.49	37.8	41.46	37.81	37.81	40.37	31.81	29.19
SPP South - Energy Price - 1H2023	5662	7/2/2038	7/2/2038	41.27	41.27	41.15	40.15	41.16	41.27	45.52	45.52	49.31	48.41	45.52	46.08	51.52	51.28	53.31	53.31	52.8	54.24	56.45	54.86	54.76	51.52	41.27	42.82
SPP South - Energy Price - 1H2023	5663	7/3/2038	7/3/2038	42.84	41.27	39.53	39.2	40.38	39.77	46.48	47.62	48.95	46.02	46.48	47.62	50.53	50.53	49.95	56.62	49.18	56.28	50.53	47.62	48.49	48.25	41.27	40.33
SPP South - Energy Price - 1H2023	5664	7/4/2038	7/4/2038	40.17	40.15	40.15	38.51	38.43	39.77	43.51	43.51	43.51	43.51	43.51	43.53	43.51	47.3	43.51	43.51	43.51	43.51	43.51	47.41	47.62	47.62	40.15	38.01
SPP South - Energy Price - 1H2023	5665	7/5/2038	7/5/2038	38.2	37.93	37.84	37.88	38.13	37.81	40.92	40.18	39.89	39.89	39.89	39.89	40.99	40.6	40.3	39.89	39.89	39.89	40.96	39.89	41.06	41.95	37.11	39.03
SPP South - Energy Price - 1H2023	5666	7/6/2038	7/6/2038	41.2	39.49	39.49	39.49	41.14	39.68	45.14	42.56	42.56	45.74	44.15	43.43	45.71	43.51	45.92	48.51	48.51	48.51	49.17	46.2	48.51	49.09	43.27	43.18
SPP South - Energy Price - 1H2023	5667	7/7/2038	7/7/2038	42.82	41.73	41.64	41.59	40.71	42.68	46.03	47.3	48.03	45.69	48.73	48.73	48.09	47.5	42.18	44.24	42.18	48.09	48.09	48.09	48.09	48.09	42.82	39.85
SPP South - Energy Price - 1H2023	5668	7/8/2038	7/8/2038	38.02	38.02	38.02	38.02	39.33	39.33	41.54	41.86	41.16	41.16	41.16	41.16	41.16	41.16	46.95	44.88	46.95	47.18	47.55	50.45	45.65	47.55	47.78	38.02
SPP South - Energy Price - 1H2023	5669	7/9/2038	7/9/2038	41.19	41.19	41.19	37.75	37.62	39.48	40.78	40.78	40.78	40.78	44.11	41.34	46.47	46.1	46.63	46.5	47.11	47.11	48.14	47.11	47.2	47.11	42.35	41.19
SPP South - Energy Price - 1H2023	5670	7/10/2038	7/10/2038	41.19	41.19	40.01	40.05	40.3	39.48	44.62	44.62	44.62	44.62	44.62	44.62	44.62	44.62	44.62	46.67	46.34	48.85	49.59	50.22	48.85	48.85	41.19	41.19
SPP South - Energy Price - 1H2023	5671	7/11/2038	7/11/2038	41.1	37.62	37.62	37.62	37.62	38.81	44.62	44.62	44.62	44.62	44.62	44.62	44.62	44.62	48.85	46.67	50	50.22	50.34	59.77	53.18	52.39	41.37	41.26
SPP South - Energy Price - 1H2023	5672	7/12/2038	7/12/2038	42.36	41.35	41.26	41.26	41.55	41.53	46.68	45.21	45.71	46.34	45.74	47.72	48.35	45.56	48.35	47.84	44.48	48.35	48.35	48.35	48.35	48.35	42.94	42.54
SPP South - Energy Price - 1H2023	5673	7/13/2038	7/13/2038	42.84	42.84	42.84	41.9	41.74	42.84	47.82	48.29	46.65	47.26	48.94	53.6	54.17	54.15	57.6	57.74	57.38	58.19	57.6	57.6	57.6	54.14	44.25	43.41
SPP South - Energy Price - 1H2023	5674	7/14/2038	7/14/2038	43.41	43.41	43.41	43.41	43.41	43.41	45.83	44.41	42.68	43.11	42.68	46.6	48.65	48.65	48.65	50.45	49.31	49.31	55.43	53.88	48.92	48.65	43.03	43.03
SPP South - Energy Price - 1H2023	5675	7/15/2038	7/15/2038	43.03	43.03	43.03	43.03	43.03	43.03	43.92	44.21	43.92	43.92	45.56	45.03	43.92	45.13	43.92	44.21	43.92	43.92	49.4	50.74	45.56	50.04	44.85	42.55
SPP South - Energy Price - 1H2023	5676	7/16/2038	7/16/2038	42.69	39.71	39.71	39.71	41.46	41.86	43.56	43.61	42.78	43.11	42.78	42.78	42.78	42.94	43.33	42.78	48.16	48.16	48.75	48.75	48.75	48.75	43.51	43.51
SPP South - Energy Price - 1H2023	5677	7/17/2038	7/17/2038	43.16	41.56	41.09	41.13	41.38	41.06	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	51.19	47.09	51.6	50.99	49.93	51	43.16	41.26
SPP South - Energy Price - 1H2023	5678	7/18/2038	7/18/2038	39.71	39.71	39.71	39.71	40.41	39.91	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09	51.19	52.07	51.6	43.51	41.51
SPP South - Energy Price - 1H2023	5679	7/19/2038	7/19/2038	41.82	40.47	40.39	41.82	41.82	41.26	42.43	43.6	42.3	41.79	46.64	47.12	47.12	47.12	47.73	47.73	47.73	49.83	47.73	47.73	53.52	48.09	44.53	44.32
SPP South - Energy Price - 1H2023	5680	7/20/2038	7/20/2038	42.15	43.34	42.15	42.15	42.15	42.15	44.18	45.23	43	43.23	41.61	47.44	47.44	47.44	47.44	47.44	48.06	46.55	52.14	47.44	47.44	48.19	43.34	42.07
SPP South - Energy Price - 1H2023	5681	7/21/2038	7/21/2038	41.55	40.85	41.55	41.55	41.55	39.74	41.61	41.09	41.09	41.09	41.09	43.88	44.58	41.09	41.09	44.19	46.86	46.03	47.47	47.47	46.86	46.86	41.55	41.55
SPP South - Energy Price - 1H2023	5682	7/22/2038	7/22/2038	40.71	40.71	40.71	40.71	40.71	40.71	42.94	41.51	41.91	42.92	43.55	46.63	46.05	46.63	49.53	48.34	46.28	47.23	50.47	50.65	50.88	50.12	46.37	40.92
SPP South - Energy Price - 1H2023	5683	7/23/2038	7/23/2038	40.3	40.3	40.3	40.3	40.3	40.3	45.48	45.66	46.22	49.76	50.3	51.69	47.55	47.55	51.69	51.69	51.69	51.69	54.48	52.69	51.87	51.69	44.6	42.54
SPP South - Energy Price - 1H2023	5684	7/24/2038	7/24/2038	41.42	41.42	40.3	40.3	40.3	41.42	47.79	47.79	47.22	47.79	47.79	47.79	49.12	49.12	49.12	49.12	49.77	49.12	51.32	51.12	51.1	49.12	40.88	40.3
SPP South - Energy Price - 1H2023	5685	7/25/2038	7/25/2038	40.3	38.99	37.51	38.06	40.3	37.09	43.99	44.03	43.67	43.67	43.67	43.99	47.79	47.79	49.12	49.12	49.12	49.12	49.12	49.12	48.64	49.12	41.42	40.3
SPP South - Energy Price - 1H2023	5686	7/26/2038	7/26/2038	40.19	37.97	38.11	40.19	40.19	39.8	44.3	40.85	40.76	41.8	41.22	45.55	46.12	45.55	45.55	45.55	46.12	46.12	51.56	51.56	48.16	46.12	41.55	40.19
SPP South - Energy Price - 1H2023	5687	7/27/2038	7/27/2038	40.46	40.46	40.4	40.46	39.49	40.46	42.61	42.72	40.38	44.7	45.56	42.46	46.39	46.39	46.38	46.38	46.39	50.11	51.88	50.7	50.42	47.82	41.59	41.59
SPP South - Energy Price - 1H2023	5688	7/28/2038	7/28/2038	40.86	40.86	40.76	37.33	39.81	39.98	42.88	44.88	44.07	46.2	46.2	46.78	46.2	46.78	46.78	46.78	46.78	46.78	51.1	51.02	51.25	46.2	41.29	41.29
SPP South - Energy Price - 1H2023	5689	7/29/2038	7/29/2038	37.71	41.29	41.29	41.29	41.29	41.29	46.61	45.9	42.88	45.41	46.33	47.41	50.77	51.04	50.37	51.04	51.04	50.86	52.82	52.41	51.04	49.02	42.38	41.29
SPP South - Energy Price - 1H2023	5690	7/30/2038	7/30/2038	40.93	42.07	40.82	40.93	42.07	42.07	45.83	44.94	45.76	46.27	45.47	42.94	45.58	46.27	46.27	46.27	46.27	46.27	46.27	46.27	46.27	44.73	40.93	37.39
SPP South - Energy Price - 1H2023	5691	7/31/2038	7/31/2038	37.39	37.39	37.39	37.39	37.39	37.39	44.8	45.52	48.54	48.54	48.54	48.54	48.54	48.54	48.54	48.54	48.54	48.54	49.9	47.64	48.24	48.54	38.74	38.94
SPP South - Energy Price - 1H2023	5692	8/1/2038	8/1/2038	42.61	42.61	42.61	42.61	42.61	42.61	41.23	41.23	41.23	41.23	41.23	41.23	41.23	41.23	41.23	41.23	45.14	45.14	45.14	46.4	46.4	45.14	43.76	42.93
SPP South - Energy Price - 1H2023	5693	8/2/2038	8/2/2038	39.1	39.1	39.1	39.1	39.1	39.39	39.36	39.16	37.46	37.46	38.77	42.8	39.38	42.81	42.81	42.81	43.28	43.28	44.02	46.88	44.76	43.28	46.04	45.97
SPP South - Energy Price - 1H2023	5694	8/3/2038	8/3/2038	48.89	48.48	48.48	48.08	47.54	48.89	45.46	44.83	42.08	42.08	43.44	44.04	47.98	48.62	48.62	50.43	50.43	52.66	53.59	51.7	50.43	47.98	48.89	48.89
SPP South - Energy Price - 1H2023	5695	8/4/2038	8/4/2038	49.77	45.42	46.88	45.42	48.33	47.81	45.15	42.95	42.75	42.75	42.75	42.75	43.07	43.76	44.03	44.14	44.29	48.72	48.72	48.72	46.95	46.95	46.89	45.97
SPP South - Energy Price - 1H2023	5696	8/5/2038	8/5/2038	45.95	45.95	45.95	45.95	45.95	45.95	44.53	43.19	45.95	43.19	44.59	43.19	43.65	46.95	43.19	49.21	49.21	49.78	49.21	49.21	48.92	49.21	47.16	45.97
SPP South - Energy Price - 1H2023	5697	8/6/2038	8/6/2038	49.96	49.96	49.96	49.13	49.96	50.07	42.97	42.97	42.97	42.97	42.97	42.97	42.97	43.98	43.43	48.97	47.04	48.97	49.6	48.97	48.97	48.97	50.07	48.74
SPP South - Energy Price - 1H2023	5698	8/7/2038	8/7/2038	47.22	47.84	45.68	45.68	45.68	45.68	44.21	44.21	44.21	44.21	44.21	44.21	44.21	44.21	47.82	48.19	48.36	48.45	44.57	48.45	48.45	48.45	50.07	50.07
SPP South - Energy Price - 1H2023	5699	8/8/2038	8/8/2038	46.06	50.01	50.07	50.04	48.6	45.68	44.21	44.21	44.21	44.21	44.21	44.21	44.21	48.05	44.21	48.34	48.45	48.5	48.45	48.45	48.5	48.45	49.96	49.96
SPP South - Energy Price - 1H2023	5700	8/9/2038	8/9/2038	46.11	46.11	46.11	46.11	49.02	50.54	44.66	43.5	43.32	47.09	43.32	49.36	49.37	49.37	50.05	50.05	50.05	50.05	50.05	50.05	50.05	49.36	49.53	49.53
SPP South - Energy Price - 1H2023	5701	8/10/2038	8/10/2038	49.53	49.53	49.16	48.65	49.53	49.53	46.14	45.33	42.71	43.55	48.51	49.42	52.53	53.16	53.2	53.16	49.17	49.17	52.89	53.28	53.52	49.17	49.53	49.53
SPP South - Energy Price - 1H2023	5702	8/11/2038	8/11/2038	41.94	41.94	41.94	41.9	41.86	41.94	38.21	38.62	36.87	36.87	36.87	37.44	38.47	39.3	42.36	41.43	42.14	42.36	47.29	47.29	45.46	42.14	41.94	38.99
SPP South - Energy Price - 1H2023	5703	8/12/2038	8/12/2038	37.91	37.91	37.91	37.91	37.91	37.91	35.17	35.53	33.84	33.84	34.86	35.43	36.14	37.56	39.72	39.72	39.1	39.74	41.72	43.04	41.2	39.11	40.14	38.92
SPP South - Energy Price - 1H2023	5704	8/13/2038	8/13/2038	37.31	37.31	37.31	37.31	37.14	37.31	36.29	37.23	35.13	35.29	34.44	34.93	38.25	40.09	38.59	40.09	39.36	40.48	43.15	42.41	40.85	38.59	38.31	38.31
SPP South - Energy Price - 1H2023	5705	8/14/2038	8/14/2038	37.31	37.31	37.31	37.31	37.31	37.31	36.11	36.82	37.07	38.68	38.88	43.77	43.77	43.77	43.77	44.58	43.77	43.77	43.77	43.77	43.14	40.89	38.31	38.02
SPP South - Energy Price - 1H2023	5706	8/15/2038	8/15/2038	37.31	35.48	35.48	35.48	35.48	35.48	35.15	35.14	33.53	33.12	34.34	36.11	34.34	38.81	37.07	36.11	36.98	37.07	43.77	45.17	43.77	42.63	42.25	40.67
SPP South - Energy Price - 1H2023	5707	8/16/2038	8/16/2038	45.69	46.08	45.69	45.2	44.67	45.69	43.37	42.6	39.9	41.28	41.18	45.09	45.26	44.09	45.29	44.04	45.29	44.27	49.36	49.4	48.97	45.54	46.97	45.81
SPP South - Energy Price - 1H2023	5708	8/17/2038	8/17/2038	49.91	49.88	49.51	49	48.46	49.51	45.08	43.64	42.85	42.85	44.23	44.92	45.17	45.53	45.54	48.92	47.34	48.92	55.68	54.44	51.88	48.92	49.91	49.91
SPP South - Energy Price - 1H2023	5709	8/18/2038	8/18/2038	51.26	51.09	50.72	50.21	49.67	50.72	47.68	44.66	43.87	43.87	43.87	43.87	46.3	49.97	50.6	50.68	50.68	50.68	59.84	59.64	56.01	50.68	51.26	50.82
SPP South - Energy Price - 1H2023	5710	8/19/2038	8/19/2038	50.82	50.82	50.82	50.82	50.82	50.82	47.58	46.38	43.77	45.45	46.82	48.37	49.6	52.42	51.28	55.27	58.1	58.1	62.52	60.19	60.08	58.1	62.34	54.19
SPP South - Energy Price - 1H2023	5711	8/20/2038	8/20/2038	50.52	50.52	50.52	50.52	50.52	50.52	48.18	47.45	44.95	44.33	48.83	49.57	51.16	50.42	56.89	56.64	56.89	56.89	58.73	58.07	57.77	56.89	57.44	50.52
SPP South - Energy Price - 1H2023	5712	8/21/2038	8/21/2038	49.13	49.13	48.81	48.49	48.49	48.49	46.92	46.92	44.59	46.14	46.92	47.54	47.54	58.25	63.2	63.41	64.25	66.25	66.11	65.03	65.04	61.7	50.52	50.52
SPP South - Energy Price - 1H2023	5713	8/22/2038	8/22/2038	49.13	49.13	49.13	48.3	47.76	49.13	47.54	45.14	47.54	47.54	47.54	47.54	47.54	47.54	47.54	47.54	48.89	48.89	53.87	51.94	48.89	48.89	49.38	49.38
SPP South - Energy Price - 1H2023	5714	8/23/2038	8/23/2038	49.38	49.38	49.38	49.38	49.38	49.38	47.3	47.95	45.5	44.72	48.39	48.17	48.39	48.23	49.04	48.39	49.04	49.04	51.83	52.68	49.04	49.04	50.72	49.38
SPP South - Energy Price - 1H2023	5715	8/24/2038	8/24/2038	49.36	49.36	48.96	46.97	46.97	49.36	47.88	46.93	44.04	44.23	44.11	47.61	47.63	46.22	50.17	50.17	49.09	50.17	57.35	57.35	50.17	50.17	48.62	47.29
SPP South - Energy Price - 1H2023	5716	8/25/2038	8/25/2038	47.12	47.12	47.12	47.12	47.12	47.12	44.17	44.32	44.17	45.59	45.94	50.31	51.02	55.59	59.16	59.61	66.67	60.47	60.47	60.86	59.48	57.52	58.26	53.14
SPP South - Energy Price - 1H2023	5717	8/26/2038	8/26/2038	52.32	52.32	51.67	52.32	52.32	52.32	50.04	47.6	46.03	46.57	46.18	47.71	50.6	50.86	54.89	56.23	56.46	58.1	58.21	58.21	57.84	55.22	52.32	52.32
SPP South - Energy Price - 1H2023	5718	8/27/2038	8/27/2038	51.95	51.95	51.95	51.95	51.95	51.95	50.55	50.55	50.55	54.78	57.49	57.82	57	53.82	56.48	57.82	57.82	57.82	57.82	57.82	54.13	50.55	50.19	51.95
SPP South - Energy Price - 1H2023	5719	8/28/2038	8/28/2038	51.95	50.19	50.19	50.19	50.19	51.95	48.57	46.85	46.54	46.23	48.57	50.27	50.74	51.71	51.71	55.74	59.82	55.59	61.71	61.71	55.74	50.27	48.27	48.66
SPP South - Energy Price - 1H2023	5720	8/29/2038	8/29/2038	48.67	49.15	49.28	48.64	48.33	48.27	47.57	46.85	46.54	46.16	45.85	46.71	46.71	50.27	50.27	50.27	50.73	50.77	51.71	56.6	58.59	51.71	51.95	51.95
SPP South - Energy Price - 1H2023	5721	8/30/2038	8/30/2038	41.92	42.51	42.7	41.57	41.59	42.7	40.92	37.97	36.59	36.59	39.16	39.21	39.75	42.21	41.83	42.27	42.28	45.32	46.89	46.89	46.89	46.85	48.06	48.13
SPP South - Energy Price - 1H2023	5722	8/31/2038	8/31/2038	48.82	48.82	49.27	48.82	48.82	49.35	47.92	45.04	42.65	43.17	43.3	43.57	42.89	42.65	44.45	42.65	42.65	47.92	48.56	48.56	48.56	47.92	49.45	48.82
SPP South - Energy Price - 1H2023	5723	9/1/2038	9/1/2038	35.53	35.53	35.53	35.53	35.53	35.53	37.86	34.87	34.24	34.24	34.24	34.24	34.24	34.24	34.24	34.24	34.24	37.21	39.02	39.55	39.55	36.81	34.2	33.33
SPP South - Energy Price - 1H2023	5724	9/2/2038	9/2/2038	33.09	33.43	33.92	33.92	33.92	34.1	37.91	34.04	34.04	34.04	34.04	34.04	34.04	34.04	34.04	34.04	34.26	37.33	39.91	38.8	37.37	38.05	35.3	35.3
SPP South - Energy Price - 1H2023	5725	9/3/2038	9/3/2038	34.96	34.96	34.96	34.96	34.96	34.96	38.48	36.4	34.23	35.92	34.23	34.23	38.48	39	39	39	39	39	39	39	38.48	38.48	32.35	32.61
SPP South - Energy Price - 1H2023	5726	9/4/2038	9/4/2038	32.67	33.5	33.27	32.46	32.16	32.48	44.89	44.89	44.89	44.86	48.79	44.89	44.89	48.79	48.79	48.79	48.79	48.79	48.79	50.17	48.79	48.79	32.35	31.91

SPP South - Energy Price - 1H2023	5727	9/5/2038	9/5/2038	31.91	31.91	32.24	31.91	31.91	31.91	44.53	44.53	44.53	44.53	44.53	44.53	44.53	44.53	48.79	48.79	48.79	48.87	48.79	48.87	48.87	48.79	32.21	32.21
SPP South - Energy Price - 1H2023	5728	9/6/2038	9/6/2038	32.21	32.21	32.42	32.31	32.59	32.48	35.94	34.39	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	33.76	38.48	37.04	34.39	33.76	32.35	32.29
SPP South - Energy Price - 1H2023	5729	9/7/2038	9/7/2038	32.75	32.75	32.75	32.75	32.75	33.39	34.55	34.55	34.54	34.55	34.55	34.55	34.55	34.55	34.55	34.55	34.55	34.55	37.95	36.87	37.86	34.55	32.75	32.75
SPP South - Energy Price - 1H2023	5730	9/8/2038	9/8/2038	33.16	33.16	33.16	33.16	33.16	33.82	38.79	38.95	38.22	38.78	38.65	40.88	43.12	43.19	43.19	43.19	43.19	41.14	43.44	45.07	43.19	39.84	36.35	36.35
SPP South - Energy Price - 1H2023	5731	9/9/2038	9/9/2038	35.57	35.57	33.95	34.07	35.57	35.57	38.27	38.43	37.08	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.88	35.58	34.4	35.58	34.4	33.03	32.98
SPP South - Energy Price - 1H2023	5732	9/10/2038	9/10/2038	31.84	31.84	32.06	32.06	31.84	32.06	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	31.84	31.84
SPP South - Energy Price - 1H2023	5733	9/11/2038	9/11/2038	31.84	31.84	31.84	31.84	31.84	31.84	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.86	44.44	44.44	44.44	31.84	31.84
SPP South - Energy Price - 1H2023	5734	9/12/2038	9/12/2038	31.84	31.84	31.84	31.84	31.84	31.84	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.44	44.86	46.37	44.44	44.44	31.84	31.84
SPP South - Energy Price - 1H2023	5735	9/13/2038	9/13/2038	31.51	31.65	31.84	31.84	31.84	32.04	35.82	35.92	34.8	33.38	33.38	33.38	33.38	33.38	38.05	38.06	38.06	38.06	38.06	38.06	38.06	38.05	31.94	31.89
SPP South - Energy Price - 1H2023	5736	9/14/2038	9/14/2038	31.66	31.89	31.44	31.89	31.68	31.5	35.61	35.63	32.91	32.91	32.91	32.91	32.91	32.92	32.91	32.91	32.91	33.86	33.86	34.1	32.91	32.91	31	31
SPP South - Energy Price - 1H2023	5737	9/15/2038	9/15/2038	31.24	31.24	31.24	31.24	31.24	31.24	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	33.13	35.22	33.13	33.13	33.13	31.53	31.42
SPP South - Energy Price - 1H2023	5738	9/16/2038	9/16/2038	31.73	31.73	31.73	31.73	31.73	31.73	33.59	33.59	33.59	33.59	33.59	33.59	33.59	33.59	33.59	33.59	33.59	38.29	43.43	42.93	38.29	37.9	34.06	32.6
SPP South - Energy Price - 1H2023	5739	9/17/2038	9/17/2038	31.72	32.14	32.28	32.21	32.36	32.38	36.14	34.68	32.83	32.83	32.83	32.83	32.83	32.83	32.83	32.83	32.83	34.34	35.55	34.16	34.04	32.83	30.92	30.92
SPP South - Energy Price - 1H2023	5740	9/18/2038	9/18/2038	30.92	30.92	30.92	30.92	30.92	30.92	43.16	43.16	7.87	12.77	8.36	9.2	11.25	12.77	14.6	16.17	16.76	43.16	43.16	43.16	43.16	43.16	30.92	30.92
SPP South - Energy Price - 1H2023	5741	9/19/2038	9/19/2038	30.92	30.92	30.92	30.92	30.92	30.92	43.16	12.84	7.87	7.29	10.56	9.2	11.25	12.74	14.6	43.16	43.16	43.16	43.16	43.16	43.16	43.16	30.92	30.92
SPP South - Energy Price - 1H2023	5742	9/20/2038	9/20/2038	26.54	26.54	26.54	26.54	26.54	26.54	28.72	28.72	28.72	28.72	28.72	28.72	28.72	28.72	28.72	32.84	32.84	32.84	32.84	32.84	30.29	30.61	28.41	26.63
SPP South - Energy Price - 1H2023	5743	9/21/2038	9/21/2038	29.14	29.77	29.43	29.77	29.92	30.39	34.89	33.57	33.4	32.93	33.54	32.69	32.42	35.57	35.99	35.99	35.99	35.99	36.38	36.34	35.74	33.38	30.13	29.81
SPP South - Energy Price - 1H2023	5744	9/22/2038	9/22/2038	29.52	29.08	29.37	29.26	29.81	30.32	34.33	33.81	31.1	31.1	31.1	32.22	31.63	35.51	35.51	35.51	35.51	35.93	36.32	35.93	35.51	33.19	30.29	29.94
SPP South - Energy Price - 1H2023	5745	9/23/2038	9/23/2038	31.33	30.9	31.33	31.33	31.33	31.5	35.12	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	37.32	38.69	37.32	35.12	34.66	31.04	30.8
SPP South - Energy Price - 1H2023	5746	9/24/2038	9/24/2038	28.97	29.2	29.57	29.61	29.61	29.78	33.52	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	30.98	28.95	28.95
SPP South - Energy Price - 1H2023	5747	9/25/2038	9/25/2038	28.95	28.95	28.95	28.95	28.95	28.95	40.4	40.4	13.85	12.87	12.87	9.2	11.25	13.85	14.6	40.4	40.4	40.4	40.4	40.4	40.4	40.4	28.95	28.95
SPP South - Energy Price - 1H2023	5748	9/26/2038	9/26/2038	28.95	28.95	28.95	28.95	28.95	28.95	40.4	9.61	9.08	9.08	2.12	2.55	3.26	9.08	9.08	16.07	16.32	40.4	40.4	40.4	40.4	40.4	26.63	28.95
SPP South - Energy Price - 1H2023	5749	9/27/2038	9/27/2038	27.06	27.06	26.63	27.06	27.06	27.06	30.72	26.64	24.51	24.51	14.67	14.67	24.51	30.71	30.72	30.72	30.72	30.72	33.39	33.39	30.85	30.85	29.56	29.56
SPP South - Energy Price - 1H2023	5750	9/28/2038	9/28/2038	30.85	30.85	30.85	30.85	30.85	30.85	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	34.29	37.36	37.36	37.36	37.36	37.36	33.78	33.78
SPP South - Energy Price - 1H2023	5751	9/29/2038	9/29/2038	33.93	33.93	33.93	33.93	33.93	33.93	37.51	37.51	37.51	37.51	37.51	37.51	34.51	35	37.51	37.51	37.51	37.51	37.51	37.51	37.51	37.51	33.93	33.93
SPP South - Energy Price - 1H2023	5752	9/30/2038	9/30/2038	34	34	34	34	34	34	37.57	37.57	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	31.04	31.04
SPP South - Energy Price - 1H2023	5753	10/1/2038	10/1/2038	20.73	20.73	20.73	20.73	20.73	20.73	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	20.73	20.73
SPP South - Energy Price - 1H2023	5754	10/2/2038	10/2/2038	20.73	20.73	20.73	20.73	20.73	20.73	24.77	24.76	5.13	2.44	1.2	1.44	2.44	2.44	2.44	9.56	9.22	24.76	24.77	24.76	24.76	24.76	20.73	19.42
SPP South - Energy Price - 1H2023	5755	10/3/2038	10/3/2038	20.73	20.57	20.73	20.73	20.73	20.73	24.76	24.76	10.98	5.21	5.66	6.3	7.34	8.32	9.21	9.18	24.77	24.77	25.78	25.27	24.77	24.77	20.73	20.73
SPP South - Energy Price - 1H2023	5756	10/4/2038	10/4/2038	19.85	19.85	19.85	19.85	19.85	19.85	21.87	21.87	21.87	21.87	21.87	21.87	21.87	21.87	21.87	21.87	21.87	24.51	24.51	24.51	21.87	21.87	19.85	19.85
SPP South - Energy Price - 1H2023	5757	10/5/2038	10/5/2038	18.98	18.98	18.98	18.98	18.98	18.98	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	18.98	18.98
SPP South - Energy Price - 1H2023	5758	10/6/2038	10/6/2038	18.67	18.67	18.67	18.67	18.67	18.67	20.75	20.75	20.75	19.09	11.59	10.72	20.75	6.42	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	18.67	18.67
SPP South - Energy Price - 1H2023	5759	10/7/2038	10/7/2038	19.18	19.18	19.18	19.18	19.18	19.18	21.24	18.69	3.95	4.02	4.37	4.86	4.86	4.86	4.86	7.37	21.24	21.24	21.24	21.24	21.24	21.24	19.18	19.18
SPP South - Energy Price - 1H2023	5760	10/8/2038	10/8/2038	19.27	19.27	19.27	19.27	19.27	19.27	21.78	21.32	21.32	21.32	21.32	21.32	21.32	21.32	21.32	21.32	21.32	21.32	22.59	22.82	22.67	21.35	20.41	20.19
SPP South - Energy Price - 1H2023	5761	10/9/2038	10/9/2038	20.16	20.07	19.9	19.76	19.83	21.45	25.67	25.56	23.31	23.59	23.03	25.03	23.03	23.03	23.03	23.03	23.03	25.03	25.62	25.03	24.39	24.26	19.27	19.27
SPP South - Energy Price - 1H2023	5762	10/10/2038	10/10/2038	19.27	19.27	19.9	19.64	19.77	20.05	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	23.03	19.27	19.27
SPP South - Energy Price - 1H2023	5763	10/11/2038	10/11/2038	19.27	19.27	19.27	19.22	19.27	19.65	22.63	21.97	22.63	22.7	22.06	20.92	20.92	20.92	20.92	20.92	20.92	22.63	23.44	22.63	21.66	20.95	19.99	20.28
SPP South - Energy Price - 1H2023	5764	10/12/2038	10/12/2038	20.28	20.19	20.02	20.28	20.28	22.02	24.02	24.02	22.29	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	22.73	22.29	21.56	21.46	19.39	19.39
SPP South - Energy Price - 1H2023	5765	10/13/2038	10/13/2038	19.05	19.05	19.39	19.05	19.39	20.39	22.3	21.77	22.28	22.64	21.11	21.11	21.11	21.21	21.11	21.11	21.11	22.37	23.94	23.6	23.07	22.64	21.19	21.19
SPP South - Energy Price - 1H2023	5766	10/14/2038	10/14/2038	21.25	21.25	21.25	21.25	21.25	21.25	23.7	23.7	21.69	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	23.7	27	26.61	23.71	23.7	20.24	19.1
SPP South - Energy Price - 1H2023	5767	10/15/2038	10/15/2038	19.46	19.37	20.22	19.96	20.65	20.65	25.86	21.98	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	23.14	23.86	23.14	23.14	20.69	19.71	18.57
SPP South - Energy Price - 1H2023	5768	10/16/2038	10/16/2038	18.57	18.57	18.57	18.57	18.57	18.57	24.12	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	24.12	24.12	24.12	23.55	23.42	18.57	18.57
SPP South - Energy Price - 1H2023	5769	10/17/2038	10/17/2038	18.57	18.57	18.57	18.66	18.57	19.37	24.12	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.92	24.59	24.59	23.55	23.42	18.93	18.93
SPP South - Energy Price - 1H2023	5770	10/18/2038	10/18/2038	19.17	19.17	19.17	19.17	19.17	19.17	22.27	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	23.78	23.78	22.03	22.03	20.3	19.55	19.17
SPP South - Energy Price - 1H2023	5771	10/19/2038	10/19/2038	19.55	19.55	19.55	19.55	19.55	19.55	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	19.55	19.55
SPP South - Energy Price - 1H2023	5772	10/20/2038	10/20/2038	19.69	19.69	19.69	19.69	19.69	19.69	20.79	20.79	20.79	20.79	20.79	19.13	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	19.69	19.69
SPP South - Energy Price - 1H2023	5773	10/21/2038	10/21/2038	20.08	20.08	20.08	20.08	20.08	20.08	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	21.16	20.08	20.08
SPP South - Energy Price - 1H2023	5774	10/22/2038	10/22/2038	19.8	19.8	19.8	19.8	19.8	19.8	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	19.8	19.8
SPP South - Energy Price - 1H2023	5775	10/23/2038	10/23/2038	19.8	19.8	19.8	19.8	19.8	19.8	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	24.26	23.65	23.65	23.65	19.8	19.8
SPP South - Energy Price - 1H2023	5776	10/24/2038	10/24/2038	19.8	19.8	19.8	19.8	19.8	19.8	23.65	23.65	23.65	23.65	5.58	5.81	1.84	2.44	2.06	5.81	23.65	23.65	23.65	24.94	24.26	23.65	19.8	19.8
SPP South - Energy Price - 1H2023	5777	10/25/2038	10/25/2038	19.93	19.93	19.93	19.93	19.93	19.93	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.58	22.66	22.01	22.06	21.58	19.93	19.93
SPP South - Energy Price - 1H2023	5778	10/26/2038	10/26/2038	20.47	20.47	20.47	20.47	20.47	20.47	21.53	21.53	7.33	7.1	4.37	4.86	5.66	6.42	7.1	7.37	21.53	21.53	21.53	21.53	21.53	21.53	20.47	20.47
SPP South - Energy Price - 1H2023	5779	10/27/2038	10/27/2038	20.19	20.19	20.19	20.19	20.19	20.19	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	21.26	20.19	20.19
SPP South - Energy Price - 1H2023	5780	10/28/2038	10/28/2038	19.43	19.43	19.43	19.43	19.43	19.43	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	20.54	19.43	19.43
SPP South - Energy Price - 1H2023	5781	10/29/2038	10/29/2038	18.62	18.62	18.62	18.62	18.62	18.62	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	20.46	20.13	19.78	19.78	19.78	18.62	18.62
SPP South - Energy Price - 1H2023	5782	10/30/2038	10/30/2038	18.62	18.62	18.62	18.62	18.62	18.62	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	18.62	18.62
SPP South - Energy Price - 1H2023	5783	10/31/2038	10/31/2038	18.62	18.62	18.62	18.62	18.62	18.62	22.24	22.24	5.94	3.83	3.83	3.83	3.26	1.72	3.83	3.83	5.14	22.24	22.24	22.24	22.24	22.24	18.62	18.62
SPP South - Energy Price - 1H2023	5784	11/1/2038	11/1/2038	25.64	25.64	25.64	25.64	25.64	25.64	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.35	25.82	25.82
SPP South - Energy Price - 1H2023	5785	11/2/2038	11/2/2038	25.82	25.82	25.82	25.82	25.82	25.82	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	27.73	26.98	26.49	26.55	27.73	29.49	29.49
SPP South - Energy Price - 1H2023	5786	11/3/2038	11/3/2038	27.58	27.58	27.58	27.58	27.58	27.58	24.32	25.82	23.5	23.5	23.5	23.5	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	24.19	24.19
SPP South - Energy Price - 1H2023	5787	11/4/2038	11/4/2038	25.51	25.51	25.51	25.51	25.51	25.51	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.25	24.6	24.64	24.25	24.25	29.13	29.13
SPP South - Energy Price - 1H2023	5788	11/5/2038	11/5/2038	29.69	29.69	27.84	28.9	28.22	28.97	24.62	24.62	24.62	16	16	16	12.73	12.73	9.32	24.62	24.62	24.62	24.62	24.62	24.62	24.62	25.99	25.99
SPP South - Energy Price - 1H2023	5789	11/6/2038	11/6/2038	25.98	25.99	25.99	25.98	25.99	25.99	34.09	34.09	9.86	8.52	7.52	9.86	9.86	9.86	9.86	34.09	34.09	34.09	34.09	34.09	34.09	34.09	25.99	25.99
SPP South - Energy Price - 1H2023	5790	11/7/2038	11/7/2038	25.99	25.99	25.99	25.99	25.99	25.99	34.09	34.09	34.09	8.52	7.52	7.37	7.37	7.29	7.37	7.22	34.09	34.09	34.09	34.09	34.09	34.09	25.98	25.98
SPP South - Energy Price - 1H2023	5791	11/8/2038	11/8/2038	25.98	23.91	25.98	23.91	25.98	26.22	24.81	17.14	5.49	5.09	4.35	4.05	4.05	4.35	4.35	4.32	4.75	24.81	24.81	24.81	24.81	24.81	26.22	26.22
SPP South - Energy Price - 1H2023	5792	11/9/2038	11/9/2038	30.05	29.12	29.12	30.05	30.05	30.05	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	27.89	30.05	30.05
SPP South - Energy Price - 1H2023	5793	11/10/2038	11/10/2038	31.01	31.01	31.01	31.01	31.01	31.01	28.66	31.15	31.15	28.66	31.15	28.66	28.66	28.66	28.66	28.66	28.66	32.62	32.62	31.15	30.69	31.38	34.77	34.92
SPP South - Energy Price - 1H2023	5794	11/11/2038	11/11/2038	30.7	30.7	30.7	30.7	30.7	30.7	28.41	28.41	28.41	26.16	24.07	18.43	11.64	24.07	24.07	24.07	28.41	28.41	28.41	28.41	28.41	28.41	30.7	30.7
SPP South - Energy Price - 1H2023	5795	11/12/2038	11/12/2038	27.69	27.69	27.69	27.69	27.69	27.69	25.99	25.99	25.99	25.99	23.91	23.91	22.28	23.91	25.99	25.99	25.99	25.99	28.48	25.99	25.99	25.99	27.69	27.69
SPP South - Energy Price - 1H2023	5796	11/13/2038	11/13/2038	27.69	27.69	27.69	27.69	27.69	27.69	36.33	36.33	36.33	36.32	36.32	33.42	14.09	36.32	33.42	36.32	36.32	36.33	36.33	36.33	36.33	36.33	27.69	27.69
SPP South - Energy Price - 1H2023	5797	11/14/2038	11/14/2038	27.69	27.69	27.69	27.69	27.69	27.69	36.32	36.32	33.42	36.33	36.33	36.32	36.32	36.32	33.42	36.33	36.33	36.33	36.33	36.33	36.33	36.33	27.69	27.69
SPP South - Energy Price - 1H2023	5798	11/15/2038	11/15/2038	24.89	24.89	24.89	24.89	24.89	24.89	23.75	23.75	23.75	21.85	21.85	23.75	21.85	23.75	23.75	23.75	23.75	23.75	23.75	23.75	23.75	23.75	24.89	24.89
SPP South - Energy Price - 1H2023	5799	11/16/2038	11/16/2038	28.32	28.32	28.32	28.32	28.32	29.11	27.37	27.37	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	27.97	28.34	27.56	27.37	26.86	29.92	29.92
SPP South - Energy Price - 1H2023	5800	11/17/2038	11/17/2038	29.92	29.92	29.92	29.92	29.61	29.92	29.62	30.97	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	27.25	30.97	30.97	30.97	30.97	30.97	33.86	33.53
SPP South - Energy Price - 1H2023	5801	11/18/2038	11/18/2038	34.08	34.08	33.86	33.86	33.86	33.86	30.43	30.43	28.85	17.71	4.5	4.5	4.5	4.35	4.41	4.32	13.97	30.43	30.43	30.43	30.43	30.43	30.9	33.14
SPP South - Energy Price - 1H2023	5802	11/19/2038	11/19/2038	32.46	32.24	31.86	32.46	32.46	32.46	30.12	30.12	29.73	29.31	29.31	29.31	29.31	26.97	13.02	29.31	29.31	29.73	29.73	29.31	29.31	29.31	29.79	31.58
SPP South - Energy Price - 1H2023	5803	11/20/2038	11/20/2038	29.71	29.79	29.79	32.02	32.38	32.38	42.47	42.47	39	37.19	37.19	37.19	37.19	37.19	37.19	37.19	40.33	42.42	42.59	41.89	41.98	42.59	32.46	32.33
SPP South - Energy Price - 1H2023	5804	11/21/2038	11/21/2038	32.04	32.24	31.86	32.02	30.25	31.58	39.41	41.42	42.42	41.59	41.12	37.19	37.19	7.29	7.37	7.22	37.19	41.28	41.42	41.28	37.97	37.97	28.95	29.67
SPP South - Energy Price - 1H2023	5805	11/22/2038	11/22/2038	32.32	32.32	32.32	32.32	32.32	32.32	29.91	29.91	29.91	29.91	29.91	29.91	29.91	29.91	29.91	29.91	33.35	33.35	33.35	33.35	33.35	33.35	36.08	36.08
SPP South - Energy Price - 1H2023	5806	11/23/2038	11/23/2038	35.37	35.37	35.37	31.69	35.37	35.37	31.96	31.96	31.96	29.41	29.41	29.41	31.96	31.96	31.96	31.96	29.41	31.96	31.96	31.96	31.96	29.41	31.69	31.69
SPP South - Energy Price - 1H2023	5807	11/24/2038	11/24/2038	31.22	31.22	31.22	31.22	31.22	31.22	29.03	32.35	32.35	32.35	32.35	32.07	29.76	32	32.35	32.11	32.35	32.35	32.82	32.35	32.35	32.35	34.84	34.84
SPP South - Energy Price - 1H2023	5808	11/25/2038	11/25/2038	34.84	34.84	34.84	34.84	34.84	34.84	29.68	29.03	29.03	29.03	29.03	29.03	29.03	29.03	29.03	29.03	29.03	30.3	31.3	30.81	29.03	29.03	32.05	34.84
SPP South - Energy Price - 1H2023	5809	11/26/2038	11/26/2038	28.44	28.44	28.44	28.44	28.44	28.44	26.79	26.79	26.79	26.79	24.64	26.23	26.37	4.45	22.15	24.12	26.79	26.79	26.79	26.79	26.79	26.79	28.44	28.44

SPP South - Energy Price - 1H2023	5810	11/27/2038	11/27/2038	28.44	28.44	28.44	28.44	28.44	28.44	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	38.24	41.55	40.55	37.3	37.56	28.44	28.44
SPP South - Energy Price - 1H2023	5811	11/28/2038	11/28/2038	28.44	28.44	31.67	28.44	28.44	28.44	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	31.67	29.83
SPP South - Energy Price - 1H2023	5812	11/29/2038	11/29/2038	30.58	31.58	31.58	29.14	31.58	31.58	29.74	29.74	29.74	29.74	29.54	27.36	29.74	29.74	29.74	28.74	29.74	30.12	29.74	29.74	29.74	29.74	32.24	32.47
SPP South - Energy Price - 1H2023	5813	11/30/2038	11/30/2038	32.24	32.24	32.24	32.24	32.24	32.24	30.26	30.26	27.19	27.19	27.19	27.19	27.19	27.19	27.19	27.19	27.19	29.55	29.43	29.55	29.7	29.94	32.2	32.24
SPP South - Energy Price - 1H2023	5814	12/1/2038	12/1/2038	37.57	37.57	37.57	37.57	37.57	37.57	40.65	41.1	40.65	39.06	36.61	36.61	36.61	36.61	36.61	36.61	36.61	41.1	41.1	41.1	41.1	41.1	41.2	41.56
SPP South - Energy Price - 1H2023	5815	12/2/2038	12/2/2038	40.48	40.48	40.48	39.42	40.48	40.48	43.28	43.28	38.93	38.93	38.93	38.93	38.93	38.93	38.93	38.98	41.18	43.28	43.28	43.28	43.28	43.82	40.48	39.39
SPP South - Energy Price - 1H2023	5816	12/3/2038	12/3/2038	43.01	43.01	43.01	43.01	39.23	38.66	42.54	42.32	45.55	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	46.66	46.66	46.66	46.66	46.66	44.23	44.23
SPP South - Energy Price - 1H2023	5817	12/4/2038	12/4/2038	43.01	43.01	43.01	43.01	43.01	43.01	45.29	47.88	44.04	39.51	39.51	39.51	39.51	39.51	39.51	39.51	39.51	44.04	44.04	42.95	42.95	39.54	41.94	38.58
SPP South - Energy Price - 1H2023	5818	12/5/2038	12/5/2038	38.58	38.58	38.58	38.58	38.58	38.58	39.51	39.51	39.51	39.51	39.51	39.51	39.51	39.51	39.51	39.51	39.51	44.04	44.04	43.1	40.87	40.5	38.58	38.58
SPP South - Energy Price - 1H2023	5819	12/6/2038	12/6/2038	42.09	42.09	42.09	42.09	42.09	42.09	45.18	45.18	38.28	8.59	13.8	7.28	32.26	33.19	33.8	45.17	45.18	47.11	50.38	47.11	47.11	47.11	47	47
SPP South - Energy Price - 1H2023	5820	12/7/2038	12/7/2038	47.66	47.66	47.66	47.66	47.66	47.66	50.99	51.76	50.99	50.99	50.99	47.27	46.61	45.71	46.61	46.61	50.66	50.66	50.66	49.94	50.66	50.66	49.03	49.03
SPP South - Energy Price - 1H2023	5821	12/8/2038	12/8/2038	50.36	50.36	50.36	50.36	50.36	50.36	52.19	53	52.19	52.19	52.19	52.14	51.16	46.77	51.25	48.02	52.19	52.19	52.19	52.19	52.19	52.19	48.94	48.94
SPP South - Energy Price - 1H2023	5822	12/9/2038	12/9/2038	45.7	45.7	45.7	45.7	45.7	45.7	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	45.7	45.7
SPP South - Energy Price - 1H2023	5823	12/10/2038	12/10/2038	41.68	41.68	41.68	41.68	41.68	41.68	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	42.78	41.68	41.68
SPP South - Energy Price - 1H2023	5824	12/11/2038	12/11/2038	41.68	41.68	41.68	41.68	41.68	41.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	41.68	41.68
SPP South - Energy Price - 1H2023	5825	12/12/2038	12/12/2038	41.68	41.68	41.68	41.68	41.68	41.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	42.68	43.94	44.82	42.68	44.4	42.68	41.68	41.68
SPP South - Energy Price - 1H2023	5826	12/13/2038	12/13/2038	41.37	41.37	41.37	41.37	41.37	41.37	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	41.37	41.37
SPP South - Energy Price - 1H2023	5827	12/14/2038	12/14/2038	40.49	40.49	40.49	40.49	40.49	40.49	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	41.68	40.49	40.49
SPP South - Energy Price - 1H2023	5828	12/15/2038	12/15/2038	39.59	39.59	39.59	39.59	39.59	39.59	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	40.85	42.82	39.59
SPP South - Energy Price - 1H2023	5829	12/16/2038	12/16/2038	37.7	37.7	37.7	37.7	37.7	37.7	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	37.7	37.7
SPP South - Energy Price - 1H2023	5830	12/17/2038	12/17/2038	34.53	34.53	34.53	34.53	34.53	34.53	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	37.76	37.3
SPP South - Energy Price - 1H2023	5831	12/18/2038	12/18/2038	37.31	37.3	37.3	37.3	37.57	36.97	38.3	39.17	37.1	38.19	35.86	35.35	35.35	35.35	35.35	35.35	35.35	36.98	37.31	37.06	37.08	35.46	34.53	34.69
SPP South - Energy Price - 1H2023	5832	12/19/2038	12/19/2038	34.53	34.53	34.53	34.53	34.53	34.53	35.35	37.85	38.43	38.43	37.71	36.78	36.37	36.59	36.63	35.35	37.2	40.41	40.41	40.42	40.42	40.41	38.94	38.4
SPP South - Energy Price - 1H2023	5833	12/20/2038	12/20/2038	38.49	39.38	39.42	39.24	38.75	38.18	39.88	41.72	41.02	39.73	37.26	37.26	37.26	37.26	37.26	37.26	37.26	37.26	39.73	39.37	38.79	39.73	39.05	37.81
SPP South - Energy Price - 1H2023	5834	12/21/2038	12/21/2038	36.02	36.02	36.02	36.02	36.02	36.02	37.55	37.55	37.55	37.55	35.16	34.54	6.94	34.54	34.54	37.55	37.55	37.55	37.55	37.55	37.55	37.55	36.02	36.02
SPP South - Energy Price - 1H2023	5835	12/22/2038	12/22/2038	34.13	34.13	34.13	34.13	34.13	34.13	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.79	35.75	34.13
SPP South - Energy Price - 1H2023	5836	12/23/2038	12/23/2038	35.75	35.75	35.75	35.75	35.75	35.75	37.29	41.69	37.29	37.29	37.29	37.29	37.29	37.29	37.29	37.29	37.29	39.24	37.29	37.29	37.29	37.29	35.75	35.75
SPP South - Energy Price - 1H2023	5837	12/24/2038	12/24/2038	35.58	35.58	35.58	35.58	35.58	35.58	37.26	37.52	37.66	37.26	37.13	37.13	37.13	37.13	37.13	37.13	37.13	37.26	37.26	37.26	37.13	37.13	35.58	35.58
SPP South - Energy Price - 1H2023	5838	12/25/2038	12/25/2038	35.58	35.58	35.58	35.58	35.58	35.58	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	35.58	35.58
SPP South - Energy Price - 1H2023	5839	12/26/2038	12/26/2038	35.58	35.58	35.58	35.58	35.58	35.58	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.43	36.56	35.58
SPP South - Energy Price - 1H2023	5840	12/27/2038	12/27/2038	38.4	38.4	38.4	38.4	38.4	38.4	39.75	39.75	39.75	39.75	39.75	39.75	39.75	39.75	39.75	39.75	39.75	39.75	40.94	39.88	39.75	39.75	38.4	38.4
SPP South - Energy Price - 1H2023	5841	12/28/2038	12/28/2038	37.37	37.37	37.37	37.37	37.37	37.37	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	37.37	37.37
SPP South - Energy Price - 1H2023	5842	12/29/2038	12/29/2038	32.19	32.19	32.19	32.19	32.19	32.19	34	34	34	34	34	34	34	34	34	34	34	34.67	34	34	34	34	32.19	32.19
SPP South - Energy Price - 1H2023	5843	12/30/2038	12/30/2038	41.09	41.09	41.09	41.09	41.09	41.09	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	41.09	41.09
SPP South - Energy Price - 1H2023	5844	12/31/2038	12/31/2038	39.75	39.75	39.75	39.75	39.75	39.75	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	39.75	39.75
SPP South - Energy Price - 1H2023	5845	1/1/2039	1/1/2039	41.33	41.33	41.33	41.33	41.33	41.33	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	43.56	41.33	41.33
SPP South - Energy Price - 1H2023	5846	1/2/2039	1/2/2039	41.33	41.33	41.33	41.33	41.33	41.33	43.56	43.56	43.56	43.56	40.71	43.56	43.56	40.07	43.56	43.56	40.07	43.56	43.56	43.56	43.56	43.56	41.33	41.33
SPP South - Energy Price - 1H2023	5847	1/3/2039	1/3/2039	39.69	39.69	39.69	39.69	39.69	39.69	46.92	46.92	46.92	46.92	46.92	42	14.75	13.32	7.1	13.32	6.94	46.92	46.92	46.92	46.92	46.92	39.69	39.69
SPP South - Energy Price - 1H2023	5848	1/4/2039	1/4/2039	38.93	38.93	38.93	38.93	38.93	38.93	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	38.93	38.93
SPP South - Energy Price - 1H2023	5849	1/5/2039	1/5/2039	37.94	37.94	37.94	37.94	37.94	37.94	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	45.06	37.94	37.94
SPP South - Energy Price - 1H2023	5850	1/6/2039	1/6/2039	37.63	37.63	37.63	37.63	37.63	37.63	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	37.63	37.63
SPP South - Energy Price - 1H2023	5851	1/7/2039	1/7/2039	34.83	34.83	34.83	34.83	34.83	34.83	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	41.77	34.83	34.83
SPP South - Energy Price - 1H2023	5852	1/8/2039	1/8/2039	34.83	34.83	34.83	34.83	34.83	34.83	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	37.08	39.94	39.76	36.95	36.7	34.83	34.83
SPP South - Energy Price - 1H2023	5853	1/9/2039	1/9/2039	34.83	34.83	34.83	34.83	34.83	34.83	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	34.83	34.83
SPP South - Energy Price - 1H2023	5854	1/10/2039	1/10/2039	39.39	39.39	39.39	39.39	39.39	39.39	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	48.4	53.32	54.47	48.99	47.26	42.79	42.79
SPP South - Energy Price - 1H2023	5855	1/11/2039	1/11/2039	42.79	42.79	42.79	42.79	42.79	42.79	51.66	51.66	51.6	50.2	51.66	51.66	51.66	51.66	51.66	51.66	51.66	50.2	50.2	50.2	50.2	50.2	42.79	42.79
SPP South - Energy Price - 1H2023	5856	1/12/2039	1/12/2039	41.65	41.65	41.65	41.65	41.65	41.65	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	41.65	41.65
SPP South - Energy Price - 1H2023	5857	1/13/2039	1/13/2039	40.49	40.49	40.49	40.49	40.49	40.49	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	47.77	40.49	40.49
SPP South - Energy Price - 1H2023	5858	1/14/2039	1/14/2039	41.36	41.36	41.36	41.36	41.36	41.36	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	48.68	41.36	41.36
SPP South - Energy Price - 1H2023	5859	1/15/2039	1/15/2039	41.36	41.36	41.36	41.36	41.36	41.36	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	41.36	41.36
SPP South - Energy Price - 1H2023	5860	1/16/2039	1/16/2039	41.36	41.36	41.36	41.36	41.36	41.36	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	43.58	41.36	41.36
SPP South - Energy Price - 1H2023	5861	1/17/2039	1/17/2039	41.16	41.16	41.16	41.16	41.16	41.16	48.47	48.47	48.47	48.47	48.47	48.47	48.47	48.47	43.38	48.47	48.47	48.47	48.47	48.47	48.47	48.47	41.16	41.16
SPP South - Energy Price - 1H2023	5862	1/18/2039	1/18/2039	47.5	47.5	47.5	47.5	47.5	47.5	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	55.19	47.5	47.5
SPP South - Energy Price - 1H2023	5863	1/19/2039	1/19/2039	49.92	49.92	49.92	49.92	49.92	49.92	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	57.75	49.92	49.92
SPP South - Energy Price - 1H2023	5864	1/20/2039	1/20/2039	44.73	44.73	44.73	44.73	44.73	44.73	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	52.25	44.73	44.73
SPP South - Energy Price - 1H2023	5865	1/21/2039	1/21/2039	44.41	44.41	44.41	44.41	44.41	44.41	51.91	51.91	22.84	9.83	9.83	8.8	8.05	7.52	9.83	9.83	9.83	51.92	51.92	51.92	51.92	51.92	44.41	44.41
SPP South - Energy Price - 1H2023	5866	1/22/2039	1/22/2039	44.41	44.41	44.41	44.41	44.41	44.41	46.8	46.8	46.8	46.8	16.71	16.71	16.34	11.26	16.71	16.71	46.8	46.8	46.8	46.8	46.8	46.8	44.41	44.41
SPP South - Energy Price - 1H2023	5867	1/23/2039	1/23/2039	44.41	44.41	44.41	44.41	44.41	44.41	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	44.41	44.41
SPP South - Energy Price - 1H2023	5868	1/24/2039	1/24/2039	38.31	38.31	38.31	38.31	38.31	38.31	45.45	45.45	45.45	45.45	45.45	45.45	41.81	41.81	45.45	45.45	45.45	45.45	45.45	45.45	45.45	45.45	38.31	38.31
SPP South - Energy Price - 1H2023	5869	1/25/2039	1/25/2039	37.26	37.26	37.26	37.26	37.26	37.26	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	37.26	37.26
SPP South - Energy Price - 1H2023	5870	1/26/2039	1/26/2039	37.11	37.11	37.11	37.11	37.11	37.11	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	44.18	41.13	39.06
SPP South - Energy Price - 1H2023	5871	1/27/2039	1/27/2039	39.51	39.51	40.34	40.54	40.13	41.86	50.74	52.85	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	49.9	49.9	49.9	49.68	43.2	43.2
SPP South - Energy Price - 1H2023	5872	1/28/2039	1/28/2039	44.12	44.12	44.12	44.12	44.12	44.39	51.61	51.61	51.61	51.61	51.61	51.61	51.61	51.61	51.61	47.48	47.48	51.61	51.61	51.61	51.61	51.61	44.12	44.12
SPP South - Energy Price - 1H2023	5873	1/29/2039	1/29/2039	44.12	44.12	44.12	44.12	44.12	44.12	46.5	46.5	46.5	46.5	21.47	21.47	16.04	18.88	15.89	21.47	21.47	46.5	46.5	46.5	46.5	46.5	44.12	44.12
SPP South - Energy Price - 1H2023	5874	1/30/2039	1/30/2039	44.12	44.12	44.12	44.12	44.12	44.12	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	44.12	44.12
SPP South - Energy Price - 1H2023	5875	1/31/2039	1/31/2039	39.03	39.03	39.03	39.03	39.03	39.03	46.22	46.22	46.22	46.22	44.15	22.28	22.28	22.28	16.14	6.61	22.28	46.22	46.22	46.22	46.22	46.22	39.03	39.03
SPP South - Energy Price - 1H2023	5876	2/1/2039	2/1/2039	26.16	26.16	26.16	26.16	26.16	26.16	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	29.38	26.16	26.16
SPP South - Energy Price - 1H2023	5877	2/2/2039	2/2/2039	24.21	24.21	24.21	24.21	24.21	24.21	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	24.21	24.21
SPP South - Energy Price - 1H2023	5878	2/3/2039	2/3/2039	25.53	25.53	25.53	25.53	25.53	25.53	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	29.85	30.47	30.47	28.23	28.17
SPP South - Energy Price - 1H2023	5879	2/4/2039	2/4/2039	28.15	28.21	28.15	28.15	28.3	28.3	33.37	33.2	32.26	29.96	29.77	29.68	29.68	29.68	29.68	29.68	29.68	29.68	31.08	32.26	32.26	33.12	28.3	28.3
SPP South - Energy Price - 1H2023	5880	2/5/2039	2/5/2039	28.3	25.36	25.36	25.36	25.36	25.36	31.65	31.84	30.69	30.68	30.68	30.68	30.68	30.64	30.68	13.84	30.64	30.68	30.69	33.31	30.69	30.69	25.36	25.36
SPP South - Energy Price - 1H2023	5881	2/6/2039	2/6/2039	25.36	25.36	25.36	25.36	25.36	25.36	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.69	30.88	33.31	33.31	33.31	30.69	25.36	25.36
SPP South - Energy Price - 1H2023	5882	2/7/2039	2/7/2039	24.04	23.55	24.04	24.04	24.04	24.04	28.1	31.26	27.83	27.83	27.83	27.83	27.83	25.6	17.2	27.83	27.83	27.83	27.83	27.83	28.05	27.84	23.63	23.55
SPP South - Energy Price - 1H2023	5883	2/8/2039	2/8/2039	23.63	23.63	23.63	23.63	23.63	23.63	27.91	28.47	27.91	27.91	27.91	27.91	25.68	14	17.26	24.01	25.68	27.91	27.91	27.91	27.91	27.91	23.63	23.63
SPP South - Energy Price - 1H2023	5884	2/9/2039	2/9/2039	24.3	24.3	24.3	24.3	24.3	24.3	28.6	28.6	28.6	4.91	3.74	3.74	3.74	3.74	3.74	0.81	3.74	3.74	28.6	28.6	28.6	28.94	25.48	25.5
SPP South - Energy Price - 1H2023	5885	2/10/2039	2/10/2039	24.16	24.1	24.1	24.56	24.7	24.56	28.79	28.94	28.39	28.39	28.39	28.39	28.39	28.39	24.43	26.12	26.12	28.39	28.39	28.39	28.39	28.39	24.1	24.1
SPP South - Energy Price - 1H2023	5886	2/11/2039	2/11/2039	23.32	23.32	23.32	23.32	23.32	23.32	27.59	27.59	27.59	27.59	27.59	27.59	27.53	6.58	25.38	23.72	25.38	27.59	27.59	27.59	27.59	27.59	23.32	23.32
SPP South - Energy Price - 1H2023	5887	2/12/2039	2/12/2039	23.32	23.32	23.32	23.32	23.32	23.32	28.28	30.66	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	23.32	23.32
SPP South - Energy Price - 1H2023	5888	2/13/2039	2/13/2039	23.32	23.32	23.32	23.32	23.32	23.32	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.21	28.37	29	30.66	23.52	23.32
SPP South - Energy Price - 1H2023	5889	2/14/2039	2/14/2039	27.54	27.54	27.54	27.54	27.67	27.67	34.03	34.03	34.03	34.03	34.03	34.03	31.9	31.9	31.9	31.9	31.9	34.03	34.03	34.03	34.03	34.03	27.54	27.54
SPP South - Energy Price - 1H2023	5890	2/15/2039	2/15/2039	27.49	27.49	27.49	27.49	27.49	27.49	31.84	32.31	31.84	31.84	31.84	31.3	31.84	31.84	29.3	29.3	31.84	31.84	31.84	31.84	31.84	31.84	27.49	27.49
SPP South - Energy Price - 1H2023	5891	2/16/2039	2/16/2039	36.05	36.05	36.05	36.05	36.05	36.05	40.58	40.58	35.89	22.31	24.25	18.17	18.17	3.92	17.5	3.89	18.17	40.58	40.58	40.58	40.58	40.58	36.05	36.05
SPP South - Energy Price - 1H2023	5892	2/17/2039	2/17/2039	28.95	28.95	28.95	28.95	28.95	28.95	33.33	33.33	31.33	31.33	28.82	6.56	22.35	3.92	26.96	27.11	26.96	33.33	33.33	33.33	33.47	33.59	28.97	28.95

SPP South - Energy Price - 1H2023	5893	2/18/2039	2/18/2039	28.77	28.77	26.88	28.77	28.77	28.77	34.84	31.6	31.13	31.13	26.86	13.69	13.46	3.92	13.69	13.69	31.13	31.13	31.13	31.13	31.13	31.13	26.79	26.79
SPP South - Energy Price - 1H2023	5894	2/19/2039	2/19/2039	26.79	26.79	26.79	26.79	26.79	26.79	32.41	33.57	32.86	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.79	32.96	32.41	26.79	26.79
SPP South - Energy Price - 1H2023	5895	2/20/2039	2/20/2039	26.79	26.79	26.79	26.79	26.79	26.79	32.41	32.41	32.86	32.41	32.41	32.41	32.41	8.22	11.22	32.41	15.03	32.41	32.41	32.41	32.41	32.41	26.79	26.79
SPP South - Energy Price - 1H2023	5896	2/21/2039	2/21/2039	26.98	27.2	27.14	27.21	28.02	28.03	32.74	32.93	32.29	30.94	30.94	30.94	30.94	30.94	30.94	30.94	30.94	32.3	33.52	33.36	32.74	32.74	29.35	28.78
SPP South - Energy Price - 1H2023	5897	2/22/2039	2/22/2039	29.73	29.73	29.73	29.63	29.73	29.73	33.97	34.48	32.44	32.44	32.44	31.7	31.94	31.9	31.86	31.46	31.72	32.44	32.44	32.44	32.44	32.44	26.95	25.89
SPP South - Energy Price - 1H2023	5898	2/23/2039	2/23/2039	24.77	24.73	24.77	24.74	24.66	26.55	31.62	31.62	30.34	26.82	23.31	23.22	4.17	4.37	4.48	4.66	23.22	30.34	30.34	30.34	30.34	30.34	23.86	23.86
SPP South - Energy Price - 1H2023	5899	2/24/2039	2/24/2039	25.26	25.26	25.26	25.26	25.26	25.26	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	29.57	30.1	32.2	29.84	28.18	27.47
SPP South - Energy Price - 1H2023	5900	2/25/2039	2/25/2039	27.47	27.47	27.47	27.47	27.47	27.47	30.58	32.52	30.59	30.33	30.19	29.75	28.93	28.93	28.93	28.93	28.93	29.1	30.35	30.08	28.95	28.93	24.63	24.63
SPP South - Energy Price - 1H2023	5901	2/26/2039	2/26/2039	24.63	24.63	24.63	24.63	24.63	24.63	29.8	29.8	5.64	5.47	4.93	4.95	5.07	5.31	5.31	5.66	5.31	5.35	29.8	29.8	29.8	29.8	24.63	24.63
SPP South - Energy Price - 1H2023	5902	2/27/2039	2/27/2039	24.63	24.63	24.63	24.63	24.63	24.63	29.8	29.8	29.8	5.47	4.93	4.95	5.07	5.31	5.45	5.66	5.55	7.49	29.8	29.8	29.8	29.8	24.63	24.63
SPP South - Energy Price - 1H2023	5903	2/28/2039	2/28/2039	26.37	26.37	26.37	26.37	26.37	26.37	28.92	26.48	4.64	4.5	24.15	26.25	26.25	30.7	24.15	10.52	24.15	30.7	30.7	30.7	30.7	30.7	26.37	26.37
SPP South - Energy Price - 1H2023	5904	3/1/2039	3/1/2039	16.78	16.78	16.78	16.78	16.78	16.78	23.1	23.1	23.1	13.37	3.05	3.06	3.13	3.28	3.37	3.5	3.43	3.37	23.1	23.1	23.1	23.1	16.78	16.78
SPP South - Energy Price - 1H2023	5905	3/2/2039	3/2/2039	19.54	19.54	19.54	19.54	19.54	19.54	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	27.09	26.76	26.42	26.42	19.54	19.54
SPP South - Energy Price - 1H2023	5906	3/3/2039	3/3/2039	19.24	19.24	18.04	19.22	19.21	19.24	24.62	24.62	25.02	24.62	24.62	24.62	24.62	24.62	24.62	3.5	22.65	24.62	24.62	24.62	24.62	24.66	18.07	18.04
SPP South - Energy Price - 1H2023	5907	3/4/2039	3/4/2039	17.12	17.12	17.12	17.12	17.12	17.12	21.92	21.91	21.91	21.91	21.91	20.54	21.91	3.76	3.37	17.12	20.15	21.91	21.91	21.91	21.91	21.91	15.79	15.79
SPP South - Energy Price - 1H2023	5908	3/5/2039	3/5/2039	15.79	15.79	15.79	15.79	15.79	15.79	19.62	19.62	18.23	18.01	3.74	3.54	19.62	19.62	19.62	19.62	19.62	19.62	19.81	19.81	19.81	19.62	15.79	15.79
SPP South - Energy Price - 1H2023	5909	3/6/2039	3/6/2039	15.79	15.79	15.79	15.79	15.79	15.79	19.62	19.62	19.62	19.62	19.62	19.62	19.62	18.23	18.23	19.62	19.62	19.62	19.88	19.81	19.62	19.62	15.79	15.79
SPP South - Energy Price - 1H2023	5910	3/7/2039	3/7/2039	14.67	14.67	14.67	14.67	14.67	14.67	20.56	20.56	20.56	18.78	17.67	17.67	3.13	17.27	17.27	17.27	17.27	17.67	20.56	20.56	20.56	20.56	14.67	14.67
SPP South - Energy Price - 1H2023	5911	3/8/2039	3/8/2039	14.97	14.97	14.97	14.97	14.97	15.28	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	15.38	15.61
SPP South - Energy Price - 1H2023	5912	3/9/2039	3/9/2039	15.62	15.61	15.61	15.61	15.61	15.61	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	24.11	21.69	21.69	16.33	15.86
SPP South - Energy Price - 1H2023	5913	3/10/2039	3/10/2039	16.33	16.13	16.33	16.33	17.22	18.48	22.36	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	16.13	16.13
SPP South - Energy Price - 1H2023	5914	3/11/2039	3/11/2039	15.51	15.51	15.51	15.51	15.51	15.51	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	15.51	15.51
SPP South - Energy Price - 1H2023	5915	3/12/2039	3/12/2039	15.51	15.51	15.51	15.51	15.51	15.51	19.26	19.26	19.26	3.57	3.22	3.23	0.56	3.46	3.55	3.69	3.62	19.26	19.26	19.26	19.26	19.26	15.51	15.51
SPP South - Energy Price - 1H2023	5916	3/13/2039	3/13/2039	15.51	15.51	15.51	15.51	15.51	15.51	19.26	19.26	19.98	19.58	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	15.51	15.51
SPP South - Energy Price - 1H2023	5917	3/14/2039	3/14/2039	16.2	16.2	16.2	16.2	16.2	16.2	21.56	21.56	21.56	21.56	21.56	21.56	19.84	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	16.2	16.2
SPP South - Energy Price - 1H2023	5918	3/15/2039	3/15/2039	16.02	16.02	16.02	16.02	16.02	16.02	21.35	21.35	21.35	21.35	21.35	21.35	19.64	8.24	19.64	8.22	19.64	19.64	21.35	21.35	21.35	21.35	16.02	16.02
SPP South - Energy Price - 1H2023	5919	3/16/2039	3/16/2039	15.91	15.91	15.91	15.91	15.91	15.91	21.21	21.21	21.21	3.38	3.38	3.06	3.13	3.28	3.37	3.5	7.94	8.35	21.21	21.21	21.21	21.21	15.91	15.91
SPP South - Energy Price - 1H2023	5920	3/17/2039	3/17/2039	17.59	17.59	17.59	17.59	18.25	19.65	26.99	26.93	27.08	27.08	24.21	25.95	24.21	24.21	24.21	24.21	24.21	24.21	25.49	24.94	24.21	24.21	17.59	17.59
SPP South - Energy Price - 1H2023	5921	3/18/2039	3/18/2039	16.53	16.53	16.53	16.53	16.53	16.53	22.94	21.15	3.48	3.38	3.05	3.06	0.53	14.14	16.84	17.1	19.3	22.94	22.94	22.94	22.94	22.94	16.53	16.53
SPP South - Energy Price - 1H2023	5922	3/19/2039	3/19/2039	16.53	16.53	16.53	16.53	17.97	17.97	22.31	21.13	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	16.53	16.53
SPP South - Energy Price - 1H2023	5923	3/20/2039	3/20/2039	16.53	16.53	16.53	16.53	16.53	16.53	21.33	20.53	20.53	20.53	20.53	20.53	20.53	20.53	20.53	18.06	20.53	20.53	20.53	20.53	20.53	20.53	16.53	16.53
SPP South - Energy Price - 1H2023	5924	3/21/2039	3/21/2039	16.91	16.91	16.91	16.91	16.91	19.43	26.15	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.53	23.79	23.45	23.4	23.4	17.68	17.26
SPP South - Energy Price - 1H2023	5925	3/22/2039	3/22/2039	16.43	17.09	17.09	17.09	16.43	17.09	23.57	22.82	22.82	22.82	22.82	22.82	22.82	22.82	22.82	22.89	22.87	22.82	23.8	23.67	23.54	23.27	17.32	17.39
SPP South - Energy Price - 1H2023	5926	3/23/2039	3/23/2039	17.2	17.2	17.2	16.3	16.47	17.2	23.17	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	15.75	15.75
SPP South - Energy Price - 1H2023	5927	3/24/2039	3/24/2039	14.74	15.3	15.33	15.31	16.09	15.98	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	14.74	14.74
SPP South - Energy Price - 1H2023	5928	3/25/2039	3/25/2039	13.79	13.79	13.79	13.79	13.79	13.79	19.64	19.64	17.29	18.8	18.8	17.29	17.29	19.64	19.64	19.64	19.64	19.64	19.64	21.7	21.02	21.41	15.34	13.79
SPP South - Energy Price - 1H2023	5929	3/26/2039	3/26/2039	13.79	13.79	13.88	14.42	14.3	13.79	18.62	17.13	17.13	17.13	17.13	17.13	17.13	17.13	17.13	17.13	17.13	17.73	19.06	19.06	18.62	18.62	14.21	13.79
SPP South - Energy Price - 1H2023	5930	3/27/2039	3/27/2039	13.79	13.79	13.79	13.79	13.79	13.79	17.13	17.13	17.13	4.61	0	0	0	0	0	0	0.59	5.18	17.13	17.13	17.13	17.13	13.79	12.69
SPP South - Energy Price - 1H2023	5931	3/28/2039	3/28/2039	13.79	12.69	12.69	12.69	13.79	14.21	20.14	14.94	4.54	4.37	8.97	10.33	16.46	16.46	16.46	8.8	20.14	20.14	20.73	20.58	20.57	20.55	14.59	14.59
SPP South - Energy Price - 1H2023	5932	3/29/2039	3/29/2039	14.93	14.93	14.93	14.93	14.93	14.98	21.01	21.01	21.01	21.01	21.01	6.24	17.69	19.33	8.84	8.09	21.01	21.01	21.01	21.01	21.01	21.01	14.93	14.93
SPP South - Energy Price - 1H2023	5933	3/30/2039	3/30/2039	15.34	15.34	15.34	15.34	15.34	15.34	21.5	21.5	21.5	21.5	21.5	19.78	19.78	19.78	19.78	21.5	21.5	21.5	21.5	21.5	21.5	21.5	15.34	15.34
SPP South - Energy Price - 1H2023	5934	3/31/2039	3/31/2039	15.44	15.44	15.44	15.44	15.44	15.44	21.63	21.63	21.63	21.63	21.63	21.63	21.63	21.63	21.63	19.9	21.63	21.63	21.63	21.63	21.63	21.63	15.44	15.44
SPP South - Energy Price - 1H2023	5935	4/1/2039	4/1/2039	7.19	7.19	7.19	7.19	7.19	7.19	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	7.19	7.19
SPP South - Energy Price - 1H2023	5936	4/2/2039	4/2/2039	7.19	7.19	7.82	7.22	7.52	7.2	8.6	8.6	8.6	8.6	8.6	8.6	3.18	2.31	2.19	2.34	3.18	8.6	8.62	8.6	8.6	8.62	7.2	7.19
SPP South - Energy Price - 1H2023	5937	4/3/2039	4/3/2039	7.19	7.19	7.19	7.19	7.19	7.19	8.6	8.6	7.93	7.93	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	9.17	9.17	9.17	9.17	7.19	7.19
SPP South - Energy Price - 1H2023	5938	4/4/2039	4/4/2039	7.05	7.05	7.05	7.05	7.05	7.05	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	7.05	7.05
SPP South - Energy Price - 1H2023	5939	4/5/2039	4/5/2039	7.25	7.25	7.25	7.25	7.25	7.25	4.19	3.75	1.62	0.82	0.82	0.83	1.62	2.23	2.05	2.05	3.45	4.19	4.19	4.19	4.51	4.19	7.63	7.25
SPP South - Energy Price - 1H2023	5940	4/6/2039	4/6/2039	7.63	7.63	7.63	7.63	7.63	7.87	4.37	4.37	4.04	3.75	3.75	3.75	3.79	3.72	4.33	4.37	4.33	4.37	4.37	4.37	4.37	4.37	7.63	7.63
SPP South - Energy Price - 1H2023	5941	4/7/2039	4/7/2039	7.4	7.4	7.4	7.4	7.4	7.4	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	7.4	7.4
SPP South - Energy Price - 1H2023	5942	4/8/2039	4/8/2039	7.27	7.27	7.27	7.27	7.27	7.27	3.98	3.98	2.42	2.55	2.42	2.42	2.42	2.42	1.67	2.42	0.96	2.42	3.98	3.98	3.98	3.98	7.27	7.27
SPP South - Energy Price - 1H2023	5943	4/9/2039	4/9/2039	7.27	7.27	7.27	7.27	7.27	7.27	8.7	2.98	0.33	0	0	0	0	0	0	0	2.42	2.48	8.7	8.7	8.7	8.7	7.27	7.27
SPP South - Energy Price - 1H2023	5944	4/10/2039	4/10/2039	7.27	7.27	7.27	7.27	7.27	7.27	8.7	8.7	8.7	8	8.7	8	2.68	8	8	8.7	8.7	8.7	9.41	8.7	8.7	8.7	7.27	7.27
SPP South - Energy Price - 1H2023	5945	4/11/2039	4/11/2039	7.24	7.24	7.24	7.24	7.24	7.24	3.97	3.97	3.97	3.97	3.97	3.97	2	1.4	1.46	3.45	3.45	3.97	3.97	3.97	3.97	3.97	7.24	7.24
SPP South - Energy Price - 1H2023	5946	4/12/2039	4/12/2039	7.35	7.35	7.35	7.35	7.35	7.35	4.02	4.02	4.02	4.02	3.8	3.49	3.49	3.49	3.49	3.49	3.49	4.02	4.02	4.02	4.02	4.02	7.35	7.35
SPP South - Energy Price - 1H2023	5947	4/13/2039	4/13/2039	7.45	7.45	7.45	7.45	7.45	7.45	4.07	3.8	0.85	0.82	0.82	1.18	0.86	0.87	1.23	4.07	4.07	4.07	4.07	4.07	4.07	4.07	7.45	7.45
SPP South - Energy Price - 1H2023	5948	4/14/2039	4/14/2039	7.3	7.3	7.3	7.3	7.3	7.3	4	3.78	2.17	1.4	1.4	1.52	1.52	1.4	1.4	1.4	1.4	1.43	3.7	4	4	4	7.3	7.3
SPP South - Energy Price - 1H2023	5949	4/15/2039	4/15/2039	7.15	7.15	7.15	7.15	7.15	7.49	4.08	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	7.15	7.15
SPP South - Energy Price - 1H2023	5950	4/16/2039	4/16/2039	7.15	7.15	7.15	7.15	7.15	7.15	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	7.15	7.15
SPP South - Energy Price - 1H2023	5951	4/17/2039	4/17/2039	7.15	7.15	7.15	7.15	7.15	7.15	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	7.15	7.15
SPP South - Energy Price - 1H2023	5952	4/18/2039	4/18/2039	7	7	7	7	7	7	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.86	3.95	3.96	3.85	7.03	7
SPP South - Energy Price - 1H2023	5953	4/19/2039	4/19/2039	7.13	7.13	7.13	7.13	7.13	7.13	3.96	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.95	3.92	7.13	7.13
SPP South - Energy Price - 1H2023	5954	4/20/2039	4/20/2039	6.98	6.98	6.98	7.13	7.13	7.55	3.91	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	6.98	6.98
SPP South - Energy Price - 1H2023	5955	4/21/2039	4/21/2039	6.86	6.86	6.86	6.86	6.86	6.86	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	6.86	6.86
SPP South - Energy Price - 1H2023	5956	4/22/2039	4/22/2039	6.84	6.84	6.84	6.84	6.84	6.84	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	6.84	6.84
SPP South - Energy Price - 1H2023	5957	4/23/2039	4/23/2039	6.84	5.97	5.97	5.97	5.97	5.97	7.14	7.14	7.14	7.14	2.34	2.34	2.15	2.19	2.34	2.34	7.14	8.19	8.19	8.19	8.19	8.19	6.84	6.84
SPP South - Energy Price - 1H2023	5958	4/24/2039	4/24/2039	6.84	6.84	6.84	6.84	6.84	6.84	8.19	8.19	7.53	2.07	2.05	7.53	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	6.84	6.84
SPP South - Energy Price - 1H2023	5959	4/25/2039	4/25/2039	7.1	7.1	7.1	7.1	7.1	7.1	3.88	3.39	3.38	1.53	3.11	3.11	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	7.1	7.1
SPP South - Energy Price - 1H2023	5960	4/26/2039	4/26/2039	7.22	7.22	7.22	7.22	7.22	7.22	3.94	3.94	3.94	3.94	3.94	3.94	3.94	4.42	4.49	4.49	4.49	4.49	4.49	4.49	4.45	4.47	7.43	7.22
SPP South - Energy Price - 1H2023	5961	4/27/2039	4/27/2039	7.18	7.22	7.22	7.22	7.16	7.22	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.93	4.1	3.91	3.91	7.16	7.16
SPP South - Energy Price - 1H2023	5962	4/28/2039	4/28/2039	6.94	7.02	6.94	7	7.02	7.02	3.8	3.8	3.8	3.8	3.61	3.8	3.8	3.8	3.8	1.37	1.82	3.8	3.8	3.8	3.8	3.8	6.94	6.94
SPP South - Energy Price - 1H2023	5963	4/29/2039	4/29/2039	6.81	6.81	6.81	6.81	6.81	6.81	3.74	3.52	0.9	0.6	0.9	0.9	0.9	0.9	0.9	3.74	3.74	3.74	3.74	3.74	3.74	3.74	6.81	6.81
SPP South - Energy Price - 1H2023	5964	4/30/2039	4/30/2039	6.81	6.81	6.81	6.81	6.81	6.81	8.15	8.15	8.15	8.15	2.47	7.5	2.47	7.5	7.5	7.5	8.15	8.15	8.15	8.15	8.15	8.15	6.81	6.81
SPP South - Energy Price - 1H2023	5965	5/1/2039	5/1/2039	8.36	8.36	8.36	8.36	8.36	8.36	9.44	8.69	2.42	8.69	9.44	2.45	9.44	4.22	8.69	9.44	9.44	9.44	9.44	9.44	9.44	9.44	8.36	8.36
SPP South - Energy Price - 1H2023	5966	5/2/2039	5/2/2039	7.88	7.88	7.88	7.88	8.02	8.25	8.39	8.39	6.97	7.58	6.97	6.97	2.75	2.75	6.97	3.5	6.97	8.39	8.39	8.39	8.39	8.39	7.88	7.88
SPP South - Energy Price - 1H2023	5967	5/3/2039	5/3/2039	7.89	7.89	7.89	7.89	7.89	7.89	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.19	8.39	8.39	8.39	8.39	8.39	8.39	7.89	7.89
SPP South - Energy Price - 1H2023	5968	5/4/2039	5/4/2039	8.14	8.14	8.14	8.14	8.14	8.14	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.14	8.14
SPP South - Energy Price - 1H2023	5969	5/5/2039	5/5/2039	8.57	8.57	8.57	8.57	8.57	8.84	9.02	9.02	8.45	7.77	7.77	7.77	3.08	3.08	8.45	7.77	7.77	9.02	9.02	9.02	9.02	9.02	8.57	8.57
SPP South - Energy Price - 1H2023	5970	5/6/2039	5/6/2039	8.56	8.56	8.56	8.56	8.56	8.56	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	9.01	8.56	8.56
SPP South - Energy Price - 1H2023	5971	5/7/2039	5/7/2039	8.56	8.56	8.56	8.56	8.56	8.56	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	8.56	8.56
SPP South - Energy Price - 1H2023	5972	5/8/2039	5/8/2039	8.56	8.56	8.56	8.56	8.56	8.56	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	8.56	8.56
SPP South - Energy Price - 1H2023	5973	5/9/2039	5/9/2039	8.6	8.6	8.6	8.6	8.6	8.6	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	8.6	8.6
SPP South - Energy Price - 1H2023	5974	5/10/2039	5/10/2039	8.71	8.71	8.71	8.71	8.71	8.71	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	8.71	8.71
SPP South - Energy Price - 1H2023	5975	5/11/2039	5/11/2039	8.84	8.84	8.84	8.84	8.84	8.84	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.27	9.5	9.27	9.27	8.86	8.84

SPP South - Energy Price - 1H2023	5976	5/12/2039	5/12/2039	8.93	9.01	8.93	8.93	8.93	9.14	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.51	9.62	9.54	9.01	8.93
SPP South - Energy Price - 1H2023	5977	5/13/2039	5/13/2039	8.93	9.01	9.01	8.9	9.01	9.12	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.33	9.48	9.51	9.52	8.93	8.9
SPP South - Energy Price - 1H2023	5978	5/14/2039	5/14/2039	8.93	9.03	8.9	8.9	8.9	8.9	10.05	10.05	10.19	10.18	10.12	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	8.9	8.9
SPP South - Energy Price - 1H2023	5979	5/15/2039	5/15/2039	8.9	8.9	8.9	8.9	8.9	8.9	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	8.9	8.9
SPP South - Energy Price - 1H2023	5980	5/16/2039	5/16/2039	9.2	9.2	9.2	9.2	9.2	9.24	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.2	9.2
SPP South - Energy Price - 1H2023	5981	5/17/2039	5/17/2039	9.32	9.32	9.32	9.32	9.32	9.32	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.32	9.32
SPP South - Energy Price - 1H2023	5982	5/18/2039	5/18/2039	9.15	9.15	9.15	9.15	9.15	9.15	9.55	8.34	8.29	8.29	8.29	8.29	8.29	8.34	8.29	8.29	8.34	9.55	9.55	9.55	9.55	9.55	9.15	9.15
SPP South - Energy Price - 1H2023	5983	5/19/2039	5/19/2039	9.04	9.04	9.04	9.04	9.04	9.04	9.45	8.9	8.19	8.19	8.19	8.19	8.19	9.45	9.45	9.45	9.45	9.45	9.45	9.45	9.45	9.45	9.04	9.04
SPP South - Energy Price - 1H2023	5984	5/20/2039	5/20/2039	8.69	8.69	8.69	8.69	8.69	8.69	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	9.13	8.69	8.69
SPP South - Energy Price - 1H2023	5985	5/21/2039	5/21/2039	8.69	8.69	8.69	8.69	8.69	8.69	9.81	9.03	9.03	8.6	9.03	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	8.69	8.69
SPP South - Energy Price - 1H2023	5986	5/22/2039	5/22/2039	8.69	8.69	8.69	8.69	8.69	8.69	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	8.69	8.69
SPP South - Energy Price - 1H2023	5987	5/23/2039	5/23/2039	7.73	7.73	7.73	7.73	7.73	7.73	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.01	7.73
SPP South - Energy Price - 1H2023	5988	5/24/2039	5/24/2039	9	9	9	9	9	9	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.98	10	9.88	9.28	9
SPP South - Energy Price - 1H2023	5989	5/25/2039	5/25/2039	9.38	9.46	9.48	9.46	9.46	9.65	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.32	9.32
SPP South - Energy Price - 1H2023	5990	5/26/2039	5/26/2039	9.38	9.38	9.38	9.38	9.38	9.38	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.77	9.38	9.38
SPP South - Energy Price - 1H2023	5991	5/27/2039	5/27/2039	9.55	9.55	9.55	9.55	9.55	9.55	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.55	9.55
SPP South - Energy Price - 1H2023	5992	5/28/2039	5/28/2039	9.55	9.55	9.55	9.55	9.55	9.55	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	9.55	9.55
SPP South - Energy Price - 1H2023	5993	5/29/2039	5/29/2039	9.55	9.55	9.55	9.55	9.55	9.55	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.79	10.78	9.55	9.55
SPP South - Energy Price - 1H2023	5994	5/30/2039	5/30/2039	9.55	9.55	9.55	9.55	9.55	9.55	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.55	9.55
SPP South - Energy Price - 1H2023	5995	5/31/2039	5/31/2039	9.24	9.24	9.24	9.24	9.24	9.24	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.95	10.1	9.79	9.3	9.33
SPP South - Energy Price - 1H2023	5996	6/1/2039	6/1/2039	21.6	21.6	21.6	21.19	21.35	21.6	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	18.24	21.19	21.19
SPP South - Energy Price - 1H2023	5997	6/2/2039	6/2/2039	20.21	20.21	20.21	20.21	20.21	20.21	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	20.21	20.21
SPP South - Energy Price - 1H2023	5998	6/3/2039	6/3/2039	20.05	20.05	20.05	20.05	20.05	20.05	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	20.05	20.05
SPP South - Energy Price - 1H2023	5999	6/4/2039	6/4/2039	20.05	20.05	20.05	20.05	20.05	20.05	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.05	20.05
SPP South - Energy Price - 1H2023	6000	6/5/2039	6/5/2039	20.05	20.05	20.05	20.05	20.12	20.33	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.72	20.55	20.05	20.05
SPP South - Energy Price - 1H2023	6001	6/6/2039	6/6/2039	21.96	21.95	21.95	21.95	21.95	21.95	18.81	18.81	18.81	19.15	18.81	19.15	18.81	18.81	18.81	18.81	18.81	18.81	19.7	18.81	19.15	19.8	21.95	22.66
SPP South - Energy Price - 1H2023	6002	6/7/2039	6/7/2039	23.92	24.03	23.97	23.86	23.92	23.92	20.24	21.44	21.02	20.24	20.24	20.24	20.24	20.24	23.08	23.08	23.08	21.84	22	23.38	23.08	23.08	26.13	23.86
SPP South - Energy Price - 1H2023	6003	6/8/2039	6/8/2039	24.44	24.44	24.59	24.68	24.85	25.06	21.14	21.99	22.77	23.3	23.57	23.57	23.57	23.89	24.22	23.89	23.89	23.57	23.89	23.89	23.89	23.57	26.78	25.43
SPP South - Energy Price - 1H2023	6004	6/9/2039	6/9/2039	24.51	24.51	24.44	24.23	24.42	24.51	20.29	20.32	20.29	20.29	22.06	20.61	23.14	23.14	23.14	24.41	23.14	23.14	23.31	23.14	23.14	22.4	23.93	23.93
SPP South - Energy Price - 1H2023	6005	6/10/2039	6/10/2039	22.66	22.67	22.61	22.7	22.87	23.08	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	18.84	19	19.39	18.84	22.47	22.03
SPP South - Energy Price - 1H2023	6006	6/11/2039	6/11/2039	21.99	21.99	21.99	21.99	21.99	21.99	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	21.99	21.99
SPP South - Energy Price - 1H2023	6007	6/12/2039	6/12/2039	21.99	21.99	21.99	21.99	21.99	21.99	22.54	22.53	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	21.99	21.99
SPP South - Energy Price - 1H2023	6008	6/13/2039	6/13/2039	24.02	24.02	24.02	24.02	24.02	24.02	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	24.02	24.02
SPP South - Energy Price - 1H2023	6009	6/14/2039	6/14/2039	23.06	23.06	23.06	23.06	23.06	23.06	19.64	18.07	6.95	18.42	19.64	19.64	19.64	19.64	19.64	19.64	19.64	19.64	19.64	19.64	19.64	19.64	23.06	23.06
SPP South - Energy Price - 1H2023	6010	6/15/2039	6/15/2039	22.04	22.04	22.04	22.04	22.04	22.04	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	23.31	22.04
SPP South - Energy Price - 1H2023	6011	6/16/2039	6/16/2039	23.31	23.31	23.31	23.31	23.31	23.31	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	19.83	20.53	20.77	23.76	23.46
SPP South - Energy Price - 1H2023	6012	6/17/2039	6/17/2039	23.76	23.76	23.76	23.76	23.76	23.76	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	20.17	21.16	21.16	21.53	22.17	22.01	21.39	25.8	24.69
SPP South - Energy Price - 1H2023	6013	6/18/2039	6/18/2039	24.08	23.76	23.76	23.76	23.76	23.76	24.36	24.36	24.36	24.36	24.36	26.48	24.36	26.48	24.36	24.36	24.36	24.36	25.95	25.55	24.36	24.36	24.34	23.76
SPP South - Energy Price - 1H2023	6014	6/19/2039	6/19/2039	24.08	23.76	23.76	23.76	23.76	23.76	24.36	24.36	24.65	24.36	24.36	24.36	24.36	26.48	25.91	24.36	24.36	26.33	25.81	27.38	27.38	26.68	26.07	24.68
SPP South - Energy Price - 1H2023	6015	6/20/2039	6/20/2039	24.84	24.74	24.68	24.77	24.57	25.15	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	21.4	23.41	22.11	26.87	25.45
SPP South - Energy Price - 1H2023	6016	6/21/2039	6/21/2039	25.79	25.37	24.98	25.07	25.24	25.45	21.01	21.95	21.8	20.95	21.16	21.25	23.87	23.87	23.87	20.95	21.23	21.11	22.68	22.68	22.68	22.49	27.2	27.18
SPP South - Energy Price - 1H2023	6017	6/22/2039	6/22/2039	27.69	27.69	27.67	27.67	27.67	27.67	21.36	21.32	21.29	21.29	21.53	21.29	21.29	21.29	22.87	21.29	21.29	22.87	22.41	24.25	24.59	24.25	27.76	27.73
SPP South - Energy Price - 1H2023	6018	6/23/2039	6/23/2039	27.98	27.76	27.76	27.76	27.62	27.5	21.94	23.35	21.49	23.78	23.78	21.88	24.47	22.7	24.47	23.87	24.47	24.47	25.17	26.31	26.66	24.47	28.77	27.98
SPP South - Energy Price - 1H2023	6019	6/24/2039	6/24/2039	26.95	26.95	26.95	26.95	26.95	26.95	21.94	21.96	20.79	21.46	22.56	22.45	22.28	22.95	23.17	23.7	21.12	22.38	22.95	22.95	23.7	22.95	26.95	26.95
SPP South - Energy Price - 1H2023	6020	6/25/2039	6/25/2039	26.95	25.87	25.44	24.97	25.01	25.31	25.57	25.4	26.53	26.03	25.21	25.21	26.71	27.55	27.62	26.89	25.34	26.08	27.55	26.08	27.55	26.08	24.64	24.59
SPP South - Energy Price - 1H2023	6021	6/26/2039	6/26/2039	24.59	24.59	24.59	24.59	24.59	24.59	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	26.08	25.21	27.4	25.21	25.21	26.64	25.21	24.59	24.59
SPP South - Energy Price - 1H2023	6022	6/27/2039	6/27/2039	23.22	23.22	23.22	23.22	23.22	23.34	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	23.22	23.22
SPP South - Energy Price - 1H2023	6023	6/28/2039	6/28/2039	23.4	23.4	23.4	23.4	23.4	23.4	19.9	19.9	19.9	20.02	19.9	19.9	19.9	19.9	20.02	19.9	20.02	19.9	19.9	20.48	20.9	21.47	24.56	24.38
SPP South - Energy Price - 1H2023	6024	6/29/2039	6/29/2039	25.14	24.43	24.26	24.59	24.93	24.56	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	20.23	23.89	23.84
SPP South - Energy Price - 1H2023	6025	6/30/2039	6/30/2039	22.44	21.77	21.77	21.77	22.19	21.77	18.67	18.67	18.67	18.67	18.67	18.67	18.67	18.67	18.67	18.67	18.67	18.67	19.47	18.67	18.67	18.67	21.77	21.77
SPP South - Energy Price - 1H2023	6026	7/1/2039	7/1/2039	40.16	39.89	39.8	39.72	40.1	39.76	38.87	38.15	41.17	41.17	37.88	38.32	43.23	43.23	43.23	43.23	43.23	43.76	48.91	43.47	43.23	42.41	40.47	41.16
SPP South - Energy Price - 1H2023	6027	7/2/2039	7/2/2039	41.91	39.89	39.84	39.84	42.2	40.06	47.08	47.51	49.54	46.66	45.27	46.77	49.54	49.54	50.84	50.93	50.84	50.93	49.54	47.21	49.54	49.26	42.2	41.6
SPP South - Energy Price - 1H2023	6028	7/3/2039	7/3/2039	41.12	40.84	39.8	39.84	40.1	39.48	45.27	45.27	45.27	45.27	45.27	45.27	45.27	49.21	45.27	49.21	47.11	45.27	49.54	49.54	50.35	50.79	42.2	40.48
SPP South - Energy Price - 1H2023	6029	7/4/2039	7/4/2039	40.79	39.89	39.8	39.84	40.1	41.73	40.28	38.78	37.88	37.91	39.03	43.23	43.76	43.76	43.76	43.76	42.9	43.23	43.76	43.23	43.76	43.76	43.38	43.37
SPP South - Energy Price - 1H2023	6030	7/5/2039	7/5/2039	44.84	43.38	42.21	42.13	43.6	43.71	43.77	43.68	43.95	46.68	46.68	46.68	51.4	49.25	53.21	54.41	54.41	54.41	55.78	52.47	55.42	54.41	55.72	54.74
SPP South - Energy Price - 1H2023	6031	7/6/2039	7/6/2039	48.09	46.43	46.27	45.53	45.16	46.27	45.66	45.66	47.92	46.27	52.98	53.06	51.87	51.96	48.81	51.96	48.27	54.05	55.02	55.24	54.05	54.05	51.43	46.51
SPP South - Energy Price - 1H2023	6032	7/7/2039	7/7/2039	44.98	44.62	44.62	44.41	44.98	44.98	44.58	44.58	42.11	41.33	44.04	41.69	45.15	44.58	50.61	46.56	50.61	50.61	53.59	53.74	50.11	50.61	53.55	45.24
SPP South - Energy Price - 1H2023	6033	7/8/2039	7/8/2039	45.55	44.61	44.51	44.5	43.34	44.34	41.13	41.83	40.66	43.01	44.17	44.17	45.86	47.74	48.45	49.97	52.01	52.01	53.12	52.01	53.35	52.01	57.64	52.96
SPP South - Energy Price - 1H2023	6034	7/9/2039	7/9/2039	46.54	45.14	44.5	44.5	44.5	43.29	50.82	50.82	49.11	48.27	50.82	50.82	50.82	50.82	52.1	51.98	51.72	57.04	61.82	62.18	60.8	58.55	46.97	44.69
SPP South - Energy Price - 1H2023	6035	7/10/2039	7/10/2039	44.5	43.29	43.29	43.29	43.29	43.29	49.49	49.49	49.44	48.24	49.49	49.3	50.82	50.82	51.08	50.82	52.25	52.25	51.49	53.8	52.25	52.25	43.29	43.29
SPP South - Energy Price - 1H2023	6036	7/11/2039	7/11/2039	44.6	42.21	42.15	42.15	42.41	43.88	42.34	40.01	39.74	39.74	39.74	39.74	39.74	39.74	39.74	39.74	39.74	39.74	42.38	42.6	42.7	43.2	43.34	43.34
SPP South - Energy Price - 1H2023	6037	7/12/2039	7/12/2039	43.08	43.34	43.34	42.76	43.02	44.45	43.57	44.06	41.01	40.54	41.75	45.85	45.86	45.85	45.86	46.47	45.86	45.86	45.86	45.86	45.86	45.85	45.22	45.22
SPP South - Energy Price - 1H2023	6038	7/13/2039	7/13/2039	45.22	45.22	45.22	45.22	45.22	45.22	41.97	40.96	40.53	40.53	40.53	40.53	41.54	40.53	40.53	42.53	40.53	41.97	46.82	46.19	41.97	41.97	43.8	43.8
SPP South - Energy Price - 1H2023	6039	7/14/2039	7/14/2039	42.99	43.8	43.8	43.8	43.8	43.8	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	45.89	48.17	41.7	48.17	47.13	45.52
SPP South - Energy Price - 1H2023	6040	7/15/2039	7/15/2039	43.17	41.73	41.73	41.73	41.73	43.17	40.62	43.88	40.62	41.2	42.53	40.82	42.42	43.49	43.16	42.52	43.82	45.38	46.08	46.92	46.92	46.92	47.02	45.24
SPP South - Energy Price - 1H2023	6041	7/16/2039	7/16/2039	44.87	44.6	44.46	43.3	43.51	41.73	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	49.86	55.21	53.14	53.27	53.68	44.22	43.14
SPP South - Energy Price - 1H2023	6042	7/17/2039	7/17/2039	41.73	41.73	41.73	41.73	42.43	41.73	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	48.99	51.35	53.68	54.51	54.52	45.72	45.24
SPP South - Energy Price - 1H2023	6043	7/18/2039	7/18/2039	43.95	42.82	42.73	42.77	43.03	42.72	39.24	41.37	39.24	41.58	44.39	42.71	44.75	45.33	45.53	45.9	46.43	49.66	50.82	49.66	50.82	49.99	51.22	46.28
SPP South - Energy Price - 1H2023	6044	7/19/2039	7/19/2039	45.55	45.54	44.3	44.78	44.86	44.34	43.13	44.44	43.88	44.2	42.29	45.05	45.64	45.28	45.56	45.05	45.64	45.05	53.22	45.64	45.64	49.2	45.62	43.05
SPP South - Energy Price - 1H2023	6045	7/20/2039	7/20/2039	42.26	42.26	42.26	42.23	42.26	41.78	39.02	39.02	39.02	39.02	39.02	39.02	39.08	39.02	39.02	39.02	40.69	40.69	45.07	45.07	40.61	44.32	43.4	40.66
SPP South - Energy Price - 1H2023	6046	7/21/2039	7/21/2039	40.66	40.66	40.58	40.66	40.66	40.66	39.77	38.33	38.33	38.33	38.96	43.56	40.46	41.8	43.73	43.73	42.41	43.73	43.73	44.07	45.56	44.28	43.98	42.78
SPP South - Energy Price - 1H2023	6047	7/22/2039	7/22/2039	41.47	42.35	42.35	42.35	42.35	41.87	40.4	42.23	42.03	43.9	43.9	43.9	43.36	42.46	43.9	43.9	43.9	43.9	44.53	43.9	43.9	43.9	42.35	42.35
SPP South - Energy Price - 1H2023	6048	7/23/2039	7/23/2039	42.35	42.35	39.94	42.35	42.35	42.35	45.74	45.74	45.43	45.74	45.74	45.74	49.72	49.5	49.72	49.72	49.72	49.72	50.5	49.72	49.72	48.15	40.72	40.12
SPP South - Energy Price - 1H2023	6049	7/24/2039	7/24/2039	40.24	39.77	38.7	38.7	39.72	38.7	45.43	45.43	45.43	45.43	45.43	45.43	45.43	45.43	49.6	49.72	49.72	49.72	50.5	49.72	49.72	50.5	42.35	42.35
SPP South - Energy Price - 1H2023	6050	7/25/2039	7/25/2039	41	39.57	39.54	40.52	40.43	41.76	38.41	37.91	37.91	37.94	37.91	40.51	43.26	41.37	42.53	42.44	43.26	43.26	45.77	43.79	43.26	43.26	43.41	41.26
SPP South - Energy Price - 1H2023	6051	7/26/2039	7/26/2039	41.26	41.26	41.26	41.26	41.26	40.63	40.14	38.13	38.13	38.13	38.13	38.13	43.51	44.05	43.51	44.05	44.05	44.05	45.7	44.05	44.05	44.05	42.52	42.52
SPP South - Energy Price - 1H2023	6052	7/27/2039	7/27/2039	42.94	42.52	42.52	39.23	40.79	41.35	39.71	40.38	41.24	42.53	43.87	44.42	43.87	44.43	44.43	44.43	44.43	44.43	48.25	45.54	44.43	43.87	43.39	43.39
SPP South - Energy Price - 1H2023	6053	7/28/2039	7/28/2039	39.63	43.39	43.39	43.39	43.39	43.39	44.26	42.94	40.72	43.05	44.5	49.01	50.21	50.21	50.21	50.21	50.21	50.21	50.21	50.21	50.21	48.52	44.61	44.22
SPP South - Energy Price - 1H2023	6054	7/29/2039	7/29/2039	43.01	44.22	43.01	43.01	44.22	44.22	43.93	42.6	43.86	44.49	43.93	43.93	44.49	49.02	49.02	49.8	49.02	47.25	49.02	49.02	47.29	44.49	44.11	42.51
SPP South - Energy Price - 1H2023	6055	7/30/2039	7/30/2039	40.68	40.68	39.29	40.68	41.89	39.29	48.14	50.5	50.5	50.79	51.92	51.92	51.92	51.92	51.92	51.92	51.92	51.91	51.92	50.5	50.5	50.8	43.01	42.51
SPP South - Energy Price - 1H2023	6056	7/31/2039	7/31/2039	39.29	40.62	40.47	39.29	39.29	39.29	46.13	46.13	46.13	46.13	46.13	48.4	49.89	50.5	51.48	51.78	51.91	51.91	51.91	55.56	51.92	51.91	44.11	43.01
SPP South - Energy Price - 1H2023	6057	8/1/2039	8/1/2039	42.82	42.82	42.82	42.53	42.82	42.82	43.5	43.61	41.58	41	46.84	47.37	46.84	47.37	47.37	47.81	52.69	52.69	54.39	55.12	52.69	52.69	48.9	49.25
SPP South - Energy Price - 1H2023	6058	8/2/2039	8/2/2039	49.79	49.25	49.25	49.12	49.12	49.25	52.63	52.47	48.42	52.02	52.63	53.34	58.15	59.94	59.94	59.94	60.52	63.02	68.67	63.38	63.64	60.52	57.51	50.51

SPP South - Energy Price - 1H2023	6059	8/3/2039	8/3/2039	50.5	46.24	49.49	50.01	50.01	50.01	52.44	50.39	48.25	52.81	53.44	53.44	54.18	54.18	54.18	55.57	55.28	57.13	59.56	60.96	57.81	54.18	50.14	50.01
SPP South - Energy Price - 1H2023	6060	8/4/2039	8/4/2039	50.6	50.38	48.86	46.16	49	48.49	53.5	49.21	53.99	52.05	53.99	53.99	53.99	53.99	49.67	54.74	54.74	55.52	56.52	54.74	54.74	53.99	50.6	50.31
SPP South - Energy Price - 1H2023	6061	8/5/2039	8/5/2039	50.31	50.3	50.31	50.3	50.31	50.31	47.14	47.14	47.14	47.14	47.14	47.14	47.14	53.44	53.61	53.72	51.5	53.72	54.46	54.46	53.72	53.72	50.73	50.31
SPP South - Energy Price - 1H2023	6062	8/6/2039	8/6/2039	50.3	50.11	49.75	49.25	48.73	48.22	44.99	44.99	44.99	44.99	44.99	44.99	44.99	44.99	48.56	48.92	49.09	49.31	49.21	49.31	49.31	49.31	50.31	50.31
SPP South - Energy Price - 1H2023	6063	8/7/2039	8/7/2039	50.3	50.2	50.31	50.31	50.2	50.2	45.05	45.05	44.99	44.99	45.05	45.05	45.05	49.21	45.81	45.27	49.31	49.31	49.31	49.63	49.76	49.31	50.2	50.3
SPP South - Energy Price - 1H2023	6064	8/8/2039	8/8/2039	46.58	46.58	46.58	49.68	49.16	50.78	50.18	49.36	47.68	52.44	48.24	54.15	54.15	54.15	54.15	54.15	54.15	54.15	54.15	54.15	54.15	54.15	50.58	49.76
SPP South - Energy Price - 1H2023	6065	8/9/2039	8/9/2039	49.76	49.76	49.27	49.68	49.76	49.76	50.76	49.77	46.7	46.7	52.79	53.22	53.22	53.22	53.95	53.95	53.22	50.11	53.22	53.22	53.22	53.22	49.76	49.76
SPP South - Energy Price - 1H2023	6066	8/10/2039	8/10/2039	41.77	41.77	41.77	41.59	41.07	40.79	40.14	40.14	40.14	40.14	40.14	40.14	40.14	40.14	40.14	40.14	40.28	40.57	43.35	44.62	42.74	41.49	38.23	38.23
SPP South - Energy Price - 1H2023	6067	8/11/2039	8/11/2039	34.39	34.39	34.39	34.39	34.39	34.39	36.63	36.63	36.63	36.63	36.63	36.63	36.63	36.63	40.02	40.02	40.02	40.02	40.02	41.95	41.95	40.02	37.5	37.5
SPP South - Energy Price - 1H2023	6068	8/12/2039	8/12/2039	35.53	35.29	35.53	34.03	34.03	35.53	36.72	36.87	36.31	36.31	36.31	36.31	36.31	36.31	36.31	39.69	37.74	39.69	41.59	41.58	39.69	39.69	34.29	34.22
SPP South - Energy Price - 1H2023	6069	8/13/2039	8/13/2039	34.03	34.03	34.03	34.03	34.03	34.03	33.36	33.88	33.81	33.36	33.36	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	36.37	34.03	34.03
SPP South - Energy Price - 1H2023	6070	8/14/2039	8/14/2039	34.03	34.03	34.03	34.03	34.03	34.03	33.36	33.87	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	36.37	37.49	36.44	36.49	37.1	37.1
SPP South - Energy Price - 1H2023	6071	8/15/2039	8/15/2039	42.7	42.7	39.28	39.28	39.28	39.28	42.24	41.1	41.1	41.1	41.1	41.1	41.1	41.48	44.96	43.53	43.49	43.15	46.95	46.95	46.95	46.33	43.34	43.24
SPP South - Energy Price - 1H2023	6072	8/16/2039	8/16/2039	50.15	47.56	47.56	47.56	47.56	47.56	47.02	47.02	47.02	47.02	47.02	47.02	47.51	48.91	47.91	53.58	50.23	53.58	55.54	54.31	53.58	53.58	50.15	50.15
SPP South - Energy Price - 1H2023	6073	8/17/2039	8/17/2039	50.15	50.15	50.15	50.15	49.18	49.31	50.42	48.13	48.13	48.13	48.13	48.13	49.26	51.18	52	52.33	52.85	53.28	61.5	61.37	55.6	53.74	51.51	51.06
SPP South - Energy Price - 1H2023	6074	8/18/2039	8/18/2039	51.06	51.06	50.43	51.06	51.06	51.06	50.41	47.97	47.76	47.76	47.76	48.84	49.56	50.89	51.63	54.41	55.17	54.69	65.32	63.47	60.3	55.17	52.52	52.04
SPP South - Energy Price - 1H2023	6075	8/19/2039	8/19/2039	50.76	49.37	50.76	50.76	50.76	50.76	51.46	48.58	46.48	46.37	52.83	52.57	52.86	52.86	53.57	55.34	56.83	58.39	60.22	58.91	57.54	55.71	50.76	49.37
SPP South - Energy Price - 1H2023	6076	8/20/2039	8/20/2039	49.37	49.27	48.91	48.41	48.41	48.41	47.46	47.46	45.43	47.03	47.46	47.46	48.39	49.76	55.44	59.14	59.97	65.85	65.71	61.09	59.97	59.31	50.76	50.76
SPP South - Energy Price - 1H2023	6077	8/21/2039	8/21/2039	49.92	49.36	49.36	48.41	47.89	49.36	48.39	45.92	48.39	48.39	48.39	48.39	48.39	49.17	48.39	57.5	57.53	59.31	65.71	59.31	59.31	58.85	50.76	50.76
SPP South - Energy Price - 1H2023	6078	8/22/2039	8/22/2039	50.76	49.62	49.62	50.76	49.62	51.02	53.08	54.08	53.8	53.08	60.23	55.4	60.51	57.05	62.93	60.51	62.93	62.93	63.57	64.09	62.93	59.48	59	51.02
SPP South - Energy Price - 1H2023	6079	8/23/2039	8/23/2039	51.74	51.04	51.04	49.07	47.19	51.04	54.57	54.57	50.2	51.98	55.04	54.65	54.99	51.71	55.82	55.04	55.04	55.82	62.96	62.96	55.82	55.82	51.74	50.13
SPP South - Energy Price - 1H2023	6080	8/24/2039	8/24/2039	50.13	47.34	47.34	50.13	50.13	50.13	51.18	51.68	48.46	54.84	55.19	55.84	58.96	63.15	66.88	65.68	66.88	66.88	66.88	67.18	67.34	64.28	63.73	53.92
SPP South - Energy Price - 1H2023	6081	8/25/2039	8/25/2039	53.79	52.94	51.79	52.57	52.57	53.79	56.72	54.37	55.8	55.8	55.8	56.05	58.39	60.36	63.91	63.91	63.91	63.91	63.91	66.29	63.91	63.91	61.83	53.79
SPP South - Energy Price - 1H2023	6082	8/26/2039	8/26/2039	53.5	52.48	52.2	53.5	53.5	53.5	57.96	58.1	61.45	63.48	64.88	66.86	64.88	63.48	64.25	64.28	64.88	65.21	64.88	63.48	63.48	62.78	52.53	52.99
SPP South - Energy Price - 1H2023	6083	8/27/2039	8/27/2039	52.2	52.2	52.2	52.2	52.2	52.2	51.17	48.28	47.46	51.17	51.17	51.17	54.28	56.6	56.92	62.83	62.83	62.83	68.44	62.83	62.83	52.63	52.2	52.2
SPP South - Energy Price - 1H2023	6084	8/28/2039	8/28/2039	52.2	49.48	49.61	48.99	48.52	48.52	48.45	48.48	47.34	46.97	47.34	47.34	51.17	51.17	51.17	51.17	51.17	50.5	51.46	52.08	51.69	51.46	52.2	52.2
SPP South - Energy Price - 1H2023	6085	8/29/2039	8/29/2039	41.47	41.47	41.49	41.47	41.47	41.47	42.32	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	45.6	46.09	50.43	50.13	49.16	47.79	43.55	43.81
SPP South - Energy Price - 1H2023	6086	8/30/2039	8/30/2039	49.05	49.05	49.05	49.05	49.05	50.21	52.57	49.84	46.74	46.47	46.47	46.47	46.74	52.57	52.57	53.27	53.27	53.27	59.66	58.82	55.93	53.27	50.44	49.05
SPP South - Energy Price - 1H2023	6087	8/31/2039	8/31/2039	46.63	46.63	46.62	46.63	46.63	46.63	47.96	44.97	44.12	44.12	44.12	44.12	44.12	44.12	44.12	44.12	44.12	50.97	51.33	54.43	51.87	49.9	46.63	46.63
SPP South - Energy Price - 1H2023	6088	9/1/2039	9/1/2039	39.16	39.16	39.31	39.16	39.16	40.74	39.1	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	36.53	40.99	45.97	43.4	40.99	40.99	41.89	41.53
SPP South - Energy Price - 1H2023	6089	9/2/2039	9/2/2039	41.45	41.45	41.19	41.45	41.45	41.45	40.62	39.14	37.37	40.62	40.62	40.62	40.62	45.5	46.71	46.34	46.34	47.25	46.34	46.34	45.75	44.02	40.31	40.31
SPP South - Energy Price - 1H2023	6090	9/3/2039	9/3/2039	40.31	40.31	40.31	40.31	39.82	40.31	52.26	52.46	54.33	54.33	56.55	55	55	56.55	56.55	56.55	56.55	55.59	67.16	67.41	62.49	59.05	40.74	37.68
SPP South - Energy Price - 1H2023	6091	9/4/2039	9/4/2039	37.75	37.07	39	37.31	37.48	37.5	51.32	51.24	50.96	50.19	50.19	50.19	50.9	53.37	55	55	56.55	67.41	63.53	66.78	62.49	56.55	40.31	40.31
SPP South - Energy Price - 1H2023	6092	9/5/2039	9/5/2039	40.31	40.31	40.31	39.05	40.31	40.31	38.74	38.5	35.64	35.86	35.64	35.99	35.72	36.16	40.62	40.62	40.06	40.62	45.87	43.66	40.62	40.62	40.31	38.3
SPP South - Energy Price - 1H2023	6093	9/6/2039	9/6/2039	38.3	37.89	38.3	38.13	38.3	38.48	36.84	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	37.54	38.9	36.3	41.93	41.36	40.84	38.9	38.42	37.55
SPP South - Energy Price - 1H2023	6094	9/7/2039	9/7/2039	38.42	38.42	38.42	38.63	38.17	38.83	41.8	40.76	41.8	41.8	41.81	42.39	42.39	42.39	42.39	42	41.85	41.81	42.39	43.3	42.39	41.81	41.68	41.68
SPP South - Energy Price - 1H2023	6095	9/8/2039	9/8/2039	40.96	40.96	40.96	40.96	40.96	40.96	39.99	39.31	37.57	36.36	36.15	36.15	36.15	36.15	36.15	36.15	36.15	37.57	37.44	37.57	38.3	37.57	37.86	38.34
SPP South - Energy Price - 1H2023	6096	9/9/2039	9/9/2039	37.16	36.85	37.22	37.1	37.22	37.29	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	36.59	36.59
SPP South - Energy Price - 1H2023	6097	9/10/2039	9/10/2039	36.59	36.59	36.59	36.59	36.59	36.59	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	54.26	54.26	50.8	49.92	36.88	36.59
SPP South - Energy Price - 1H2023	6098	9/11/2039	9/11/2039	36.59	36.59	36.59	36.59	36.59	36.59	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	49.92	52.55	54.02	52.5	50.03	37.08	37.23
SPP South - Energy Price - 1H2023	6099	9/12/2039	9/12/2039	36.28	36.52	36.88	36.76	36.93	36.95	37.82	37.85	36.61	35.2	35.2	35.2	35.2	35.36	40.13	40.13	40.13	40.13	40.13	40.13	40.13	40.13	36.95	37.11
SPP South - Energy Price - 1H2023	6100	9/13/2039	9/13/2039	36.38	36.55	36.1	36.55	36.3	36.17	37.14	37.31	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	34.58	35.67	34.58	34.58	34.58	35.55	35.55
SPP South - Energy Price - 1H2023	6101	9/14/2039	9/14/2039	35.82	35.82	35.82	35.82	35.82	35.82	34.81	34.81	34.81	34.81	34.81	34.81	34.81	34.81	34.81	34.81	34.81	34.81	39.69	34.81	34.81	34.81	36.31	36.55
SPP South - Energy Price - 1H2023	6102	9/15/2039	9/15/2039	36.51	36.51	36.51	36.51	36.51	36.51	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	38.54	38.93	37.42	35.42	37	37.38
SPP South - Energy Price - 1H2023	6103	9/16/2039	9/16/2039	36.27	36.46	36	36.46	36.21	36.22	35.52	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	35.46	35.46
SPP South - Energy Price - 1H2023	6104	9/17/2039	9/17/2039	35.46	35.46	35.46	35.46	35.46	35.46	48.38	14.21	8.58	14.21	9.13	10.04	14.21	14.21	15.93	17.65	48.38	48.38	48.38	48.38	48.38	48.38	35.46	35.46
SPP South - Energy Price - 1H2023	6105	9/18/2039	9/18/2039	35.46	35.46	35.46	35.46	35.46	35.46	48.38	12.27	8.58	7.95	9.13	10.04	12.27	14.21	15.93	48.38	48.38	48.38	48.38	48.38	48.38	48.38	35.46	35.46
SPP South - Energy Price - 1H2023	6106	9/19/2039	9/19/2039	30.44	30.44	30.44	30.44	30.44	30.44	30.18	30.18	30.18	30.18	30.18	30.18	30.18	30.18	30.18	31.15	31.15	34.51	34.51	31.15	31.15	31.09	30.44	30.44
SPP South - Energy Price - 1H2023	6107	9/20/2039	9/20/2039	33.41	33.41	33.41	33.41	33.41	33.87	33.08	32.74	32.74	32.74	32.74	32.86	32.74	33.09	37.37	37.37	37.37	37.37	37.37	37.37	37.37	33.86	33.54	33.41
SPP South - Energy Price - 1H2023	6108	9/21/2039	9/21/2039	33.34	33.34	33.34	33.34	33.41	33.8	33.25	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	37.31	37.31	37.31	34.02	32.92	33.47	33.34
SPP South - Energy Price - 1H2023	6109	9/22/2039	9/22/2039	35.32	35.32	35.32	35.32	35.32	35.32	34.92	34.38	34.38	34.38	34.38	34.38	34.38	34.38	34.38	34.38	34.38	39.21	39.21	39.21	35.97	35.64	35.32	35.32
SPP South - Energy Price - 1H2023	6110	9/23/2039	9/23/2039	33.2	33.2	33.57	33.45	33.62	33.64	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	32.55	33.2	33.2
SPP South - Energy Price - 1H2023	6111	9/24/2039	9/24/2039	33.2	33.2	33.2	33.2	33.2	33.2	45.3	17.64	14.81	14.81	14.81	10.04	12.27	14.81	15.93	45.29	45.29	45.29	45.3	45.3	45.29	45.29	33.2	33.2
SPP South - Energy Price - 1H2023	6112	9/25/2039	9/25/2039	24	24.11	19.41	19.41	21.09	21.09	28.17	10.49	2.63	2.39	0	2.79	3.55	4.72	4.34	18.46	17.81	45.29	45.3	45.29	45.29	45.29	30.25	30.23
SPP South - Energy Price - 1H2023	6113	9/26/2039	9/26/2039	28.51	28.51	28.51	28.51	28.51	30.99	30.69	26.14	24.05	24.05	21.57	21.57	30.69	30.69	30.69	30.69	30.69	30.69	31.88	32.12	31.88	30.69	31.03	31.03
SPP South - Energy Price - 1H2023	6114	9/27/2039	9/27/2039	35.37	35.37	35.37	35.37	35.37	35.37	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	35.86	36.8	36.14	36.04	34.42	35.37	35.37
SPP South - Energy Price - 1H2023	6115	9/28/2039	9/28/2039	35.53	35.53	35.53	35.53	35.53	35.53	34.56	35.16	35.08	35.3	35.07	35.18	35.57	35.89	35.56	35.89	35.78	36.17	36.93	36.24	35.89	35.89	35.6	35.53
SPP South - Energy Price - 1H2023	6116	9/29/2039	9/29/2039	35.6	35.6	35.6	35.6	35.6	35.6	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	34.62	35.6	35.6
SPP South - Energy Price - 1H2023	6117	9/30/2039	9/30/2039	36	36	36	36	36	36	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	36	36
SPP South - Energy Price - 1H2023	6118	10/1/2039	10/1/2039	18.34	18.34	18.34	18.34	18.34	18.34	21.97	21.97	4.7	2.03	1.1	1.32	1.69	2.2	1.88	2.03	7.6	21.97	21.97	21.97	21.97	21.97	18.34	18.34
SPP South - Energy Price - 1H2023	6119	10/2/2039	10/2/2039	18.34	18.34	18.34	18.34	18.34	18.34	21.97	21.97	7.6	7.6	7.6	5.78	6.73	7.6	8.44	8.76	21.97	21.97	21.97	21.97	21.97	21.97	18.34	18.34
SPP South - Energy Price - 1H2023	6120	10/3/2039	10/3/2039	18.79	18.79	18.79	18.79	18.79	18.79	21.15	21.15	19.88	20.22	19.45	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.9	21.15	21.15	21.15	18.79	18.79
SPP South - Energy Price - 1H2023	6121	10/4/2039	10/4/2039	17.89	17.89	17.89	17.89	17.89	17.89	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	17.89	17.89
SPP South - Energy Price - 1H2023	6122	10/5/2039	10/5/2039	17.6	17.6	17.6	17.6	17.6	17.6	19.96	19.96	19.96	18.36	18.36	18.36	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	17.6	17.6
SPP South - Energy Price - 1H2023	6123	10/6/2039	10/6/2039	18.31	18.31	18.31	18.31	18.31	18.31	20.67	18.51	3.86	3.92	4.26	6.59	6.59	6.59	11.64	20.67	20.67	20.67	20.67	20.67	20.67	20.67	18.31	18.31
SPP South - Energy Price - 1H2023	6124	10/7/2039	10/7/2039	18.43	18.43	18.43	18.43	18.43	18.43	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	18.43	18.43
SPP South - Energy Price - 1H2023	6125	10/8/2039	10/8/2039	18.43	18.43	18.43	18.43	18.43	18.43	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.17	22.99	22.08	22.08	22.08	18.43	18.43
SPP South - Energy Price - 1H2023	6126	10/9/2039	10/9/2039	18.43	18.43	18.43	18.43	18.43	18.43	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08	18.43	18.43
SPP South - Energy Price - 1H2023	6127	10/10/2039	10/10/2039	17.95	17.95	17.95	17.95	17.95	17.95	21.4	21.4	21.4	23.26	23.26	21.4	21.4	21.4	21.4	22.73	23.26	24.08	24.08	24.08	23.26	21.4	20.53	20.53
SPP South - Energy Price - 1H2023	6128	10/11/2039	10/11/2039	20.53	20.51	20.53	20.53	20.69	20.69	24.23	21.97	21.53	21.53	21.53	21.53	21.53	21.53	19.81	21.53	21.53	21.53	21.53	21.53	21.53	21.53	18.08	18.08
SPP South - Energy Price - 1H2023	6129	10/12/2039	10/12/2039	17.77	17.77	17.77	17.77	17.77	17.77	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.74	21.74	21.74	20.32	20.32
SPP South - Energy Price - 1H2023	6130	10/13/2039	10/13/2039	20.54	20.59	20.59	20.59	20.59	20.59	24.14	22.92	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	24.14	24.14	24.14	24.14	24.14	18	18
SPP South - Energy Price - 1H2023	6131	10/14/2039	10/14/2039	18	18	18	17.51	18	18	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	23.55	23.55	23.55	20.95	20.01	17.51
SPP South - Energy Price - 1H2023	6132	10/15/2039	10/15/2039	17.51	17.51	17.51	17.51	18.64	18.85	22.8	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	22.8	22.8	22.8	20.97	20.97	17.51	17.51
SPP South - Energy Price - 1H2023	6133	10/16/2039	10/16/2039	17.51	17.51	17.51	17.51	17.51	17.51	22.8	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	23.37	23.37	21.5	23.19	19.04	20.01
SPP South - Energy Price - 1H2023	6134	10/17/2039	10/17/2039	20.67	20.51	20.12	20.34	20.67	20.67	24.22	21.52	21.52	21.52	21.52	21.52	21.52	21.52	21.52	21.52	21.52	24.22	24.22	24.22	24.22	24.22	20.67	20.31
SPP South - Energy Price - 1H2023	6135	10/18/2039	10/18/2039	20.31	20.31	20.31	20.31	20.31	20.31	22.09	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	18.28	18.28
SPP South - Energy Price - 1H2023	6136	10/19/2039	10/19/2039	18.56	18.56	18.56	18.56	18.56	18.56	22.15	22.01	20.25	22.01	20.25	18.66	22.01	20.25	22.01	22.01	22.01	22.01	22.01	22.01	22.01	22.01	18.56	18.56
SPP South - Energy Price - 1H2023	6137	10/20/2039	10/20/2039	18.93	18.93	18.93	18.93	18.93	18.93	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	18.93	18.93
SPP South - Energy Price - 1H2023	6138	10/21/2039	10/21/2039	18.66	18.66	18.66	18.66	18.66	18.66	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	20.15	19.94
SPP South - Energy Price - 1H2023	6139	10/22/2039	10/22/2039	18.87	20.51	18.66	19.53	18.66	19.66	22.35	22.35	22.35	22.35	22.35	22.35	22.35	22.35	22.35	22.35	22.35	25.56	25.54	24.68	24.68	24.68	20.6	18.66
SPP South - Energy Price - 1H2023	6140	10/23/2039	10/23/2039	18.66	19.75	18.66	18.66	18.66	18.66	22.35	22.35	22.28	22.35	5.19	5.78	5.37	5.37	5.52	8.76	22.35	25.56	25.54	25.59	25.59	25.59	19.66	20.51
SPP South - Energy Price - 1H2023	6141	10/24/2039	10/24/2039	19.7	19.65	19.77	19.65	19.7	21.42	24.09	23.42	22.16	22.16	22.16	22.16	22.16	22.16	22.16	22.28	24.98	26.84	26.97	26.24	24.98	24.98	20.74	19.3

SPP South - Energy Price - 1H2023	6142	10/25/2039	10/25/2039	19.3	19.3	19.3	19.3	19.3	19.3	22.76	22.76	8.43	6.94	4.26	4.75	5.53	6.27	6.94	7.2	22.76	22.76	22.76	22.76	22.76	22.76	19.3	19.3
SPP South - Energy Price - 1H2023	6143	10/26/2039	10/26/2039	19.03	19.03	19.03	19.03	19.03	19.03	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	22.49	19.03	19.03
SPP South - Energy Price - 1H2023	6144	10/27/2039	10/27/2039	18.17	18.17	18.17	18.17	18.17	18.17	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	18.17	18.17
SPP South - Energy Price - 1H2023	6145	10/28/2039	10/28/2039	17.55	17.55	17.55	17.55	17.55	17.55	20.99	20.99	20.99	22.33	22.65	21.55	22.26	21.53	23.33	23.33	23.33	23.33	23.33	23.33	23.33	20.99	17.55	17.55
SPP South - Energy Price - 1H2023	6146	10/29/2039	10/29/2039	17.82	17.55	17.55	17.55	18.11	17.55	22.85	21.44	22.85	21.02	21.69	21.56	21.02	21.02	21.69	22.1	21.85	22.85	22.85	22.85	22.01	21.02	17.55	17.55
SPP South - Energy Price - 1H2023	6147	10/30/2039	10/30/2039	17.55	17.55	17.55	17.55	17.55	17.55	21.02	21.02	5.44	4.02	4.02	4.02	3.35	3.35	4.02	4.28	4.71	21.02	21.02	21.02	21.02	21.02	17.55	17.55
SPP South - Energy Price - 1H2023	6148	10/31/2039	10/31/2039	19.54	19.54	19.54	19.54	19.54	19.54	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	19.54	19.54
SPP South - Energy Price - 1H2023	6149	11/1/2039	11/1/2039	19.61	19.61	19.61	19.61	19.61	19.61	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	25.17	19.61	19.61
SPP South - Energy Price - 1H2023	6150	11/2/2039	11/2/2039	18.5	18.5	18.5	18.5	18.5	18.5	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	18.5	18.5
SPP South - Energy Price - 1H2023	6151	11/3/2039	11/3/2039	19.52	19.52	19.52	19.52	19.52	19.52	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	19.52	19.55
SPP South - Energy Price - 1H2023	6152	11/4/2039	11/4/2039	19.75	19.75	19.75	19.75	19.75	19.75	25.33	25.33	25.32	21.93	21.93	21.93	12.72	12.72	21.93	25.32	25.32	25.33	25.33	25.33	25.33	25.33	19.75	19.75
SPP South - Energy Price - 1H2023	6153	11/5/2039	11/5/2039	19.75	19.75	19.75	19.75	19.75	19.75	29.41	29.41	29.41	27.05	27.03	27.05	27.05	27.05	27.05	29.41	29.41	29.41	29.41	29.41	29.41	29.41	19.75	19.75
SPP South - Energy Price - 1H2023	6154	11/6/2039	11/6/2039	19.75	19.75	19.75	19.75	19.75	19.75	29.41	29.41	29.41	8.6	9.34	8.6	8.6	7.18	6.23	6.1	29.41	29.41	29.41	29.41	29.41	29.41	19.75	19.75
SPP South - Energy Price - 1H2023	6155	11/7/2039	11/7/2039	19.88	19.88	19.88	19.88	19.88	19.88	26.66	22.07	5.79	5.37	4.59	4.27	4.27	4.59	4.59	4.55	5	26.66	26.66	26.66	26.66	26.66	19.88	19.88
SPP South - Energy Price - 1H2023	6156	11/8/2039	11/8/2039	22.99	22.99	22.99	22.99	22.99	22.99	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.23	32.27	30.19	30.19	22.99	22.99
SPP South - Energy Price - 1H2023	6157	11/9/2039	11/9/2039	24.03	24.03	24.03	24.03	24.03	24.23	34.31	34.81	34.81	33.72	33.72	33.72	31.02	31.02	31.02	31.02	31.02	34.81	34.81	34.81	33.15	33.88	26.46	26.46
SPP South - Energy Price - 1H2023	6158	11/10/2039	11/10/2039	26.2	25.48	25.49	25.49	25.49	25.49	30.76	30.76	30.76	30.76	28.3	28.3	26.44	28.3	28.3	28.3	30.76	30.76	30.76	30.76	30.76	30.76	23.48	23.48
SPP South - Energy Price - 1H2023	6159	11/11/2039	11/11/2039	20.8	20.8	20.8	20.8	20.8	20.8	27.71	27.71	27.71	18.41	13.18	9.02	8.81	13.18	13.17	27.71	27.71	27.71	27.71	27.71	27.71	27.71	20.8	20.8
SPP South - Energy Price - 1H2023	6160	11/12/2039	11/12/2039	20.8	20.8	20.8	20.8	20.8	20.8	30.97	30.97	30.97	23.77	23.77	23.77	5.73	23.77	6.23	23.77	27.27	28.77	30.97	28.77	29.61	28.77	18.69	6.06
SPP South - Energy Price - 1H2023	6161	11/13/2039	11/13/2039	6.06	6.06	6.06	6.06	6.06	6.06	9.02	9.02	7.76	11.86	11.86	10.91	11.86	10.91	6.23	30.97	30.97	30.97	30.97	30.97	30.97	30.97	20.8	20.8
SPP South - Energy Price - 1H2023	6162	11/14/2039	11/14/2039	19.04	19.04	19.04	19.04	20.45	20.11	28.16	28.16	27.25	25.91	24.82	28.16	25.91	28.16	28.16	28.16	28.16	28.4	28.16	28.16	28.16	28.16	19.23	21.15
SPP South - Energy Price - 1H2023	6163	11/15/2039	11/15/2039	21.67	24.01	24.01	23.33	24.69	24.69	32.19	32.44	32.03	31.06	31.06	31.06	31.06	31.06	31.06	31.06	32.03	32.44	32.19	32.19	32.19	32.03	24.68	24.69
SPP South - Energy Price - 1H2023	6164	11/16/2039	11/16/2039	25.35	25.35	25.35	25.35	25.35	25.35	33.55	34.01	33.55	33.23	32.42	32.42	32.42	33.55	32.42	32.42	34.01	36.66	37.24	36.31	35.83	35.25	27.65	26.07
SPP South - Energy Price - 1H2023	6165	11/17/2039	11/17/2039	25.39	25.39	24.94	24.94	25.39	25.39	32.47	32	32	32	29.44	29.44	28.19	29.44	29.44	32	32	32.22	33.08	33.08	32.94	32.36	25.52	25.65
SPP South - Energy Price - 1H2023	6166	11/18/2039	11/18/2039	25.29	24.8	24.8	25.65	25.65	25.82	32.57	38.17	32.57	32.16	32.16	31.18	31.18	31.18	31.18	31.18	32.16	35.99	32.57	32.57	32.57	32.16	24.12	24.8
SPP South - Energy Price - 1H2023	6167	11/19/2039	11/19/2039	24.8	24.8	24.8	25.89	26.89	26.9	40.14	40.14	35.92	35.92	34.38	34.38	33.77	33.61	34.38	34.38	36.93	42.94	39.52	39.52	39.52	39.52	26.54	26.54
SPP South - Energy Price - 1H2023	6168	11/20/2039	11/20/2039	25.29	26.54	26.54	25.89	24.8	24.8	36.93	36.93	36.93	36.93	36.55	35.92	32.25	14.42	32.25	32.25	32.95	36.93	36.91	35.92	35.92	35.92	24.12	24.8
SPP South - Energy Price - 1H2023	6169	11/21/2039	11/21/2039	27.6	25.39	27.6	27.6	28.39	28.87	37.56	36.73	36.65	39.27	38.56	36.98	36.12	37.02	37.75	36.83	43.88	45.95	46.92	44.93	43.88	43.86	33.93	31.89
SPP South - Energy Price - 1H2023	6170	11/22/2039	11/22/2039	31.87	30.24	31.35	28.88	31.89	34.3	43.49	44.15	42.39	42.24	41.02	39.13	39.13	39.13	39.69	39.14	40.03	42.54	42.54	42.54	43.07	43.05	33.24	28.56
SPP South - Energy Price - 1H2023	6171	11/23/2039	11/23/2039	28.56	28.56	28.56	28.56	28.56	28.56	35.53	42.82	42.6	40.95	40.95	38.68	37.67	37.67	38.37	37.77	39.61	40.95	42.2	41.25	39.68	40.5	29.62	29.98
SPP South - Energy Price - 1H2023	6172	11/24/2039	11/24/2039	28.01	28.01	28.01	28.01	28.01	28.01	35.03	35.03	33.74	33.73	33.73	31.09	33.06	31.09	31.09	33.34	33.74	33.74	33.8	33.8	33.74	33.8	26.65	27.41
SPP South - Energy Price - 1H2023	6173	11/25/2039	11/25/2039	24.16	24.16	24.16	21.69	21.69	21.69	31.21	31.21	14.91	6.02	5.56	5.1	4.86	4.69	4.86	4.73	4.36	31.21	31.21	31.21	31.21	31.21	21.69	21.69
SPP South - Energy Price - 1H2023	6174	11/26/2039	11/26/2039	21.69	21.69	21.69	21.69	21.69	21.69	32.3	32.3	32.29	32.29	32.29	32.29	32.29	32.3	32.3	32.29	32.29	33.08	35.97	34.28	34.38	32.3	21.69	21.69
SPP South - Energy Price - 1H2023	6175	11/27/2039	11/27/2039	23.2	23.58	23.58	21.69	21.69	21.69	34.23	34.65	32.3	32.29	32.29	32.29	32.29	32.29	32.29	30.08	32.3	35.1	35.1	35.1	35.1	34.42	24.16	23.39
SPP South - Energy Price - 1H2023	6176	11/28/2039	11/28/2039	21.69	21.69	21.68	21.68	21.69	21.69	28.71	30.42	28.71	28.71	28.71	28.71	28.71	28.71	28.71	28.71	28.71	30.45	28.73	28.71	28.71	28.71	23.15	24.15
SPP South - Energy Price - 1H2023	6177	11/29/2039	11/29/2039	22.72	21.75	21.75	21.75	21.75	22.72	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.79	28.81	28.79	28.79	29.05	21.75	23.06
SPP South - Energy Price - 1H2023	6178	11/30/2039	11/30/2039	22.72	23.06	23.06	23.06	23.06	23.06	29.46	31.56	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	29.22	31.56	31.56	31.56	32.22	32.31	24.66	24.66
SPP South - Energy Price - 1H2023	6179	12/1/2039	12/1/2039	43.32	43.32	43.32	43.32	43.32	43.32	41.62	41.62	38.29	38.29	38.29	38.29	38.29	38.29	38.29	38.6	42.14	42.9	42.9	42.9	42.9	43.43	47.3	45.52
SPP South - Energy Price - 1H2023	6180	12/2/2039	12/2/2039	47.3	47.3	47.3	47.3	43.01	42.57	42.1	41.95	44.82	41.24	41.24	41.24	41.24	41.24	41.24	41.24	46.25	46.89	48.45	46.89	46.89	46.89	48.64	48.64
SPP South - Energy Price - 1H2023	6181	12/3/2039	12/3/2039	48.64	48.64	48.64	48.64	48.64	48.64	54.49	59.22	52.98	52.65	47.52	47.52	48.37	47.52	48.37	48.37	48.37	53.99	52.98	52.98	52.98	52.98	47.3	47.3
SPP South - Energy Price - 1H2023	6182	12/4/2039	12/4/2039	42.43	42.43	42.43	42.43	42.43	42.43	47.52	47.52	47.52	47.52	47.52	47.52	47.52	47.52	47.52	47.52	47.52	50.36	50.64	47.52	47.52	47.52	42.43	42.43
SPP South - Energy Price - 1H2023	6183	12/5/2039	12/5/2039	46.28	46.28	46.28	46.28	46.28	46.28	42.79	42.79	42.79	39.36	42.79	39.36	42.79	42.79	42.79	42.79	42.79	49.94	50.68	49.94	49.94	49.94	50.18	49.57
SPP South - Energy Price - 1H2023	6184	12/6/2039	12/6/2039	49.9	49.23	50.43	50.18	50.18	50.18	47.57	50.54	46.46	45.74	45.34	45.1	43.32	43.32	43.32	43.32	43.32	45.74	45.74	43.32	45.74	45.7	50.39	49.15
SPP South - Energy Price - 1H2023	6185	12/7/2039	12/7/2039	48.16	50.35	50.43	48.16	49.58	50.78	48.42	50.05	49.1	44.54	46.1	44.66	44.54	44.36	44.54	44.54	44.54	47.92	50.07	50.2	49.2	48.88	53.09	50.67
SPP South - Energy Price - 1H2023	6186	12/8/2039	12/8/2039	53.09	53.38	53.45	54.03	53.51	51.99	47.32	47.32	47.32	47.32	46.09	46.09	46.09	46.09	46.09	46.09	46.09	47.77	47.68	46.09	46.09	46.09	50.24	50.24
SPP South - Energy Price - 1H2023	6187	12/9/2039	12/9/2039	45.83	45.83	45.83	45.83	45.83	45.83	42.41	42.41	42.41	42.41	42.41	42.41	40.54	39.01	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	45.83	45.83
SPP South - Energy Price - 1H2023	6188	12/10/2039	12/10/2039	45.83	45.83	45.83	45.83	45.83	45.83	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	45.83	45.83
SPP South - Energy Price - 1H2023	6189	12/11/2039	12/11/2039	45.83	45.83	45.83	45.83	45.83	45.83	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	51.33	45.83	45.83
SPP South - Energy Price - 1H2023	6190	12/12/2039	12/12/2039	45.49	45.49	45.49	45.49	45.49	45.49	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	38.75	42.13	42.13	42.13	42.13	42.13	42.13	42.13	45.49	45.49
SPP South - Energy Price - 1H2023	6191	12/13/2039	12/13/2039	44.52	44.52	44.52	44.52	44.52	44.52	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	41.32	44.52	44.52
SPP South - Energy Price - 1H2023	6192	12/14/2039	12/14/2039	43.53	43.53	43.53	43.53	43.53	43.53	40.49	40.49	40.49	40.49	40.49	40.49	40.49	40.49	40.49	40.49	40.49	40.49	43.37	42.94	42.5	40.49	47.01	43.53
SPP South - Energy Price - 1H2023	6193	12/15/2039	12/15/2039	41.46	41.46	41.46	41.46	41.46	41.46	38.76	38.76	38.76	38.76	35.66	35.66	38.76	35.66	38.76	38.76	38.76	38.76	38.76	38.76	38.76	38.76	41.46	41.46
SPP South - Energy Price - 1H2023	6194	12/16/2039	12/16/2039	37.97	37.97	37.97	37.97	37.97	37.97	35.85	37.22	36.36	35.85	35.85	35.85	35.85	35.85	35.85	35.85	35.85	41.49	40.03	41.99	40.03	40.03	42.23	41.25
SPP South - Energy Price - 1H2023	6195	12/17/2039	12/17/2039	41.75	39.56	39.56	39.56	39.56	40.59	45.99	47.31	46.76	47.31	45.3	44.32	44.32	44.32	45.14	44.45	47.31	48.17	48.17	48.17	48.16	47.31	41.44	41.25
SPP South - Energy Price - 1H2023	6196	12/18/2039	12/18/2039	40.96	38.77	38.77	38.54	38.77	37.97	43.43	43.43	46.76	47.2	45.3	44.97	43.43	43.43	43.43	43.43	43.54	47.31	47.31	47.31	48.62	47.31	42.23	42.23
SPP South - Energy Price - 1H2023	6197	12/19/2039	12/19/2039	42.71	43.67	43.71	43.4	42.99	42.35	39.78	43.24	40.14	36.93	36.93	36.93	36.93	36.93	36.93	36.93	36.93	40.14	40.14	40.14	40.32	41.9	43.71	42.83
SPP South - Energy Price - 1H2023	6198	12/20/2039	12/20/2039	39.62	39.62	39.62	39.62	39.62	39.62	37.22	37.22	37.22	37.22	35.46	34.24	6.72	6.48	34.24	35.46	37.22	37.22	37.22	37.22	37.22	37.22	39.62	39.62
SPP South - Energy Price - 1H2023	6199	12/21/2039	12/21/2039	36.19	36.19	36.19	36.19	36.19	36.19	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	34.36	38.55	36.19
SPP South - Energy Price - 1H2023	6200	12/22/2039	12/22/2039	39.31	39.31	39.31	39.31	39.31	39.31	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	39.31	39.31
SPP South - Energy Price - 1H2023	6201	12/23/2039	12/23/2039	39.12	39.12	39.12	39.12	39.12	39.12	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	39.12	39.12
SPP South - Energy Price - 1H2023	6202	12/24/2039	12/24/2039	39.12	39.12	39.12	39.12	39.12	41.74	47.29	47.42	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	39.12	39.12
SPP South - Energy Price - 1H2023	6203	12/25/2039	12/25/2039	39.12	39.12	39.12	39.12	39.12	39.12	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	43.82	45.26	47.64	47.64	47.64	47.64	42.53	42.53
SPP South - Energy Price - 1H2023	6204	12/26/2039	12/26/2039	39.12	39.12	39.12	39.12	39.12	39.12	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	36.81	39.26	39.12
SPP South - Energy Price - 1H2023	6205	12/27/2039	12/27/2039	41.1	41.1	41.1	41.1	41.1	41.1	38.46	38.46	39.24	39.01	38.46	38.46	38.46	38.46	38.46	38.46	38.46	38.46	38.46	38.46	38.46	38.46	41.1	41.1
SPP South - Energy Price - 1H2023	6206	12/28/2039	12/28/2039	35.41	35.41	35.41	35.41	35.41	35.41	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	33.71	35.41	35.41
SPP South - Energy Price - 1H2023	6207	12/29/2039	12/29/2039	45.18	45.18	45.18	45.18	45.18	45.18	41.87	41.87	41.87	41.87	41.87	41.87	41.87	41.87	41.87	41.87	41.87	43.85	43.6	43.29	41.87	41.87	45.18	45.18
SPP South - Energy Price - 1H2023	6208	12/30/2039	12/30/2039	43.71	43.71	43.71	43.71	43.71	43.71	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	40.64	43.71	43.71
SPP South - Energy Price - 1H2023	6209	12/31/2039	12/31/2039	43.71	43.71	43.71	43.71	43.71	43.71	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	48.96	43.71	43.71
SPP South - Energy Price - 1H2023	6210	1/1/2040	1/1/2040	40.17	40.17	40.17	40.17	40.17	40.17	47.12	47.12	47.12	47.12	47.12	47.12	47.12	43.35	47.12	47.12	43.35	47.12	47.12	47.12	47.12	47.12	40.17	40.17
SPP South - Energy Price - 1H2023	6211	1/2/2040	1/2/2040	40.17	40.17	40.17	40.17	40.17	40.17	47.41	47.41	47.41	47.4	47.4	42.29	24.17	18.21	6.68	18.21	18.72	47.4	47.41	47.41	47.41	47.41	40.17	40.17
SPP South - Energy Price - 1H2023	6212	1/3/2040	1/3/2040	37.84	37.84	37.84	37.84	37.84	37.84	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	44.93	37.84	37.84
SPP South - Energy Price - 1H2023	6213	1/4/2040	1/4/2040	36.87	36.87	36.87	36.87	36.87	36.87	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	36.87	36.87
SPP South - Energy Price - 1H2023	6214	1/5/2040	1/5/2040	36.57	36.57	36.57	36.57	36.57	36.57	43.59	43.59	43.59	43.59	43.59	43.59	43.58	43.58	43.58	43.59	43.59	43.59	44.36	44.19	43.59	43.59	36.57	36.57
SPP South - Energy Price - 1H2023	6215	1/6/2040	1/6/2040	33.85	33.85	33.85	33.85	33.85	33.85	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	33.85	33.85
SPP South - Energy Price - 1H2023	6216	1/7/2040	1/7/2040	33.85	33.85	33.85	33.85	33.85	33.85	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	42.55	42.36	39.7	39.7	33.85	33.85
SPP South - Energy Price - 1H2023	6217	1/8/2040	1/8/2040	33.85	33.85	33.85	33.85	33.85	33.85	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	33.85	33.85
SPP South - Energy Price - 1H2023	6218	1/9/2040	1/9/2040	38.28	38.28	38.28	38.28	38.28	38.28	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	47.16	51.01	52.88	47.61	45.62	41.69	41.69
SPP South - Energy Price - 1H2023	6219	1/10/2040	1/10/2040	41.69	41.69	41.69	41.69	41.59	41.93	51.91	51.91	51.91	51.91	51.91	51.25	51.91	51.87	51.91	52.18	51.91	48.91	48.91	48.91	48.91	48.91	41.59	41.59
SPP South - Energy Price - 1H2023	6220	1/11/2040	1/11/2040	40.48	40.48	40.48	40.48	40.48	40.48	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	47.73	40.48	40.48
SPP South - Energy Price - 1H2023	6221	1/12/2040	1/12/2040	38.58	38.58	38.58	38.58	38.58	38.58	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	38.58	38.58
SPP South - Energy Price - 1H2023	6222	1/13/2040	1/13/2040	40.19	40.19	40.19	40.19	40.19	40.19	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	47.43	40.19	40.19
SPP South - Energy Price - 1H2023	6223	1/14/2040	1/14/2040	40.19	40.19	40.19	40.19	40.19	40.19	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	40.19	40.19
SPP South - Energy Price - 1H2023	6224	1/15/2040	1/15/2040	40.19	40.19	40.19	40.19	40.19	40.19	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	40.19	40.19

SPP South - Energy Price - 1H2023	6225	1/16/2040	1/16/2040	40	40	40	40	40	40	47.23	47.23	47.23	47.23	47.23	47.22	47.22	47.22	43.45	47.22	47.22	47.22	47.23	47.23	47.23	47.23	40	40
SPP South - Energy Price - 1H2023	6226	1/17/2040	1/17/2040	46.17	46.17	46.17	46.17	46.17	46.17	53.77	53.77	53.77	53.77	53.77	53.76	53.76	53.76	53.76	53.76	53.77	53.77	53.77	53.77	53.77	53.77	46.17	46.17
SPP South - Energy Price - 1H2023	6227	1/18/2040	1/18/2040	48.52	48.52	48.52	48.52	48.52	48.52	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	56.25	48.52	48.52
SPP South - Energy Price - 1H2023	6228	1/19/2040	1/19/2040	43.48	43.48	43.48	43.48	43.48	43.48	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	50.91	43.48	43.48
SPP South - Energy Price - 1H2023	6229	1/20/2040	1/20/2040	43.16	43.16	43.16	43.16	43.16	43.16	50.58	50.58	45.12	9.26	9.26	8.29	7.58	7.08	9.26	9.26	45.12	50.58	50.58	50.58	50.58	50.58	43.16	43.16
SPP South - Energy Price - 1H2023	6230	1/21/2040	1/21/2040	43.16	43.16	43.16	43.16	43.16	43.16	50.63	50.63	50.63	50.63	20.91	20.91	20.23	17.73	20.91	18.33	50.63	50.63	50.63	50.63	50.63	50.63	43.16	43.16
SPP South - Energy Price - 1H2023	6231	1/22/2040	1/22/2040	43.16	43.16	43.16	43.16	43.16	43.16	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	50.63	43.16	43.16
SPP South - Energy Price - 1H2023	6232	1/23/2040	1/23/2040	37.04	37.04	37.04	37.04	37.04	37.04	43.93	43.93	43.93	43.93	43.93	43.93	43.93	40.42	43.93	43.93	43.93	43.93	43.93	43.93	43.93	43.93	37.04	37.04
SPP South - Energy Price - 1H2023	6233	1/24/2040	1/24/2040	36.21	36.21	36.21	36.21	36.21	36.21	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	36.21	36.21
SPP South - Energy Price - 1H2023	6234	1/25/2040	1/25/2040	36.06	36.06	36.06	36.06	36.06	36.06	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	45.42	40.17	40.15
SPP South - Energy Price - 1H2023	6235	1/26/2040	1/26/2040	41.99	40.15	41.41	41.36	41.04	41.32	49.46	52.14	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	48.51	48.51	48.51	48.51	42.88	41.99
SPP South - Energy Price - 1H2023	6236	1/27/2040	1/27/2040	42.88	42.88	42.88	42.88	42.88	43.1	50.12	50.12	50.12	50.12	50.12	50.12	50.12	50.12	50.12	46.11	50.12	50.12	50.12	50.12	50.12	50.12	42.88	42.88
SPP South - Energy Price - 1H2023	6237	1/28/2040	1/28/2040	42.88	42.88	42.88	42.88	42.88	42.88	50.3	50.3	50.3	50.3	23.69	23.69	17.88	22.29	23.44	23.32	23.69	50.3	50.3	50.3	50.3	50.3	42.88	42.88
SPP South - Energy Price - 1H2023	6238	1/29/2040	1/29/2040	42.88	42.88	42.88	42.88	42.88	42.88	50.3	50.56	52.55	50.56	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	42.88	42.88
SPP South - Energy Price - 1H2023	6239	1/30/2040	1/30/2040	37.94	37.94	37.94	37.94	37.94	37.94	44.88	44.88	44.88	44.88	42.91	39.48	39.48	39.48	16.06	6.23	39.48	44.88	44.88	44.88	44.88	44.88	37.93	37.93
SPP South - Energy Price - 1H2023	6240	1/31/2040	1/31/2040	37.23	37.23	37.23	37.23	37.23	37.23	44.14	44.14	44.14	44.14	44.13	44.14	44.13	44.13	44.13	44.13	44.13	44.14	44.14	44.14	44.14	44.14	37.23	37.23
SPP South - Energy Price - 1H2023	6241	2/1/2040	2/1/2040	23.41	23.41	23.41	23.41	23.41	23.41	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	23.41	23.41
SPP South - Energy Price - 1H2023	6242	2/2/2040	2/2/2040	23.41	23.41	23.41	23.41	23.41	23.41	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	30.51	23.41	23.41
SPP South - Energy Price - 1H2023	6243	2/3/2040	2/3/2040	24.43	24.43	24.43	24.43	24.43	24.43	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	24.72	24.43
SPP South - Energy Price - 1H2023	6244	2/4/2040	2/4/2040	24.43	24.43	24.43	24.43	24.43	24.43	30.13	30.13	30.13	30.13	27.72	27.72	27.72	27.72	27.72	13.44	11.3	30.13	30.13	30.13	30.13	30.13	24.43	24.43
SPP South - Energy Price - 1H2023	6245	2/5/2040	2/5/2040	24.43	24.43	24.43	24.43	24.43	24.43	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	30.13	24.43	24.43
SPP South - Energy Price - 1H2023	6246	2/6/2040	2/6/2040	22.91	22.91	22.91	22.91	22.91	22.91	29.92	29.92	29.92	29.92	29.92	29.92	27.53	26.79	13.9	27.53	29.92	29.92	29.92	29.92	29.92	29.92	22.91	22.91
SPP South - Energy Price - 1H2023	6247	2/7/2040	2/7/2040	22.68	22.68	22.68	22.68	22.68	22.68	29.66	29.66	29.66	29.66	29.66	29.66	27.28	10.37	10.29	26.55	27.28	29.66	29.66	29.66	29.66	29.66	22.68	22.68
SPP South - Energy Price - 1H2023	6248	2/8/2040	2/8/2040	23.32	23.32	23.32	23.32	23.32	23.32	30.4	30.4	30.4	5.29	0.82	0.82	0.82	0.8	0.76	0.87	0.82	3.72	30.4	30.4	30.4	30.4	23.32	23.32
SPP South - Energy Price - 1H2023	6249	2/9/2040	2/9/2040	22.98	22.98	22.98	22.98	22.98	22.98	30.01	30.01	30.01	30.01	30.01	30.01	29.89	27.61	23.44	26.86	27.61	30.01	30.01	30.01	30.01	30.01	22.98	22.98
SPP South - Energy Price - 1H2023	6250	2/10/2040	2/10/2040	22.23	22.23	22.23	22.23	22.23	22.23	30.33	30.33	30.33	30.33	30.33	30.33	27.9	4.23	27.9	4.19	27.9	30.33	30.33	30.33	30.33	30.33	22.23	22.23
SPP South - Energy Price - 1H2023	6251	2/11/2040	2/11/2040	22.23	22.23	22.23	22.23	22.23	22.23	27.41	29.8	27.41	27.41	27.41	27.41	27.41	25.22	25.22	9.72	24.54	27.41	27.41	27.41	27.41	27.41	22.23	22.23
SPP South - Energy Price - 1H2023	6252	2/12/2040	2/12/2040	22.23	22.23	22.23	22.23	22.23	22.23	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.41	27.61	28.14	27.7	22.38	22.23
SPP South - Energy Price - 1H2023	6253	2/13/2040	2/13/2040	26.53	26.53	26.53	26.53	26.53	26.53	35.39	35.39	35.5	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	35.39	26.53	26.53
SPP South - Energy Price - 1H2023	6254	2/14/2040	2/14/2040	26.48	26.48	26.48	26.48	26.48	26.48	35.33	35.33	35.33	35.33	35.33	32.5	32.5	35.33	30.51	32.5	33.88	35.33	35.33	35.33	35.33	35.33	26.48	26.48
SPP South - Energy Price - 1H2023	6255	2/15/2040	2/15/2040	34.73	34.73	34.73	34.73	34.73	34.73	45.03	45.03	39.12	20.96	22.78	4.38	4.38	4.23	4.19	4.19	4.38	45.03	45.03	45.03	45.03	45.03	34.73	34.73
SPP South - Energy Price - 1H2023	6256	2/16/2040	2/16/2040	27.89	27.89	27.89	27.89	27.89	27.89	36.98	36.98	34.79	34.79	30.97	7.07	21.84	4.23	25.98	27.65	27.65	36.98	36.98	36.98	36.98	36.98	27.98	27.89
SPP South - Energy Price - 1H2023	6257	2/17/2040	2/17/2040	26.26	26.26	25.96	26.26	26.26	26.26	34.77	34.54	34.54	34.54	14.92	12.07	12.07	4.23	12.07	12.07	14.92	34.54	34.54	34.54	34.54	34.54	25.81	25.81
SPP South - Energy Price - 1H2023	6258	2/18/2040	2/18/2040	25.81	25.81	25.81	25.81	25.81	25.81	31.83	31.83	31.84	31.83	31.83	31.83	31.83	29.64	31.83	31.83	31.83	31.83	31.83	32.19	32.22	31.83	25.81	25.81
SPP South - Energy Price - 1H2023	6259	2/19/2040	2/19/2040	25.81	25.81	25.81	25.81	25.81	25.81	31.83	31.83	31.83	31.83	31.83	31.83	31.83	6.22	10.74	14.79	11.03	31.83	31.83	31.83	31.83	31.83	25.81	25.81
SPP South - Energy Price - 1H2023	6260	2/20/2040	2/20/2040	23.54	23.54	23.54	23.54	23.54	23.54	33.74	35.83	31.88	31.88	31.88	31.88	31.88	31.88	31.88	31.88	31.88	33.74	35.83	35.83	33.74	33.25	26.26	26.26
SPP South - Energy Price - 1H2023	6261	2/21/2040	2/21/2040	26.87	26.87	26.87	26.87	26.87	27.79	34.06	37.69	33.52	33.52	33.52	30.83	33.52	31.15	30.83	30.83	33.52	33.52	33.52	33.52	33.52	33.52	24.94	24.94
SPP South - Energy Price - 1H2023	6262	2/22/2040	2/22/2040	23.21	23.21	23.21	23.21	23.21	23.21	31.49	31.49	31.49	28.96	5.02	5.02	4.49	4.71	4.83	5.02	5.02	31.49	31.49	31.49	31.49	31.49	23.21	23.21
SPP South - Energy Price - 1H2023	6263	2/23/2040	2/23/2040	24.33	24.33	24.33	24.33	24.33	24.33	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	33.46	33.92	33.2	26.29	26.29
SPP South - Energy Price - 1H2023	6264	2/24/2040	2/24/2040	26.29	26.29	26.29	26.29	26.29	26.29	35.08	36.15	34.06	33.9	33.81	33.8	32.09	32.09	32.09	32.09	32.09	33.35	33.92	33.9	32.09	32.09	23.73	23.73
SPP South - Energy Price - 1H2023	6265	2/25/2040	2/25/2040	23.73	23.73	23.73	23.73	23.73	23.73	29.26	29.26	5.37	5.21	4.7	4.72	4.83	4.83	4.83	4.83	4.83	5.1	29.26	29.26	29.26	29.26	23.73	23.73
SPP South - Energy Price - 1H2023	6266	2/26/2040	2/26/2040	23.73	23.73	23.73	23.73	23.73	23.73	29.26	29.26	29.26	5.21	4.7	4.72	4.83	5.06	5.19	5.4	5.29	5.19	29.26	29.26	29.26	29.26	23.73	23.73
SPP South - Energy Price - 1H2023	6267	2/27/2040	2/27/2040	25.2	25.2	25.2	25.2	25.2	25.2	28.92	28.92	5	4.85	24.6	26.73	24.6	27.31	24.6	6.04	4.92	32.74	33.83	33.83	33.83	33.83	25.2	25.2
SPP South - Energy Price - 1H2023	6268	2/28/2040	2/28/2040	25.4	25.4	25.4	25.4	25.4	25.4	34.06	34.06	34.06	29.38	4.37	4.39	4.49	4.71	4.83	5.02	4.92	4.83	34.06	34.06	34.06	34.06	25.4	25.4
SPP South - Energy Price - 1H2023	6269	2/29/2040	2/29/2040	25.37	25.37	25.37	25.37	25.37	25.37	34.38	35.65	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	34.03	35.99	35.65	35.32	34.94	28.34	26.74
SPP South - Energy Price - 1H2023	6270	3/1/2040	3/1/2040	21.39	21.39	21.39	21.39	21.39	21.39	23.92	24.17	23.92	23.92	23.92	23.92	23.92	23.92	23.92	3.09	22.01	23.92	23.92	24.41	24.16	23.93	21.39	21.39
SPP South - Energy Price - 1H2023	6271	3/2/2040	3/2/2040	17.54	17.54	17.54	17.54	17.54	17.54	19.33	19.33	19.33	19.33	19.33	19.12	19.33	15.99	2.97	15.97	17.79	19.33	19.33	19.33	19.33	19.33	17.54	17.54
SPP South - Energy Price - 1H2023	6272	3/3/2040	3/3/2040	17.54	17.54	17.54	17.54	17.54	17.54	20.68	20.68	19.11	19.02	18.32	4.28	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	20.68	17.54	17.54
SPP South - Energy Price - 1H2023	6273	3/4/2040	3/4/2040	17.54	17.54	17.54	17.54	17.54	17.54	20.68	20.68	20.68	20.68	20.68	20.68	20.68	19.89	19.28	20.68	20.68	20.68	20.68	20.68	20.68	20.68	17.54	17.54
SPP South - Energy Price - 1H2023	6274	3/5/2040	3/5/2040	16.35	16.35	16.35	16.35	16.35	16.35	18.15	18.15	18.15	17.31	16.25	15.92	2.77	15.92	15.92	15.92	15.92	16.25	18.15	18.15	18.15	18.15	16.35	16.35
SPP South - Energy Price - 1H2023	6275	3/6/2040	3/6/2040	16.91	16.91	16.91	16.91	16.91	16.91	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	18.71	16.91	16.91
SPP South - Energy Price - 1H2023	6276	3/7/2040	3/7/2040	17.29	17.29	17.29	17.29	17.29	17.29	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	17.29	17.29
SPP South - Energy Price - 1H2023	6277	3/8/2040	3/8/2040	18.09	18.09	18.09	18.09	18.09	18.27	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	19.88	18.09	18.09
SPP South - Energy Price - 1H2023	6278	3/9/2040	3/9/2040	17.09	17.09	17.09	17.09	17.09	17.09	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	18.89	17.09	17.09
SPP South - Energy Price - 1H2023	6279	3/10/2040	3/10/2040	17.09	17.09	17.09	17.09	17.09	17.09	20.15	20.15	20.15	3.61	3.26	3.27	0.57	3.51	3.6	3.74	3.67	20.15	20.15	20.15	20.15	20.15	17.09	17.09
SPP South - Energy Price - 1H2023	6280	3/11/2040	3/11/2040	17.09	17.09	17.09	17.09	17.09	17.09	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	17.09	17.09
SPP South - Energy Price - 1H2023	6281	3/12/2040	3/12/2040	17.99	17.99	17.99	17.99	17.99	17.99	19.78	19.78	19.78	19.78	19.78	19.78	18.19	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	19.78	17.99	17.99
SPP South - Energy Price - 1H2023	6282	3/13/2040	3/13/2040	17.73	17.73	17.73	17.73	17.73	17.73	19.53	19.53	19.53	19.53	19.53	19.53	17.96	17.48	17.96	17.48	17.96	17.96	19.53	19.53	19.53	19.53	17.73	17.73
SPP South - Energy Price - 1H2023	6283	3/14/2040	3/14/2040	17.66	17.66	17.66	17.66	17.66	17.66	19.45	19.45	19.45	2.99	2.99	2.7	2.77	2.9	2.97	3.09	7.37	7.73	19.45	19.45	19.45	19.45	17.66	17.66
SPP South - Energy Price - 1H2023	6284	3/15/2040	3/15/2040	19.75	19.75	19.75	19.75	19.75	19.78	22.42	22.38	23.03	22.76	21.75	21.75	21.53	21.53	21.53	21.53	21.53	21.53	21.75	21.53	21.53	21.53	19.75	19.75
SPP South - Energy Price - 1H2023	6285	3/16/2040	3/16/2040	18.51	18.51	18.51	18.51	18.51	18.51	20.3	19.74	3.08	2.99	2.69	2.7	0.47	12.98	15.33	15.57	18.45	20.3	20.3	20.3	20.3	20.3	18.51	18.51
SPP South - Energy Price - 1H2023	6286	3/17/2040	3/17/2040	18.51	18.51	18.51	18.51	18.51	18.51	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	18.51	18.51
SPP South - Energy Price - 1H2023	6287	3/18/2040	3/18/2040	18.51	18.51	18.51	18.51	18.51	18.51	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	21.83	18.51	18.51
SPP South - Energy Price - 1H2023	6288	3/19/2040	3/19/2040	19.25	19.25	19.25	19.25	19.25	22.14	24.52	22.16	21.93	21.93	21.92	21.93	21.93	21.92	21.93	21.92	21.93	22.33	22.43	22.16	22.16	22.16	20.2	19.53
SPP South - Energy Price - 1H2023	6289	3/20/2040	3/20/2040	19.22	19.42	19.42	19.42	18.37	19.42	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.05	21.14	21.05	21.05	19.42	18.98
SPP South - Energy Price - 1H2023	6290	3/21/2040	3/21/2040	18.98	18.98	18.98	17.94	18.98	18.98	20.69	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	17.42	17.42
SPP South - Energy Price - 1H2023	6291	3/22/2040	3/22/2040	17.04	16.99	17.02	17	17.22	17.22	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	19.07	16.39	16.39
SPP South - Energy Price - 1H2023	6292	3/23/2040	3/23/2040	15.27	15.27	15.27	15.27	15.27	15.27	17.95	17.95	16.17	17.57	17.57	16.17	16.17	17.95	17.95	17.95	17.95	17.95	17.95	19.55	17.95	17.95	16.99	15.27
SPP South - Energy Price - 1H2023	6293	3/24/2040	3/24/2040	15.27	15.27	15.27	15.94	15.91	15.27	19.57	18	18	18	18	18	18	18	18	18	18	18.61	20.04	20.04	19.57	19.57	16.6	15.27
SPP South - Energy Price - 1H2023	6294	3/25/2040	3/25/2040	15.27	15.27	15.27	15.27	15.27	15.27	18	18	18	4.67	0	0	0	0	0	0	0	5.25	18	18	18	18	15.27	15.27
SPP South - Energy Price - 1H2023	6295	3/26/2040	3/26/2040	15.27	14.05	14.05	15.27	15.27	15.7	18.38	13.68	4.01	3.86	4.87	5.7	15.68	15.68	15.68	5.88	18.38	18.38	18.38	18.38	18.38	18.38	16.09	16.79
SPP South - Energy Price - 1H2023	6296	3/27/2040	3/27/2040	16.79	16.79	16.79	16.79	16.79	16.79	19.47	19.47	19.47	19.47	19.47	5.51	16.18	17.91	7.61	17.91	19.47	19.47	19.47	19.47	19.47	19.47	16.79	16.79
SPP South - Energy Price - 1H2023	6297	3/28/2040	3/28/2040	16.98	16.98	16.98	16.98	16.98	16.98	19.65	19.65	19.65	19.65	18.08	18.08	18.32	18.08	18.08	19.65	19.65	19.65	19.65	19.65	19.65	19.65	16.98	16.98
SPP South - Energy Price - 1H2023	6298	3/29/2040	3/29/2040	17.25	17.25	17.25	17.25	17.25	17.25	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	18.33	19.92	19.92	19.92	19.92	19.92	19.92	17.25	17.25
SPP South - Energy Price - 1H2023	6299	3/30/2040	3/30/2040	16.07	16.07	16.07	16.07	16.07	16.07	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	18.74	16.07	16.07
SPP South - Energy Price - 1H2023	6300	3/31/2040	3/31/2040	16.07	16.07	16.07	16.07	16.21	16.07	18.94	18.94	18.94	18.94	18.94	18.94	7.39	4.94	4.94	5.28	7.39	18.94	18.94	18.94	18.94	18.94	16.07	16.07
SPP South - Energy Price - 1H2023	6301	4/1/2040	4/1/2040	4.02	4.02	4.02	4.02	4.02	4.02	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.97	4.97	4.97	4.97	4.08	4.04
SPP South - Energy Price - 1H2023	6302	4/2/2040	4/2/2040	4.47	4.45	4.44	4.45	4.44	4.7	2.47	2.47	2.47	2.47	2.47	2.45	2.47	2.27	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	4.29	4.29
SPP South - Energy Price - 1H2023	6303	4/3/2040	4/3/2040	4.39	4.39	4.39	4.39	4.39	4.39	2.51	2.04	1.25	1.25	1.25	0.44	1.25	1.36	1.25	1.25	1.25	2.5	2.51	2.51	2.51	2.51	4.81	4.52
SPP South - Energy Price - 1H2023	6304	4/4/2040	4/4/2040	4.61	4.61	4.61	4.61	4.76	5.02	2.61	2.61	2.02	2.02	2.02	2.02	2.02	1.84	2.38	2.6	2.39	2.61	2.61	2.61	2.61	2.61	4.61	4.61
SPP South - Energy Price - 1H2023	6305	4/5/2040	4/5/2040	4.47	4.47	4.61	4.49	4.61	4.61	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	4.91	4.82
SPP South - Energy Price - 1H2023	6306	4/6/2040	4/6/2040	4.83	4.85	4.83	4.84	4.96	4.96	2.52	2.52	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	0.57	1.93	2.51	2.51	2.52	2.52	4.4	4.4
SPP South - Energy Price - 1H2023	6307	4/7/2040	4/7/2040	4.4	4.4	4.4	4.4	4.4	4.4	4.97	4.97	0.18	0	0	0	0	0	0	0	1.34	4.97	4.97	5	5	5.34	4.56	4.53

SPP South - Energy Price - 1H2023	6308	4/8/2040	4/8/2040	4.58	4.57	4.4	4.4	4.4	4.4	5.14	4.97	4.97	4.97	4.97	4.97	1.87	4.97	4.97	4.97	4.97	5.45	5.6	5.6	5.6	5.51	4.84	4.82
SPP South - Energy Price - 1H2023	6309	4/9/2040	4/9/2040	4.38	4.38	4.38	4.38	4.38	4.38	2.28	2.28	2.28	2.28	2.28	2.28	1.3	0.9	0.92	2.1	2.1	2.28	2.28	2.28	2.28	2.28	4.38	4.38
SPP South - Energy Price - 1H2023	6310	4/10/2040	4/10/2040	4.44	4.44	4.44	4.44	4.44	4.44	2.31	2.31	2.31	2.31	2.31	2.13	2.13	2.13	2.13	2.13	2.13	2.31	2.31	2.31	2.31	2.31	4.44	4.44
SPP South - Energy Price - 1H2023	6311	4/11/2040	4/11/2040	4.51	4.51	4.51	4.51	4.51	4.51	2.34	2.11	0.46	0.75	0.44	0.82	0.46	0.47	0.75	2.34	2.34	2.34	2.34	2.34	2.34	2.34	4.51	4.51
SPP South - Energy Price - 1H2023	6312	4/12/2040	4/12/2040	4.42	4.42	4.42	4.42	4.42	4.42	2.3	2.1	1.93	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.93	2.3	2.3	2.3	4.42	4.42
SPP South - Energy Price - 1H2023	6313	4/13/2040	4/13/2040	4.42	4.34	4.42	4.42	4.76	4.88	2.47	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	4.74	4.74
SPP South - Energy Price - 1H2023	6314	4/14/2040	4/14/2040	4.34	4.33	4.33	4.33	4.71	4.71	5.32	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.33	4.33
SPP South - Energy Price - 1H2023	6315	4/15/2040	4/15/2040	4.33	4.33	4.33	4.33	4.33	4.33	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.95	5.32	5.35	5.06	5.09	4.89	4.33	4.33
SPP South - Energy Price - 1H2023	6316	4/16/2040	4/16/2040	4.33	4.33	4.33	4.33	4.42	4.41	2.29	2.25	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.3	2.33	2.44	2.44	2.44	4.75	4.68
SPP South - Energy Price - 1H2023	6317	4/17/2040	4/17/2040	4.75	4.75	4.75	4.75	4.75	4.75	2.45	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.27	2.26	4.74	4.67
SPP South - Energy Price - 1H2023	6318	4/18/2040	4/18/2040	4.64	4.64	4.64	4.66	4.77	4.77	2.23	2.41	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	4.23	4.23
SPP South - Energy Price - 1H2023	6319	4/19/2040	4/19/2040	4.2	4.2	4.2	4.2	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.2	4.2
SPP South - Energy Price - 1H2023	6320	4/20/2040	4/20/2040	4.15	4.15	4.15	4.15	4.15	4.21	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	4.15	4.15
SPP South - Energy Price - 1H2023	6321	4/21/2040	4/21/2040	4.15	4.15	4.15	4.15	4.15	4.15	4.69	4.69	4.69	4.69	4.31	4.31	4.31	4.31	4.31	4.31	4.69	4.69	4.69	4.69	4.69	4.69	4.15	4.15
SPP South - Energy Price - 1H2023	6322	4/22/2040	4/22/2040	4.15	4.15	4.15	4.15	4.15	4.15	4.69	4.69	4.69	4.69	1.13	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	5.14	5.14	5.14	4.18	4.18
SPP South - Energy Price - 1H2023	6323	4/23/2040	4/23/2040	4.31	4.31	4.31	4.31	4.31	4.31	2.16	1.99	1.89	0.82	1.83	1.83	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	4.31	4.31
SPP South - Energy Price - 1H2023	6324	4/24/2040	4/24/2040	4.37	4.37	4.37	4.37	4.37	4.37	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.44	2.49	2.49	2.49	2.49	2.49	2.49	2.46	2.47	4.49	4.42
SPP South - Energy Price - 1H2023	6325	4/25/2040	4/25/2040	4.37	4.42	4.42	4.41	4.35	4.42	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.2	2.26	2.18	2.18	4.35	4.35
SPP South - Energy Price - 1H2023	6326	4/26/2040	4/26/2040	4.22	4.28	4.22	4.27	4.32	4.32	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	0.76	1.85	2.12	2.12	2.12	2.12	2.12	4.22	4.22
SPP South - Energy Price - 1H2023	6327	4/27/2040	4/27/2040	4.14	4.14	4.14	4.14	4.14	4.14	2.08	1.97	0.49	0.32	0.49	0.49	0.49	0.49	0.49	2.08	2.08	2.08	2.08	2.08	2.08	2.08	4.14	4.14
SPP South - Energy Price - 1H2023	6328	4/28/2040	4/28/2040	4.14	4.14	4.14	4.14	4.14	4.14	4.68	4.68	4.68	4.68	1.42	4.3	1.69	4.3	4.3	4.3	4.68	4.68	4.68	4.68	4.68	4.68	4.14	4.14
SPP South - Energy Price - 1H2023	6329	4/29/2040	4/29/2040	4.14	4.14	4.14	4.14	4.14	4.14	4.68	4.3	1.21	4.3	4.3	4.3	4.68	4.3	4.3	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.14	4.14
SPP South - Energy Price - 1H2023	6330	4/30/2040	4/30/2040	4.12	4.12	4.12	4.12	4.14	4.14	2.08	2.08	1.66	1.81	1.66	1.66	0.74	0.74	1.66	0.74	1.66	2.08	2.08	2.08	2.08	2.08	4.12	4.12
SPP South - Energy Price - 1H2023	6331	5/1/2040	5/1/2040	8.67	8.67	8.67	8.67	8.67	8.67	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.73	6.91	6.91	6.91	6.91	6.91	6.91	8.67	8.67
SPP South - Energy Price - 1H2023	6332	5/2/2040	5/2/2040	8.85	8.85	8.85	8.85	8.85	8.85	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	8.85	8.85
SPP South - Energy Price - 1H2023	6333	5/3/2040	5/3/2040	9.24	9.24	9.24	9.24	9.24	9.52	7.3	6.81	6.81	6.27	6.27	6.27	2.33	6.27	6.81	6.27	6.27	7.04	7.3	7.3	7.3	7.3	9.24	9.24
SPP South - Energy Price - 1H2023	6334	5/4/2040	5/4/2040	9.12	9.12	9.12	9.12	9.12	9.12	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	9.12	9.12
SPP South - Energy Price - 1H2023	6335	5/5/2040	5/5/2040	9.12	9.12	9.12	9.12	9.12	9.12	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	9.12	9.12
SPP South - Energy Price - 1H2023	6336	5/6/2040	5/6/2040	9.12	9.12	9.12	9.12	9.12	9.12	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	9.12	9.12
SPP South - Energy Price - 1H2023	6337	5/7/2040	5/7/2040	9.6	9.6	9.6	9.6	9.6	9.6	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	9.6	9.6
SPP South - Energy Price - 1H2023	6338	5/8/2040	5/8/2040	9.65	9.65	9.65	9.65	9.65	9.65	7.58	7.58	7.58	7.58	7.58	7.58	6.98	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	7.58	9.65	9.65
SPP South - Energy Price - 1H2023	6339	5/9/2040	5/9/2040	9.77	9.77	9.77	9.77	9.77	9.77	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.81	7.67	7.67	9.8	9.77
SPP South - Energy Price - 1H2023	6340	5/10/2040	5/10/2040	9.91	9.99	9.91	9.91	9.91	10.16	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.8	7.96	7.92	9.97	9.91
SPP South - Energy Price - 1H2023	6341	5/11/2040	5/11/2040	9.86	9.97	9.97	9.91	9.97	10.07	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.72	7.86	9.86	9.82
SPP South - Energy Price - 1H2023	6342	5/12/2040	5/12/2040	9.86	9.97	9.82	9.82	9.82	9.82	11.14	11.14	11.29	11.28	11.22	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	9.82	9.82
SPP South - Energy Price - 1H2023	6343	5/13/2040	5/13/2040	9.82	9.82	9.82	9.82	9.82	9.82	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	9.82	9.82
SPP South - Energy Price - 1H2023	6344	5/14/2040	5/14/2040	10.26	10.26	10.26	10.26	10.26	10.26	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	10.26	10.26
SPP South - Energy Price - 1H2023	6345	5/15/2040	5/15/2040	10.45	10.45	10.45	10.45	10.45	10.45	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	10.45	10.45
SPP South - Energy Price - 1H2023	6346	5/16/2040	5/16/2040	10.21	10.21	10.21	10.21	10.21	10.21	7.98	7.05	6.93	6.93	6.93	6.93	6.93	7.05	6.93	6.93	7.05	7.98	7.98	7.98	7.98	7.98	10.21	10.21
SPP South - Energy Price - 1H2023	6347	5/17/2040	5/17/2040	10.09	10.09	10.09	10.09	10.09	10.09	7.89	7.44	6.85	6.85	6.85	6.85	6.85	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	10.09	10.09
SPP South - Energy Price - 1H2023	6348	5/18/2040	5/18/2040	9.62	9.62	9.62	9.62	9.62	9.62	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	9.62	9.62
SPP South - Energy Price - 1H2023	6349	5/19/2040	5/19/2040	9.62	9.62	9.62	9.62	9.62	9.62	10.9	10.03	10.03	9.59	10.03	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.62	9.62
SPP South - Energy Price - 1H2023	6350	5/20/2040	5/20/2040	9.62	9.62	9.62	9.62	9.62	9.62	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.96	9.62	9.62
SPP South - Energy Price - 1H2023	6351	5/21/2040	5/21/2040	8.61	8.61	8.61	8.61	8.61	8.61	6.86	6.86	6.86	6.86	6.86	6.86	6.86	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	8.9	8.77
SPP South - Energy Price - 1H2023	6352	5/22/2040	5/22/2040	9.98	9.98	9.98	9.98	9.98	9.98	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82	8.22	8.21	10.28	9.99
SPP South - Energy Price - 1H2023	6353	5/23/2040	5/23/2040	10.54	10.6	10.65	10.6	10.6	10.83	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	8.14	10.45	10.45
SPP South - Energy Price - 1H2023	6354	5/24/2040	5/24/2040	10.52	10.52	10.52	10.52	10.52	10.52	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	8.19	10.52	10.52
SPP South - Energy Price - 1H2023	6355	5/25/2040	5/25/2040	10.71	10.71	10.71	10.71	10.71	10.71	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	10.71	10.71
SPP South - Energy Price - 1H2023	6356	5/26/2040	5/26/2040	10.71	10.71	10.71	10.71	10.71	10.71	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	10.71	10.71
SPP South - Energy Price - 1H2023	6357	5/27/2040	5/27/2040	10.71	10.71	10.71	10.71	10.71	10.71	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14	10.71	10.71
SPP South - Energy Price - 1H2023	6358	5/28/2040	5/28/2040	10.71	10.71	10.71	10.71	10.71	10.71	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	10.71	10.71
SPP South - Energy Price - 1H2023	6359	5/29/2040	5/29/2040	10.37	10.37	10.37	10.37	10.37	10.37	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.16	8.2	10.42	10.49
SPP South - Energy Price - 1H2023	6360	5/30/2040	5/30/2040	10.42	10.42	10.39	10.34	10.41	10.45	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	10.31	10.31
SPP South - Energy Price - 1H2023	6361	5/31/2040	5/31/2040	10.02	10.02	10.02	10.02	10.02	10.02	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	10.02	10.02
SPP South - Energy Price - 1H2023	6362	6/1/2040	6/1/2040	17.98	17.98	17.98	17.98	17.98	17.98	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	18.55	17.98	17.98
SPP South - Energy Price - 1H2023	6363	6/2/2040	6/2/2040	17.98	17.98	17.98	17.98	17.98	17.98	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	17.98	17.98
SPP South - Energy Price - 1H2023	6364	6/3/2040	6/3/2040	17.98	17.98	17.98	17.98	18.03	18.22	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	18.51	17.98	17.98
SPP South - Energy Price - 1H2023	6365	6/4/2040	6/4/2040	20.48	20.44	20.44	20.44	20.44	20.44	20.73	20.73	20.73	21.11	20.73	21.11	20.73	20.73	20.73	20.73	20.73	20.73	21	20.73	20.73	21.11	20.44	21.21
SPP South - Energy Price - 1H2023	6366	6/5/2040	6/5/2040	22.35	22.55	22.49	22.35	22.35	22.35	22.42	23.02	22.49	22.42	22.42	22.42	22.42	22.42	24.98	24.98	24.98	23.64	23.81	25.38	25.57	24.98	24.48	22.35
SPP South - Energy Price - 1H2023	6367	6/6/2040	6/6/2040	22.89	22.89	23.08	23.16	23.31	23.5	23.4	23.18	25.24	25.78	26.11	26.11	26.11	26.11	26.66	26.46	26.11	26.11	26.11	26.11	26.11	26.11	25.07	23.32
SPP South - Energy Price - 1H2023	6368	6/7/2040	6/7/2040	22.99	22.99	22.73	22.73	22.8	22.99	22.48	22.51	22.48	22.48	24.24	22.78	25.63	25.63	25.63	25.97	25.63	25.63	25.63	25.63	25.63	24.74	22.41	22.41
SPP South - Energy Price - 1H2023	6369	6/8/2040	6/8/2040	21.17	21.19	21.13	21.22	21.37	21.56	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	21.07	20.79	20.9	20.59
SPP South - Energy Price - 1H2023	6370	6/9/2040	6/9/2040	20.51	20.51	20.51	20.51	20.51	20.51	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	20.51	20.51
SPP South - Energy Price - 1H2023	6371	6/10/2040	6/10/2040	20.51	20.51	20.51	20.51	20.51	20.51	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	20.51	20.51
SPP South - Energy Price - 1H2023	6372	6/11/2040	6/11/2040	22.49	22.49	22.49	22.49	22.49	22.49	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.49	22.49
SPP South - Energy Price - 1H2023	6373	6/12/2040	6/12/2040	20.59	20.59	20.59	20.59	20.59	20.59	19.52	18.21	17.96	18.21	20.86	20.86	20.86	20.86	20.86	20.87	20.87	20.87	20.87	20.87	20.87	20.87	20.59	20.59
SPP South - Energy Price - 1H2023	6374	6/13/2040	6/13/2040	20.56	20.56	20.56	20.56	20.56	20.56	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	21.78	20.56
SPP South - Energy Price - 1H2023	6375	6/14/2040	6/14/2040	21.78	21.78	21.78	21.78	21.78	21.78	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	21.92	22.29	21.92	21.93	21.92
SPP South - Energy Price - 1H2023	6376	6/15/2040	6/15/2040	21.92	21.92	21.92	21.92	21.92	21.92	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.04	22.3	23.25	22.98	23.22	23.34	23.81	22.76
SPP South - Energy Price - 1H2023	6377	6/16/2040	6/16/2040	22.21	21.92	21.92	21.92	21.92	21.92	22.55	22.55	22.55	22.55	22.55	24.51	22.55	23.78	22.55	22.55	22.55	22.55	24	23.42	22.55	22.55	22.28	21.92
SPP South - Energy Price - 1H2023	6378	6/17/2040	6/17/2040	22.21	21.92	21.92	21.92	21.92	21.92	22.55	22.55	22.71	22.66	22.55	22.55	22.55	24.51	23.49	22.55	22.55	23.89	23.91	24.7	24.7	24.7	24	22.34
SPP South - Energy Price - 1H2023	6379	6/18/2040	6/18/2040	23.26	23.21	23.16	23.09	22.97	23.58	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	23.16	25.45	24.45	25.15	23.86
SPP South - Energy Price - 1H2023	6380	6/19/2040	6/19/2040	24.2	23.56	23.46	23.52	23.67	23.86	23.28	23.25	23.37	23.21	23.43	23.53	24.72	26.44	24.79	23.21	23.51	24.72	24.72	24.72	24.39	24.72	25.46	25.46
SPP South - Energy Price - 1H2023	6381	6/20/2040	6/20/2040	25.8	25.93	25.8	25.8	25.8	25.8	23.66	23.61	23.59	23.59	23.59	23.59	23.59	23.59	24.78	23.59	23.59	24.78	24.78	26.29	27.25	26.49	25.94	25.94
SPP South - Energy Price - 1H2023	6382	6/21/2040	6/21/2040	26.21	25.94	25.94	25.94	25.81	25.7	23.87	25.09	23.8	25.32	26.33	24.22	27.11	25.11	27.11	26.36	27.11	27.11	27.5	27.5	28.41	27.11	26.96	26.21
SPP South - Energy Price - 1H2023	6383	6/22/2040	6/22/2040	25.25	25.25	25.25	25.25	25.25	25.25	23.11	23.34	23.04	23.04	24.85	24.36	24.46	25.18	25.63	25.55	23.34	24.74	25.18	25.18	25.65	25.18	25.24	25.25
SPP South - Energy Price - 1H2023	6384	6/23/2040	6/23/2040	25.25	24.98	24.59	23.37	23.42	23.69	24.03	23.9	24.96	23.9	23.7	23.7	25.07	25.98	25.98	25.23	23.9	25.98	25.98	24.49	25.98	24.44	23.08	23.03
SPP South - Energy Price - 1H2023	6385	6/24/2040	6/24/2040	23.03	23.03	23.03	23.03	23.03	23.03	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	24.32	23.7	24.32	23.7	23.7	24.32	23.7	23.03	23.03
SPP South - Energy Price - 1H2023	6386	6/25/2040	6/25/2040	20.64	20.64	20.64	20.64	20.64	20.75	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.91	20.64	20.64
SPP South - Energy Price - 1H2023	6387	6/26/2040	6/26/2040	21.84	21.84	21.84	21.84	21.84	21.84	21.97	21.97	21.97	21.97	21.97	21.97	21.97	21.97	22.15	21.97	22.15	21.97	21.97	22.5	22.74	23.66	22.98	22.57
SPP South - Energy Price - 1H2023	6388	6/27/2040	6/27/2040	23.46	22.86	22.71	22.98	23.32	22.98	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.41	22.37	22.33
SPP South - Energy Price - 1H2023	6389	6/28/2040	6/28/2040	20.45	19.87	19.84	19.84	20.23	19.84	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.59	20.2	20.2	20.2	19.84	19.84
SPP South - Energy Price - 1H2023	6390	6/29/2040	6/29/2040	22.88	22.79	22.64	22.6	22.64	22.37	22.62	22.49	23.71	23.65	22.34	22.34	25.19	24.92	25.48	25.48	23.88	25.48	25.81	25.48	25.48	24.04	22.59	22.94

SPP South - Energy Price - 1H2023	6391	6/30/2040	6/30/2040	23.05	22.9	22.64	22.48	22.8	22.43	23.18	23.08	23.72	23.08	22.9	23.08	25.09	25.09	25.09	25.09	25.09	25.09	25.09	22.9	24.21	23.61	23.27	22.94
SPP South - Energy Price - 1H2023	6392	7/1/2040	7/1/2040	47.35	47.21	46.08	46.13	46.41	44.76	50.31	50.31	50.31	50.31	50.31	50.31	50.31	54.53	50.31	54.69	52.21	50.31	55.1	55.1	55.57	56.3	48.78	46.27
SPP South - Energy Price - 1H2023	6393	7/2/2040	7/2/2040	47.33	46.99	46.89	46.93	47.21	48.7	42.71	42.23	41.95	41.95	41.95	47.82	48.06	48.06	48.06	48.06	47.11	47.46	48.46	47.82	48.06	48.13	49.61	49.61
SPP South - Energy Price - 1H2023	6394	7/3/2040	7/3/2040	49.61	48.78	46.74	46.66	49.61	49.39	45.99	45.9	45.09	48.45	48.74	49.11	53.66	49.5	55.22	55.22	55.22	55.22	57.42	55.22	55.78	55.22	61.74	56.44
SPP South - Energy Price - 1H2023	6395	7/4/2040	7/4/2040	52.42	51.98	51.21	50.77	51.36	51.8	48.45	48.45	50.59	49.11	55.06	55.22	54.29	53.95	50.65	54.04	49.29	55.19	57.52	57.57	55.19	55.22	52.27	51.8
SPP South - Energy Price - 1H2023	6396	7/5/2040	7/5/2040	49.85	49.85	49.51	49.85	49.85	49.85	46.89	46.5	44.31	43.14	45.2	43.8	46.89	46.89	47.5	47.5	51.67	51.67	56.25	56.12	51.67	52.68	59.35	50.28
SPP South - Energy Price - 1H2023	6397	7/6/2040	7/6/2040	50.3	49.14	49.04	49	47.66	49	42.63	42.4	41.94	44.01	46.21	46.21	46.8	47.86	49.18	49.89	53.32	53.32	53.32	53.32	53.32	53.32	60.08	57.26
SPP South - Energy Price - 1H2023	6398	7/7/2040	7/7/2040	50.61	50.07	49	49	49	47.66	53.84	53.84	51.86	51.11	53.84	53.84	53.84	53.84	55.06	54.94	53.84	56.99	63.63	64.21	62.74	58.55	50.5	49
SPP South - Energy Price - 1H2023	6399	7/8/2040	7/8/2040	47.66	47.66	47.66	47.66	47.66	47.66	52.15	52.15	51.3	51.07	51.57	52.01	53.6	53.08	53.84	53.84	55.35	55.35	54.43	57.39	55.35	55.35	47.66	47.66
SPP South - Energy Price - 1H2023	6400	7/9/2040	7/9/2040	49.06	46.8	46.74	46.74	47.02	48.53	43.52	42.08	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	43.53	43.52	43.93	44.12	47.98	47.98
SPP South - Energy Price - 1H2023	6401	7/10/2040	7/10/2040	47.76	47.98	47.98	47.41	47.69	49.15	45.82	46.35	43.12	42.64	42.79	48.23	48.24	48.23	48.24	48.88	48.24	48.24	48.24	48.24	48.24	48.23	50.11	50.11
SPP South - Energy Price - 1H2023	6402	7/11/2040	7/11/2040	50.11	50.11	50.11	50.11	50.11	50.11	44.12	43.08	42.63	42.63	42.63	42.63	42.63	42.63	42.63	44.36	42.63	44.12	49.25	48.59	44.12	44.12	47.62	47.62
SPP South - Energy Price - 1H2023	6403	7/12/2040	7/12/2040	47.62	47.62	47.62	47.62	47.62	47.62	43.87	43.87	43.87	43.87	43.87	43.87	43.87	43.87	43.87	43.87	43.87	43.87	48.17	50.68	43.87	49.97	52.21	49.82
SPP South - Energy Price - 1H2023	6404	7/13/2040	7/13/2040	47.87	46.23	46.23	46.23	46.23	47.87	42.73	43.58	42.73	43.05	44.45	42.73	44.19	45.67	45.37	43.74	44.95	45.64	48.12	49.36	48.69	48.71	51.81	50.28
SPP South - Energy Price - 1H2023	6405	7/14/2040	7/14/2040	49.74	48.93	48.12	47.95	46.23	46.23	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.87	53.42	58.85	56	56.77	56.74	48.54	47.75
SPP South - Energy Price - 1H2023	6406	7/15/2040	7/15/2040	46.23	46.23	46.23	46.23	46.23	46.23	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	52.22	56.35	57.23	57.23	57.5	49.18	49.54
SPP South - Energy Price - 1H2023	6407	7/16/2040	7/16/2040	47.78	47.31	46.83	46.92	47.19	46.83	41.28	43.48	41.28	42.47	46.52	44.96	47.07	47.68	47.68	47.68	47.68	51.32	51.89	51.9	52.24	51.32	54.63	50.33
SPP South - Energy Price - 1H2023	6408	7/17/2040	7/17/2040	50.47	50.33	49.08	49.08	49.87	49.31	45.02	46.29	45.78	45.75	43.79	47.39	47.39	47.39	47.39	47.39	48.01	47.39	53.43	48.01	47.68	48.5	50.47	47.7
SPP South - Energy Price - 1H2023	6409	7/18/2040	7/18/2040	46.83	46.83	46.78	46.83	46.83	46.31	41.04	41.04	41.04	41.04	41.04	41.04	41.04	41.04	41.04	41.04	42.41	42.41	47.41	46.81	42.41	46.49	48.06	44.87
SPP South - Energy Price - 1H2023	6410	7/19/2040	7/19/2040	44.87	44.87	44.52	44.87	44.8	44.87	41.15	40.11	40.11	40.11	40.11	45.12	42.35	43.2	45.76	45.47	43.4	45.76	45.76	45.77	46.34	45.94	48.43	47.04
SPP South - Energy Price - 1H2023	6411	7/20/2040	7/20/2040	45.22	46.76	46.76	46.76	46.76	46.14	42.32	44.32	43.95	46.03	46.03	46.03	45.47	44.15	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.76	46.76
SPP South - Energy Price - 1H2023	6412	7/21/2040	7/21/2040	46.76	46.76	44.13	46.76	46.76	46.76	48.59	48.59	48.59	48.59	48.59	48.59	52.82	52.48	52.82	52.82	52.82	52.82	53.52	52.82	52.82	52.82	44.97	44.32
SPP South - Energy Price - 1H2023	6413	7/22/2040	7/22/2040	44.35	43.88	42.72	42.72	43.5	42.72	48.26	48.26	48.26	48.26	48.26	48.26	48.26	48.26	52.59	52.82	52.82	52.82	53.52	52.82	52.82	53.52	46.76	46.76
SPP South - Energy Price - 1H2023	6414	7/23/2040	7/23/2040	45.14	43.56	43.87	44.61	44.52	45.9	40.17	39.65	39.65	39.65	39.65	42.33	44.64	43.21	44.39	44.31	45.25	45.25	46.86	45.81	45.25	45.25	47.79	46.49
SPP South - Energy Price - 1H2023	6415	7/24/2040	7/24/2040	46.49	46.49	46.49	46.49	45.68	44.8	41.27	39.97	39.97	39.97	39.97	39.97	45.57	45.61	45.61	45.61	45.61	45.61	46.18	46.18	45.61	45.61	47.11	47.23
SPP South - Energy Price - 1H2023	6416	7/25/2040	7/25/2040	47.4	47.11	47.11	43.3	46.1	45.59	41.61	42.25	42.63	44.5	45.65	46.14	46	46.58	46.58	46.58	46.58	46.58	47.14	46.58	46.58	46	48.06	48.06
SPP South - Energy Price - 1H2023	6417	7/26/2040	7/26/2040	43.81	47.96	48.06	48.06	48.06	48.06	46.43	44.99	42.72	45.1	46.47	50.5	51.78	52.73	52.73	52.73	52.73	52.73	52.73	52.73	52.73	50.45	49.31	48.92
SPP South - Energy Price - 1H2023	6418	7/27/2040	7/27/2040	47.58	48.92	47.58	48.91	48.92	48.92	45.51	44.66	46.04	46.73	46.15	45.63	46.36	49	49	49	49	48.12	49.3	49.3	48.16	46.74	48.65	47
SPP South - Energy Price - 1H2023	6419	7/28/2040	7/28/2040	45	45	43.46	45	46.26	43.46	51.54	53.75	53.75	54.01	54.26	55.26	55.26	55.26	55.26	55.26	55.26	53.94	55.26	53.75	53.75	53.94	47.58	47
SPP South - Energy Price - 1H2023	6420	7/29/2040	7/29/2040	43.46	44.91	44.81	43.46	43.46	43.46	49.1	49.1	49.1	49.1	49.1	51.44	53	53.75	54.85	53.75	55.26	55.26	55.68	58.3	56.58	55.26	48.4	47.58
SPP South - Energy Price - 1H2023	6421	7/30/2040	7/30/2040	46.8	46.08	46.58	46.08	46.08	46.08	41.17	40.65	39.88	40.06	45.19	46.07	45.5	46.07	46.07	46.07	51.52	51.52	51.52	54.03	51.52	51.52	49.43	49.43
SPP South - Energy Price - 1H2023	6422	7/31/2040	7/31/2040	49.43	49.43	49.43	48.08	48.08	49.43	46.56	45.03	44.02	46.01	46.56	46.68	48.93	51.98	52.25	52.84	52.84	55.29	60.14	55.61	55.75	52.84	55.08	51.35
SPP South - Energy Price - 1H2023	6423	8/1/2040	8/1/2040	54.29	49.93	53.23	53.92	53.92	53.92	52.86	51.15	48.63	52.58	54.53	55.37	55.38	55.38	55.38	55.38	55.37	56.82	59.91	62.34	57.56	55.37	54.07	54.07
SPP South - Energy Price - 1H2023	6424	8/2/2040	8/2/2040	54.56	54.18	52.69	52.16	54.07	52.21	53.59	50.64	55.18	52.47	55.18	54.18	54.98	55.95	51.47	55.95	55.95	56.02	56.1	55.95	55.95	55.18	54.5	54.24
SPP South - Energy Price - 1H2023	6425	8/3/2040	8/3/2040	54.24	54.24	54.24	54.24	54.24	54.24	48.19	48.19	48.19	48.19	48.19	48.19	48.19	54.57	53.63	54.9	52.52	54.9	55.31	54.9	54.9	54.9	54.24	54.24
SPP South - Energy Price - 1H2023	6426	8/4/2040	8/4/2040	54.24	53.9	53.52	53	52.45	51.92	48.77	48.77	48.77	48.77	48.77	48.77	48.77	48.77	52.52	52.9	53.08	53.46	53.46	53.46	53.46	53.46	54.24	54.24
SPP South - Energy Price - 1H2023	6427	8/5/2040	8/5/2040	54.24	54.24	54.24	54.24	54.24	54.24	52.71	49.51	48.77	48.77	49.51	49.51	49.51	53.34	49.63	49.51	53.46	53.46	53.46	54.04	54.04	53.46	54.24	54.24
SPP South - Energy Price - 1H2023	6428	8/6/2040	8/6/2040	53.21	50.44	50.44	53.46	54.54	54.76	51.34	50.41	48.58	53.52	49.23	55	55.21	55.02	55.35	55.35	55.35	55.35	55.35	55.35	55.35	55.34	54.54	53.66
SPP South - Energy Price - 1H2023	6429	8/7/2040	8/7/2040	53.66	53.66	53.66	53.66	53.66	53.66	50.82	49.56	47.73	47.73	53.89	54.39	54.39	54.39	55.14	55.14	54.39	54.39	54.39	54.39	54.39	54.39	53.66	53.66
SPP South - Energy Price - 1H2023	6430	8/8/2040	8/8/2040	45.04	45.04	45.04	44.74	44.19	45.04	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.06	41.18	44.23	44.22	43.33	42.09	41.22	41.22
SPP South - Energy Price - 1H2023	6431	8/9/2040	8/9/2040	40.44	40.44	40.44	40.44	40.05	40.44	37.44	37.44	37.44	37.44	37.44	37.44	37.44	37.44	40.81	40.81	40.81	40.81	40.81	42.86	42.86	40.81	40.44	40.44
SPP South - Energy Price - 1H2023	6432	8/10/2040	8/10/2040	40.01	40.01	40.01	40.01	39.67	39.14	37.22	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	40.27	40.27	40.48	42.49	42.49	40.27	40.27	37.07	37
SPP South - Energy Price - 1H2023	6433	8/11/2040	8/11/2040	36.81	36.81	36.81	36.81	36.81	36.81	36.28	36.78	36.71	36.28	37.93	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.41	39.43	36.7	36.7
SPP South - Energy Price - 1H2023	6434	8/12/2040	8/12/2040	36.7	36.7	36.7	36.7	36.7	36.7	36.18	36.78	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	39.43	40.48	39.43	39.46	40.01	40.01
SPP South - Energy Price - 1H2023	6435	8/13/2040	8/13/2040	46.3	46.3	46.3	45.87	42.6	44.79	42.01	42.01	42.01	42.01	42.01	42.01	42.01	42.01	45.85	46.18	46.33	44.21	47.98	47.98	47.98	47.86	46.95	46.49
SPP South - Energy Price - 1H2023	6436	8/14/2040	8/14/2040	54.08	53.75	51.77	51.77	51.77	51.77	48.06	48.06	48.06	48.06	48.06	48.06	48.65	49.46	49.05	54.75	52.39	54.75	56.19	55.51	54.75	54.75	54.16	54.08
SPP South - Energy Price - 1H2023	6437	8/15/2040	8/15/2040	55.45	55.06	54.16	54.16	53.62	54.16	50.66	49.2	49.2	49.2	49.2	49.2	50.31	52.22	53.05	53.53	53.53	53.53	62.55	62.51	56.83	53.67	55.54	55.06
SPP South - Energy Price - 1H2023	6438	8/16/2040	8/16/2040	55.06	55.06	55.06	55.06	55.06	55.06	51.57	48.82	48.82	48.82	48.82	49.87	50.31	52	52.68	55.61	56.4	56.4	66.77	63.58	60.44	56.4	56.63	55.94
SPP South - Energy Price - 1H2023	6439	8/17/2040	8/17/2040	54.74	53.6	54.74	54.74	54.74	54.74	52.09	49.54	47.4	47.4	53.55	53.65	54.02	54.02	54.75	56.38	58.28	59.51	60.45	60.01	58.45	58.34	54.74	53.23
SPP South - Energy Price - 1H2023	6440	8/18/2040	8/18/2040	53.23	52.99	52.61	52.61	52.61	53.06	51.85	51.85	49.3	49.84	51.85	51.85	52.46	52.82	59.19	62.22	64.32	71.5	68.3	64.32	64.32	64.32	54.74	54.74
SPP South - Energy Price - 1H2023	6441	8/19/2040	8/19/2040	53.67	53.23	53.23	53.23	53.23	53.23	52.46	52.46	52.46	52.46	52.46	52.46	52.46	53.95	53.95	62.13	63.14	64.32	70.27	64.32	64.32	63.14	54.74	54.74
SPP South - Energy Price - 1H2023	6442	8/20/2040	8/20/2040	54.74	53.5	53.5	54.74	53.5	54.74	54.25	54.99	54.99	54.25	60.48	55.85	61.61	56.81	62.08	61.88	61.88	61.88	65.13	65.63	61.88	60.53	63.52	55.02
SPP South - Energy Price - 1H2023	6443	8/21/2040	8/21/2040	55.79	55.02	55.02	54.39	50.88	55.02	55.73	55.73	51.27	52.91	56.1	54.1	56.02	52.54	57.06	56.25	56.25	57.06	64.39	64.39	57.06	57.06	55.79	55.79
SPP South - Energy Price - 1H2023	6444	8/22/2040	8/22/2040	55.79	55.45	55.79	55.79	54.01	55.79	52.37	50.4	49.53	56.06	56.41	56.41	57.51	64.05	68.45	68.16	68.45	68.45	68.45	68.76	68.96	64.96	68.74	58.21
SPP South - Energy Price - 1H2023	6445	8/23/2040	8/23/2040	58.21	57.09	56.68	56.68	57.73	58.21	57.85	55.4	55.11	57.02	56.07	57.03	59.61	61.84	65.36	65.36	65.36	65.36	65.36	67.86	65.36	65.36	66.78	57.9
SPP South - Energy Price - 1H2023	6446	8/24/2040	8/24/2040	57.9	57.9	56.29	57.9	57.9	57.9	58.9	59.36	59.25	64.92	66.66	68.49	66.66	64.48	65.92	66.66	66.66	66.66	66.66	66.66	64.92	63.4	56.29	56.29
SPP South - Energy Price - 1H2023	6447	8/25/2040	8/25/2040	56.29	56.29	56.29	56.29	56.29	56.29	55.47	55.38	51.42	55.02	55.47	55.47	57.23	62.7	63.04	68.13	68.13	68.13	74.36	68.13	68.13	57.06	56.29	56.29
SPP South - Energy Price - 1H2023	6448	8/26/2040	8/26/2040	56.29	56.29	53.49	52.84	52.35	56.29	55.47	52.49	51.29	50.9	51.03	51.03	55.47	55.47	55.47	55.47	55.47	54.61	55.47	55.47	55.47	55.47	56.29	56.29
SPP South - Energy Price - 1H2023	6449	8/27/2040	8/27/2040	44.72	44.72	44.72	44.72	44.72	44.72	43.19	40.77	40.77	40.77	40.77	40.77	40.77	40.77	40.77	42.41	46.6	47.11	50.02	50.53	48.96	48.96	47.04	47.04
SPP South - Energy Price - 1H2023	6450	8/28/2040	8/28/2040	52.97	52.97	52.97	52.97	52.97	54.47	53.79	50.89	47.81	47.55	47.55	47.55	53.79	53.79	54.52	54.52	54.52	54.52	60.76	56.89	55.7	54.52	54.47	52.97
SPP South - Energy Price - 1H2023	6451	8/29/2040	8/29/2040	52.9	52.9	52.9	52.9	52.9	52.9	51.24	47.97	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	47.14	54.45	54.45	57.38	55.22	52.22	51.89	50.28
SPP South - Energy Price - 1H2023	6452	8/30/2040	8/30/2040	50.28	50.28	50.28	50.28	50.28	50.28	49.02	45.1	45.1	45.1	45.1	45.1	45.1	45.1	49.02	45.1	51.44	52.1	58.16	56.82	52.1	52.1	52.18	51.48
SPP South - Energy Price - 1H2023	6453	8/31/2040	8/31/2040	48.2	48.2	47.45	48.2	48.2	48.2	48.41	47.87	45.03	47.87	47.87	47.87	47.87	54.18	54.25	54.25	54.25	54.43	54.25	54.25	54.25	53.5	47.45	46.18
SPP South - Energy Price - 1H2023	6454	9/1/2040	9/1/2040	36.44	37.44	36.44	36.44	36.44	36.44	52.08	52.08	52.08	52.08	53.52	53.51	52.08	53.71	55	55.18	56.05	56.1	63.25	64.67	58.94	59.6	37.44	34.31
SPP South - Energy Price - 1H2023	6455	9/2/2040	9/2/2040	34.32	33.72	35.78	33.72	33.72	35.45	49.84	48.75	49.4	47.64	48.19	48.19	51.74	52.08	54.34	53.88	56.05	63.52	61.84	63.52	58.94	57.5	37.44	37.01
SPP South - Energy Price - 1H2023	6456	9/3/2040	9/3/2040	37.01	37.01	37.01	36.44	37.01	37.01	34.66	34.66	31.89	31.89	31.89	32.64	32.04	31.89	35.89	35.89	35.89	35.89	40.25	39.22	35.89	35.89	39.33	36.44
SPP South - Energy Price - 1H2023	6457	9/4/2040	9/4/2040	40.42	40.28	40.28	40.28	40.28	41.55	38.85	37.07	36.45	36.45	36.45	36.45	36.45	36.45	36.45	37.47	38.85	38.85	42.1	41.52	41.09	38.85	40.67	40.41
SPP South - Energy Price - 1H2023	6458	9/5/2040	9/5/2040	40.69	40.69	40.69	40.69	40.69	42.04	41.97	41.97	41.97	41.97	41.97	42.56	42.56	42.56	42.56	42	41.97	41.97	43.18	43.16	42.56	41.97	43.77	43.77
SPP South - Energy Price - 1H2023	6459	9/6/2040	9/6/2040	43.02	43.02	43.02	43.02	43.02	43.02	40.13	39.48	39	36.5	36.29	36.29	36.29	36.29	36.29	36.29	36.29	39	38.88	39	39	39	40.03	40.23
SPP South - Energy Price - 1H2023	6460	9/7/2040	9/7/2040	39.62	39.27	39.62	39.52	39.55	39.62	35.92	35.92	35.92	35.92	35.92	35.91	35.92	35.91	35.92	35.92	35.92	35.92	36.77	37.15	36.45	35.92	38.79	38.79
SPP South - Energy Price - 1H2023	6461	9/8/2040	9/8/2040	38.79	38.79	38.79	38.79	38.79	38.79	55.44	55.44	55.44	55.44	55.44	55.44	55.44	55.44	55.44	55.44	55.44	55.44	60.76	60.26	60.26	55.55	39.28	38.79
SPP South - Energy Price - 1H2023	6462	9/9/2040	9/9/2040	38.79	38.79	38.79	38.79	38.79	38.79	55.44	55.44	55.44	55.44	55.44	55.44	55.44	56.71	55.44	55.44	55.44	55.44	59.03	59.96	57.99	56.71	39.28	39.77
SPP South - Energy Price - 1H2023	6463	9/10/2040	9/10/2040	38.79	38.69	39.06	38.94	39.11	39.13	38.21	38.15	37.11	35.55	35.55	35.55	35.55	40.51	40.51	40.51	40.51	40.51	40.51	40.51	40.51	40.51	42.02	39.32
SPP South - Energy Price - 1H2023	6464	9/11/2040	9/11/2040	38.61	38.99	38.99	38.64	38.38	38.99	37.86	38.03	35.59	34.95	34.95	34.95	34.95	34.95	34.95	34.95	34.95	35.59	36.2	36.14	35.59	34.95	37.62	37.62
SPP South - Energy Price - 1H2023	6465	9/12/2040	9/12/2040	37.93	37.93	37.93	37.93	37.93	37.93	35.21	35.21	35.21	35.21	35.21	35.21	35.21	35.21	35.21	35.21	35.21	35.21	40.68	35.21	36.3	35.21	38.81	38.81
SPP South - Energy Price - 1H2023	6466	9/13/2040	9/13/2040	38.81	38.63	38.81	38.81	38.81	38.81	35.78	35.78	35.78	35.78	35.78	35.78	35.78	35.78	35.78	35.78	35.78	35.78	40.78	39.09	37.91	35.81	39.28	39.61
SPP South - Energy Price - 1H2023	6467	9/14/2040	9/14/2040	38.29	38.7	38.7	38.35	38.7	38.7	35.62	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	34.71	37.33	37.33
SPP South - Energy Price - 1H2023	6468	9/15/2040	9/15/2040	37.33	37.33	37.33	37.33	37.33	37.33	53.35	15.68	9.13	15.68	9.71	15.68	15.68	15.68	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	37.33	37.33
SPP South - Energy Price - 1H2023	6469	9/16/2040	9/16/2040	37.33	37.33	37.33	37.33	37.33	37.33	53.35	13.08	9.13	8.46	13.08	13.08	13.08	14.79	16.95	53.35	53.35	53.35	53.35	53.35	53.35	53.35	37.33	37.33
SPP South - Energy Price - 1H2023	6470	9/17/2040	9/17/2040	34.86	34.86	34.86	34.86	34.86	34.86	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	34.1	34.1	37.31	37.31	34.1	34.1	33.81	35.36	34.86
SPP South - Energy Price - 1H2023	6471	9/18/2040	9/18/2040	37.14	37.14	37.14	37.14	37.33	37.84	37.12	34.89	35.31	34.56	34.82	34.9	34.56	39.4	39.41	39.41	39.41	39.41	39.41	39.41	39.41	35.89	37.63	37.14
SPP South - Energy Price - 1H2023	6472	9/19/2040	9/19/2040	37.09	37.09	37.14	37.14	37.14	37.78	35.04	35.04	34.51	34.51	34.51	34.51	34.51	35.04	35.04	34.51	34.58	39.36	39.36	39.36	35.72	34.58	37.42	37.09
SPP South - Energy Price - 1H2023	6473	9/20/2040	9/20/2040	37.23	37.42	37.42	37.42	37.42	37.94	35.16	34.64	34.64	34.64	34.64	34.64	34.64	34.64	34.64	34.64	34.64	39.49	39.49	39.49	37.97	36.1	37.23	37.23

SPP South - Energy Price - 1H2023	6474	9/21/2040	9/21/2040	35.61	35.19	35.56	35.43	35.61	35.63	33.39	32.87	32.87	32.87	32.87	32.86	32.86	32.86	32.87	32.87	32.87	32.87	32.87	32.87	32.87	32.87	35.08	35.08
SPP South - Energy Price - 1H2023	6475	9/22/2040	9/22/2040	35.08	35.08	35.08	35.08	35.08	35.08	50.14	50.14	16.95	14.72	14.72	10.68	13.06	16.95	16.95	50.14	50.14	50.14	50.14	50.14	50.14	50.14	35.08	35.08
SPP South - Energy Price - 1H2023	6476	9/23/2040	9/23/2040	35.08	35.08	35.08	35.08	35.08	35.08	50.14	11.16	10.54	10.54	2.47	2.97	3.78	14.72	14.72	19.64	18.95	50.14	50.14	50.14	50.14	50.14	35.08	32.28
SPP South - Energy Price - 1H2023	6477	9/24/2040	9/24/2040	32.28	32.28	32.28	32.28	32.28	35.01	32.81	28.39	26.12	26.12	26.12	26.12	32.81	32.81	32.81	32.81	32.81	32.81	37.41	37.22	32.81	32.81	35.01	35.01
SPP South - Energy Price - 1H2023	6478	9/25/2040	9/25/2040	37.31	37.31	37.31	37.31	37.31	37.31	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	36.15	39.56	39.56	39.56	39.56	37.87	37.38	37.31
SPP South - Energy Price - 1H2023	6479	9/26/2040	9/26/2040	37.38	37.38	37.38	37.38	37.38	37.38	36.66	37.05	38.03	38.61	36.85	35.77	37.57	39.44	39.25	39.52	39.52	39.63	39.63	39.63	39.52	37.88	37.76	37.38
SPP South - Energy Price - 1H2023	6480	9/27/2040	9/27/2040	37.8	37.8	37.8	37.8	37.8	37.8	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	37.8	37.8
SPP South - Energy Price - 1H2023	6481	9/28/2040	9/28/2040	38.09	38.09	38.09	38.09	38.09	38.09	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	38.09	38.09
SPP South - Energy Price - 1H2023	6482	9/29/2040	9/29/2040	38.09	38.09	38.09	38.09	38.09	38.09	54.44	54.44	10.54	5.02	5.02	5.02	3.78	5.02	4.22	5.02	18.95	54.44	54.44	54.44	54.44	54.44	38.09	38.09
SPP South - Energy Price - 1H2023	6483	9/30/2040	9/30/2040	38.09	38.09	38.09	38.09	38.09	38.09	54.44	54.44	15.09	13.36	13.47	12.95	15.09	15.09	18.93	19.64	54.44	54.44	54.44	54.44	54.44	54.44	38.09	38.09
SPP South - Energy Price - 1H2023	6484	10/1/2040	10/1/2040	21.44	21.44	21.44	21.44	21.44	21.44	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	19.88	18.91	18.91	18.91	21.44	21.44
SPP South - Energy Price - 1H2023	6485	10/2/2040	10/2/2040	20.08	20.08	20.08	20.08	20.08	20.08	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	17.84	20.08	20.08
SPP South - Energy Price - 1H2023	6486	10/3/2040	10/3/2040	20.03	20.03	20.03	20.03	20.03	20.03	17.8	17.8	17.8	16.38	17.2	16.38	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	20.03	20.03
SPP South - Energy Price - 1H2023	6487	10/4/2040	10/4/2040	20.86	20.86	20.86	20.86	20.86	20.86	18.46	16.52	3.34	3.39	3.68	5.92	5.92	5.92	12.39	18.46	18.46	18.46	18.46	18.46	18.46	18.46	20.86	20.86
SPP South - Energy Price - 1H2023	6488	10/5/2040	10/5/2040	21.03	21.03	21.03	21.03	21.03	21.03	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.59	21.03	21.03
SPP South - Energy Price - 1H2023	6489	10/6/2040	10/6/2040	21.03	21.03	21.03	21.03	21.03	21.03	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	24.18	24.82	24.26	23.92	23.92	21.03	21.03
SPP South - Energy Price - 1H2023	6490	10/7/2040	10/7/2040	21.03	21.03	21.03	21.03	21.03	21.03	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	21.03	21.03
SPP South - Energy Price - 1H2023	6491	10/8/2040	10/8/2040	20.41	20.41	20.41	20.41	20.41	20.41	19.43	19.61	19.54	19.61	19.31	18.92	18.92	18.92	18.92	18.92	19.61	21.46	21.46	19.61	19.61	18.92	22.95	22.95
SPP South - Energy Price - 1H2023	6492	10/9/2040	10/9/2040	22.95	22.95	22.95	22.95	23.73	23.24	19.71	19.9	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.27	19.17	19.17	19.17	20.73	20.73
SPP South - Energy Price - 1H2023	6493	10/10/2040	10/10/2040	20.28	20.28	20.28	20.28	20.28	20.28	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.81	19.52	19.52	19.52	19.52	23.19	23.19
SPP South - Energy Price - 1H2023	6494	10/11/2040	10/11/2040	23.24	23.51	23.24	23.51	23.51	23.51	19.52	19.52	19.02	19.02	19.02	17.96	19.02	17.96	17.96	19.02	19.02	19.52	21.58	21.58	21.58	19.52	20.55	20.55
SPP South - Energy Price - 1H2023	6495	10/12/2040	10/12/2040	20.18	20.18	20.18	19.08	19.08	20.18	18.15	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	18.15	20.22	20.22	18.15	17.86	21.77	19.08
SPP South - Energy Price - 1H2023	6496	10/13/2040	10/13/2040	19.08	19.08	19.08	19.08	19.08	20.74	23.59	21.71	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.71	21.71	23.59	23.59	21.71	21.71	19.08	19.08
SPP South - Energy Price - 1H2023	6497	10/14/2040	10/14/2040	19.08	19.08	19.08	19.08	19.08	19.08	23.59	21.71	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.71	21.71	21.71	23.59	23.59	21.71	21.71	19.08	21.79
SPP South - Energy Price - 1H2023	6498	10/15/2040	10/15/2040	25.92	24.2	25.47	25.39	25.92	25.57	23.37	21.62	21.15	21.07	21.26	21.2	20.67	20.67	21.53	20.67	21.53	24.14	24.17	23.69	23.58	23.58	26.89	26.89
SPP South - Energy Price - 1H2023	6499	10/16/2040	10/16/2040	26.89	26.89	26.88	26.8	26.89	26.89	23.68	21.65	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	20.78	22.59	22.59	22.73	22.59	21.65	23.92	23.72
SPP South - Energy Price - 1H2023	6500	10/17/2040	10/17/2040	23.92	23.92	23.92	23.92	23.92	23.92	21.9	21	19.32	21	20.31	19.32	21	19.32	20.31	21	21	21	21	21	21	21	20.9	22.76
SPP South - Energy Price - 1H2023	6501	10/18/2040	10/18/2040	21.35	22.74	24.46	24.46	24.46	24.6	22.33	21.88	21.37	21.37	21.37	21.37	21.37	21.37	21.37	21.37	22.25	22.33	22.33	22.33	22.14	22.03	23	22.76
SPP South - Energy Price - 1H2023	6502	10/19/2040	10/19/2040	22.54	23	23	23	24.18	24.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.67	21.84	24.51	24.27
SPP South - Energy Price - 1H2023	6503	10/20/2040	10/20/2040	24.29	26.25	24.18	24.57	23.17	24.31	26.81	27.5	24.02	24.02	24.02	24.02	24.02	24.02	24.02	24.02	27.98	30.51	30.49	30.49	30.49	30.49	26.8	26.49
SPP South - Energy Price - 1H2023	6504	10/21/2040	10/21/2040	24.5	26.63	26.63	26.63	26.55	24.5	30.3	27.51	24.02	24.02	5.42	6.04	3.09	2.34	6.04	9.15	24.02	30.74	30.3	31.06	31.06	31.06	27.29	27.14
SPP South - Energy Price - 1H2023	6505	10/22/2040	10/22/2040	26.49	25.12	25.19	25.12	26.49	26.55	23.17	22.28	21.32	21.32	21.32	21.32	21.32	21.32	22.24	22.8	25.06	29.07	29.52	26.25	25.06	25.04	26.71	24.39
SPP South - Energy Price - 1H2023	6506	10/23/2040	10/23/2040	24.88	23.59	21.72	21.72	21.72	21.72	21.66	21.66	8.91	5.99	3.68	4.1	5.99	5.41	5.99	6.22	21.66	21.66	21.66	21.66	21.66	21.66	21.72	21.72
SPP South - Energy Price - 1H2023	6507	10/24/2040	10/24/2040	21.6	21.6	21.6	21.6	21.6	21.6	21.57	21.57	21.57	21.57	21.71	22.56	22.56	22.2	22.71	22.56	22.56	22.56	22.56	22.56	22.24	22.07	21.83	21.83
SPP South - Energy Price - 1H2023	6508	10/25/2040	10/25/2040	21.83	21.51	21.83	20.64	21.83	22.75	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	21.13	20.79	20.79	20.79	20.79	20.79	21.01	20.97
SPP South - Energy Price - 1H2023	6509	10/26/2040	10/26/2040	21.01	21.01	20.89	21.01	21.01	21.01	20.81	20.81	21.13	21.44	21.72	20.81	20.83	20.91	21.72	21.72	21.72	24.4	24.15	22.63	21.51	20.81	25.24	25.58
SPP South - Energy Price - 1H2023	6510	10/27/2040	10/27/2040	25.64	24.35	24.4	25.71	26.22	25.6	29.46	29.27	29.62	27.4	29.14	27.25	27.25	27.25	27.84	27.25	28.17	28.31	30.06	29.63	29.09	26.85	23.66	23.96
SPP South - Energy Price - 1H2023	6511	10/28/2040	10/28/2040	22.22	22.22	22.22	21.64	22.22	22.22	22.73	22.73	5.69	4.47	4.47	4.2	4.2	4.47	4.47	4.47	4.92	22.73	22.73	22.73	22.73	22.73	19.98	21
SPP South - Energy Price - 1H2023	6512	10/29/2040	10/29/2040	22.02	22.02	22.02	22.02	22.02	22.02	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	22.65	22.65	20.43	20.19	20.19	24.33	24.33
SPP South - Energy Price - 1H2023	6513	10/30/2040	10/30/2040	24.33	24.33	24.33	24.33	24.33	24.33	20.41	20.41	20.41	20.41	20.41	20.41	20.41	20.41	20.41	20.41	20.41	21.83	22.44	21.83	21.83	21.83	24.86	24.86
SPP South - Energy Price - 1H2023	6514	10/31/2040	10/31/2040	23.59	23.59	23.59	23.59	23.59	23.59	19.81	19.81	19.81	21.89	19.81	19.81	19.81	19.81	19.53	19.53	19.53	19.53	19.53	19.53	19.53	19.53	21.18	21.18
SPP South - Energy Price - 1H2023	6515	11/1/2040	11/1/2040	24.7	24.7	24.7	24.7	24.7	24.7	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.51	33.92	30.51	30.51	27.78	27.78
SPP South - Energy Price - 1H2023	6516	11/2/2040	11/2/2040	28.15	28.15	27.78	27.78	27.41	27.78	30.94	30.94	30.94	28.06	28.06	28.06	28.06	28.06	28.06	30.94	30.94	30.94	30.94	30.94	30.94	30.94	25.32	25.32
SPP South - Energy Price - 1H2023	6517	11/3/2040	11/3/2040	25.32	25.32	25.32	25.32	25.32	25.32	36.06	36.06	33.17	33.17	33.17	33.17	33.17	33.17	33.17	36.06	36.06	36.06	36.06	36.06	36.06	36.06	25.32	25.32
SPP South - Energy Price - 1H2023	6518	11/4/2040	11/4/2040	25.32	25.32	25.32	25.32	25.32	25.32	36.06	36.06	36.06	12.23	13.3	12.23	12.23	9.51	7.49	7.34	36.06	36.06	36.06	36.06	36.06	36.06	25.32	25.32
SPP South - Energy Price - 1H2023	6519	11/5/2040	11/5/2040	25.45	25.45	25.45	25.45	25.45	25.45	31.32	25.71	6.62	6.14	5.25	4.88	4.88	5.25	5.25	5.25	5.72	31.32	31.32	31.32	31.32	31.32	25.45	25.45
SPP South - Energy Price - 1H2023	6520	11/6/2040	11/6/2040	29.03	29.03	29.03	29.03	29.03	29.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	35.03	37.14	35.03	35.03	29.03	29.03
SPP South - Energy Price - 1H2023	6521	11/7/2040	11/7/2040	31.9	31.9	31.9	31.9	31.9	31.9	40.9	40.91	40.9	40.9	40.9	40.12	36.7	36.7	36.7	36.7	37.63	40.91	40.91	40.9	40.9	40.9	34.19	35.35
SPP South - Energy Price - 1H2023	6522	11/8/2040	11/8/2040	32.89	32.34	32.34	32.34	32.34	32.34	35.51	35.51	35.51	35.51	32.67	32.67	30.3	32.67	32.67	32.67	35.51	35.51	35.51	35.51	35.51	35.51	29.5	29.5
SPP South - Energy Price - 1H2023	6523	11/9/2040	11/9/2040	25.79	25.79	25.79	25.79	25.79	25.79	31.67	31.67	31.67	20.1	20.1	10.67	10.67	17.93	15.38	31.67	31.67	31.67	31.67	31.67	31.67	31.67	25.79	25.79
SPP South - Energy Price - 1H2023	6524	11/10/2040	11/10/2040	25.79	25.79	25.79	25.79	25.79	25.79	36.72	36.72	36.72	33.31	33.31	33.31	6.88	33.31	7.49	33.31	36.72	36.72	36.72	36.72	36.72	36.72	6.05	6.44
SPP South - Energy Price - 1H2023	6525	11/11/2040	11/11/2040	7.01	7.01	7.01	7.06	7.61	7.01	9.98	10.32	9.33	10.85	10.84	9.98	10.84	9.98	7.49	36.72	36.72	36.72	36.72	36.72	36.72	36.72	25.79	25.79
SPP South - Energy Price - 1H2023	6526	11/12/2040	11/12/2040	24.01	24.01	24.01	24.01	24.01	24.01	29.82	29.82	28.53	27.44	27.44	29.82	27.44	29.82	29.82	29.82	29.82	29.82	29.82	29.82	29.82	29.82	24.01	24.01
SPP South - Energy Price - 1H2023	6527	11/13/2040	11/13/2040	26.99	26.99	26.99	26.99	26.99	26.99	32.91	32.91	32.91	32.91	32.91	32.91	32.91	32.91	32.91	32.91	32.91	34.41	32.91	32.91	32.91	32.91	27.22	28.71
SPP South - Energy Price - 1H2023	6528	11/14/2040	11/14/2040	28.71	28.71	28.71	28.71	28.71	28.71	34.7	37.72	34.7	34.7	34.7	34.7	34.7	36.41	34.7	34.7	37.38	38.63	38.63	38.63	38.63	38.63	32	28.94
SPP South - Energy Price - 1H2023	6529	11/15/2040	11/15/2040	28.64	28.64	28.59	28.54	28.64	28.64	34.19	34.19	34.19	34.19	31.45	31.45	31.45	31.45	31.45	34.19	34.19	34.19	34.19	34.19	34.19	34.19	30.6	30.6
SPP South - Energy Price - 1H2023	6530	11/16/2040	11/16/2040	30.6	30.6	30.6	30.6	30.6	30.6	33.6	37.18	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	37.18	36.13	33.42	33.42	33.42	27.48	30.46
SPP South - Energy Price - 1H2023	6531	11/17/2040	11/17/2040	28.23	28.15	28.15	30.6	30.6	30.6	43.58	43.58	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	43.37	43.58	43.58	43.58	43.58	43.58	30.6	30.6
SPP South - Energy Price - 1H2023	6532	11/18/2040	11/18/2040	30.6	31.46	30.6	30.6	27.48	27.89	39.13	42.54	42.54	42.54	39.13	39.13	39.13	16.84	39.13	39.13	39.13	42.54	42.54	39.13	39.13	39.13	27.48	27.71
SPP South - Energy Price - 1H2023	6533	11/19/2040	11/19/2040	32.07	32.07	32.07	32.07	34.15	35.81	42.58	42.58	39.17	42.58	42.58	40.29	39.17	42.12	42.58	40.23	43.23	43.23	43.23	43.23	43.23	43.23	36.84	36.84
SPP South - Energy Price - 1H2023	6534	11/20/2040	11/20/2040	36.12	36.12	36.12	35.11	36.12	36.12	41.85	41.85	41.85	41.85	41.85	41.74	41.85	41.85	41.85	41.85	41.85	41.85	41.85	41.85	41.85	41.85	35.11	35.11
SPP South - Energy Price - 1H2023	6535	11/21/2040	11/21/2040	34.33	34.33	34.33	34.33	34.33	34.33	41.05	41.05	41.05	41.05	41.05	40.92	40.96	40.83	41.05	40.96	41.05	41.05	41.65	41.05	41.05	41.05	34.33	34.33
SPP South - Energy Price - 1H2023	6536	11/22/2040	11/22/2040	34.33	33.53	33.53	33.53	33.53	33.53	36.83	36.83	36.83	36.83	36.83	33.88	36.83	33.88	33.88	36.83	36.83	36.83	36.83	36.83	36.83	36.83	30.77	30.77
SPP South - Energy Price - 1H2023	6537	11/23/2040	11/23/2040	28.1	28.1	28.1	28.1	28.1	28.1	34.06	34.06	14.79	6.88	6.36	5.56	5.56	5.36	5.56	5.4	4.98	34.06	34.06	34.06	34.06	34.06	28.1	28.1
SPP South - Energy Price - 1H2023	6538	11/24/2040	11/24/2040	28.1	28.1	28.1	28.1	28.1	28.1	40.01	40.01	40.01	36.81	40.01	40.01	38.16	40.01	40.01	40.01	40.01	40.01	40.01	40.01	40.01	40.01	28.1	28.1
SPP South - Energy Price - 1H2023	6539	11/25/2040	11/25/2040	28.1	28.1	28.1	28.1	28.1	28.1	40.01	40.01	40.01	40.01	39.83	40.01	40.01	40.01	39.83	37.25	40.01	40.01	40.01	40.01	40.01	40.01	29.94	28.1
SPP South - Energy Price - 1H2023	6540	11/26/2040	11/26/2040	27.97	27.97	27.97	27.97	27.97	27.97	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	32.28	27.97	27.97
SPP South - Energy Price - 1H2023	6541	11/27/2040	11/27/2040	28.13	28.13	28.13	28.13	28.13	28.13	32.45	32.45	32.45	32.45	32.44	32.44	32.44	32.44	32.44	32.44	32.45	32.45	32.45	32.45	32.45	32.45	28.13	28.13
SPP South - Energy Price - 1H2023	6542	11/28/2040	11/28/2040	28.14	28.14	28.14	28.14	28.14	28.14	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	32.45	28.14	28.14
SPP South - Energy Price - 1H2023	6543	11/29/2040	11/29/2040	30.47	30.47	30.47	30.47	30.47	30.47	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	36.06	34.85	35.78	30.98	30.98
SPP South - Energy Price - 1H2023	6544	11/30/2040	11/30/2040	30.98	30.98	30.98	30.98	30.98	30.98	35.37	35.37	35.84	35.37	35.37	35.37	35.37	35.37	35.37	35.37	35.37	37.44	37.79	37.2	36.6	36.9	33.31	33.18
SPP South - Energy Price - 1H2023	6545	12/1/2040	12/1/2040	50.17	51.71	51.99	51.79	51.13	50.61	58.63	58.63	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	57.08	55.77	54.5	53.76	52.51	47.95	47.95
SPP South - Energy Price - 1H2023	6546	12/2/2040	12/2/2040	47.95	47.95	47.95	47.95	47.95	47.95	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	52.51	53.98	54.79	52.51	52.51	52.51	47.95	47.95
SPP South - Energy Price - 1H2023	6547	12/3/2040	12/3/2040	47.54	47.54	47.54	47.54	47.54	47.54	45.71	45.71	45.71	42.05	45.71	42.57	45.71	45.71	45.71	45.71	45.71	53.36	54.15	53.36	53.36	53.36	52.03	50.87
SPP South - Energy Price - 1H2023	6548	12/4/2040	12/4/2040	51.22	52.03	52.23	52.03	51.5	52.03	50.46	53.85	49.32	48.85	48.41	48.16	46.27	46.27	46.27	46.27	46.27	48.85	48.85	48.85	48.85	48.79	51.71	50.56
SPP South - Energy Price - 1H2023	6549	12/5/2040	12/5/2040	49.47	52.17	52.24	51.71	51.39	52.13	51.81	52.76	52.08	49.95	50	47.7	47.66	47.38	47.66	47.66	47.66	51.25	53.32	53.13	52.4	52.06	54.91	52.8
SPP South - Energy Price - 1H2023	6550	12/6/2040	12/6/2040	54.63	55.53	55.6	55.44	54.91	54.12	50.86	50.86	50.86	50.86	49.23	49.23	49.23	49.23	49.23	49.23	49.23	51.12	51.13	50.86	49.23	50.86	51.6	51.6
SPP South - Energy Price - 1H2023	6551	12/7/2040	12/7/2040	47.08	47.08	47.08	47.08	47.08	47.08	45.31	45.31	45.31	45.31	45.3	45.3	45.3	41.68	45.3	45.3	45.31	45.31	45.31	45.31	45.31	45.31	47.08	47.08
SPP South - Energy Price - 1H2023	6552	12/8/2040	12/8/2040	47.08	47.08	47.08	47.08	47.08	47.08	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	47.08	47.08
SPP South - Energy Price - 1H2023	6553	12/9/2040	12/9/2040	47.08	47.08	47.08	47.08	47.08	47.08	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	51.55	52.12	51.55	51.55	51.55	47.08	47.08
SPP South - Energy Price - 1H2023	6554	12/10/2040	12/10/2040	46.73	46.73	46.73	46.73	46.73	46.73	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	42.97	45.01	45.01	45.01	45.01	45.01	45.01	45.01	46.73	46.73
SPP South - Energy Price - 1H2023	6555	12/11/2040	12/11/2040	45.74	45.74	45.74	45.74	45.74	45.74	44.15	44.15	44.15	44.14	44.14	44.14	44.14	44.14	44.14	44.14	44.14	44.15	44.15	44.15	44.15	44.15	45.74	45.74
SPP South - Energy Price - 1H2023	6556	12/12/2040	12/12/2040	44.72	44.72	44.72	44.72	44.72	44.72	43.26	43.26	43.26	43.26	43.26	43.26	43.26	43.26	43.26	43.26	43.26	43.26	44.95	44.81	44.83	43.26	48.24	44.72

SPP South - Energy Price - 1H2023	6557	12/13/2040	12/13/2040	42.23	42.23	42.23	42.23	42.23	42.23	41.1	41.1	41.1	41.1	37.82	37.81	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	42.23	42.23
SPP South - Energy Price - 1H2023	6558	12/14/2040	12/14/2040	39.99	39.99	39.99	39.99	39.99	39.99	39.16	41.09	40.07	39.16	39.16	39.16	39.16	39.16	39.16	39.16	39.16	45.09	44.06	45.87	44.06	44.06	44.5	43.32
SPP South - Energy Price - 1H2023	6559	12/15/2040	12/15/2040	44.5	42.35	42.35	41.93	42.35	42.88	47.23	48.73	48.73	48.73	46.54	46.22	45.57	45.78	46.38	45.91	48.73	49.9	49.9	49.9	49.9	48.73	44.5	43.32
SPP South - Energy Price - 1H2023	6560	12/16/2040	12/16/2040	43.02	41.96	41.96	41.96	42.67	41.96	45.94	46.73	48.73	48.73	46.54	46.22	45.57	45.78	45.94	45.7	46.41	48.73	48.73	48.73	50.09	50.09	44.5	44.5
SPP South - Energy Price - 1H2023	6561	12/17/2040	12/17/2040	44.61	44.96	44.96	44.96	44.83	44.23	42.66	46.27	42.95	42.95	39.51	39.51	39.51	39.51	39.51	39.51	39.51	42.95	42.95	42.95	43.76	45.41	44.96	44.73
SPP South - Energy Price - 1H2023	6562	12/18/2040	12/18/2040	40.71	40.71	40.71	40.71	40.71	40.71	39.78	39.78	39.78	39.78	36.91	36.6	7.08	36.6	36.6	39.78	39.78	39.78	39.78	39.78	39.78	39.78	40.71	40.71
SPP South - Energy Price - 1H2023	6563	12/19/2040	12/19/2040	40.71	40.71	38.57	38.57	38.57	40.71	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	40.35	38.57
SPP South - Energy Price - 1H2023	6564	12/20/2040	12/20/2040	40.35	40.35	40.35	40.35	40.35	40.35	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	39.47	40.35	40.35
SPP South - Energy Price - 1H2023	6565	12/21/2040	12/21/2040	40.2	40.2	40.2	40.2	40.2	40.2	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	39.34	40.2	40.2
SPP South - Energy Price - 1H2023	6566	12/22/2040	12/22/2040	40.2	40.2	40.2	40.2	43.51	42.86	47.46	47.85	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	40.2	40.2
SPP South - Energy Price - 1H2023	6567	12/23/2040	12/23/2040	40.2	40.2	40.2	40.2	40.2	40.2	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	44.02	47.17	48.99	48.99	48.99	48.99	44.74	44.74
SPP South - Energy Price - 1H2023	6568	12/24/2040	12/24/2040	43.59	43.59	43.59	43.59	43.59	43.59	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	43.59	43.59
SPP South - Energy Price - 1H2023	6569	12/25/2040	12/25/2040	43.59	43.59	43.59	43.59	43.59	43.59	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	42.28	43.59	43.59
SPP South - Energy Price - 1H2023	6570	12/26/2040	12/26/2040	37.19	37.19	37.19	37.19	37.19	37.19	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	36.73	37.19	37.19
SPP South - Energy Price - 1H2023	6571	12/27/2040	12/27/2040	46.41	46.41	46.41	46.41	46.41	46.41	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	44.73	47.3	46.73	46.45	44.73	44.73	46.41	46.41
SPP South - Energy Price - 1H2023	6572	12/28/2040	12/28/2040	44.9	44.9	44.9	44.9	44.9	44.9	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	43.42	44.9	44.9
SPP South - Energy Price - 1H2023	6573	12/29/2040	12/29/2040	44.9	44.9	44.9	44.9	44.9	44.9	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	49.17	44.9	44.9
SPP South - Energy Price - 1H2023	6574	12/30/2040	12/30/2040	44.9	44.9	44.9	44.9	44.9	44.9	49.17	49.17	49.17	49.17	47.51	49.17	47.51	47.51	49.17	49.17	47.51	49.17	49.17	49.17	49.17	49.17	44.9	44.9
SPP South - Energy Price - 1H2023	6575	12/31/2040	12/31/2040	43.38	43.38	43.38	43.38	43.38	43.38	42.1	42.1	42.1	42.1	40.18	37.69	14.68	14.29	10.71	14.68	11.25	42.1	42.1	42.1	42.1	42.1	43.38	43.38
SPP South - Energy Price - 1H2023	6576	1/1/2041	1/1/2041	43.52	43.52	43.52	43.52	43.52	43.52	46.24	46.24	46.24	46.24	42.54	46.24	46.24	46.24	46.24	46.24	46.24	46.24	46.24	46.24	46.24	46.24	43.52	43.52
SPP South - Energy Price - 1H2023	6577	1/2/2041	1/2/2041	41	41	41	41	41	41	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	43.83	41	41
SPP South - Energy Price - 1H2023	6578	1/3/2041	1/3/2041	40.6	40.6	40.6	40.6	40.6	40.6	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	43.45	40.6	40.6
SPP South - Energy Price - 1H2023	6579	1/4/2041	1/4/2041	37.66	37.66	37.66	37.66	37.66	37.66	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	40.63	37.66	37.66
SPP South - Energy Price - 1H2023	6580	1/5/2041	1/5/2041	37.66	37.66	37.66	37.66	37.66	37.66	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	37.66	37.66
SPP South - Energy Price - 1H2023	6581	1/6/2041	1/6/2041	37.66	37.66	37.66	37.66	37.66	37.66	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	45.37	37.66	37.66
SPP South - Energy Price - 1H2023	6582	1/7/2041	1/7/2041	43.26	43.26	43.26	43.26	43.26	43.26	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	43.26	43.26
SPP South - Energy Price - 1H2023	6583	1/8/2041	1/8/2041	46.64	46.64	46.64	46.64	46.64	46.64	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	49.21	46.64	46.64
SPP South - Energy Price - 1H2023	6584	1/9/2041	1/9/2041	45.39	45.39	45.39	45.39	45.39	45.39	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	48.02	45.39	45.39
SPP South - Energy Price - 1H2023	6585	1/10/2041	1/10/2041	44.13	44.13	44.13	44.13	44.13	44.13	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	44.13	44.13
SPP South - Energy Price - 1H2023	6586	1/11/2041	1/11/2041	45.07	45.07	45.07	45.07	45.07	45.07	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	47.71	45.07	45.07
SPP South - Energy Price - 1H2023	6587	1/12/2041	1/12/2041	45.07	45.07	45.07	45.07	45.07	45.07	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	45.07	45.07
SPP South - Energy Price - 1H2023	6588	1/13/2041	1/13/2041	45.07	45.07	45.07	45.07	45.07	45.07	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	45.07	45.07
SPP South - Energy Price - 1H2023	6589	1/14/2041	1/14/2041	44.86	44.86	44.86	44.86	44.86	44.86	47.51	47.51	47.51	47.51	47.51	47.51	47.51	47.51	42.52	47.51	47.51	47.51	47.51	47.51	47.51	47.51	44.85	44.85
SPP South - Energy Price - 1H2023	6590	1/15/2041	1/15/2041	51.78	51.78	51.78	51.78	51.78	51.78	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	54.12	51.78	51.78
SPP South - Energy Price - 1H2023	6591	1/16/2041	1/16/2041	54.41	54.41	54.41	54.41	54.41	54.41	56.63	56.63	56.63	56.63	56.63	56.63	56.63	52.1	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	54.41	54.41
SPP South - Energy Price - 1H2023	6592	1/17/2041	1/17/2041	48.75	48.75	48.75	48.75	48.75	48.75	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	51.23	48.75	48.75
SPP South - Energy Price - 1H2023	6593	1/18/2041	1/18/2041	48.4	48.4	48.4	48.4	48.4	48.4	50.89	50.89	10.3	8.11	8.11	8.11	7.41	6.93	8.11	8.11	8.11	50.89	50.89	50.89	50.89	50.89	48.4	48.4
SPP South - Energy Price - 1H2023	6594	1/19/2041	1/19/2041	48.4	48.4	48.4	48.4	48.4	48.4	58.32	58.32	58.32	58.32	19.63	19.63	19.63	8.9	19.63	19.63	58.32	58.32	58.32	58.32	58.32	58.32	48.4	48.4
SPP South - Energy Price - 1H2023	6595	1/20/2041	1/20/2041	48.4	48.4	48.4	48.4	48.4	48.4	58.32	58.32	58.32	58.32	58.32	57.32	58.32	58.32	58.32	58.32	58.32	58.32	58.32	58.32	58.32	58.32	48.4	48.4
SPP South - Energy Price - 1H2023	6596	1/21/2041	1/21/2041	41.53	41.53	41.53	41.53	41.53	41.53	44.33	44.33	44.33	44.33	44.33	44.33	40.79	40.79	44.33	44.33	44.33	44.33	44.33	44.33	44.33	44.33	41.53	41.53
SPP South - Energy Price - 1H2023	6597	1/22/2041	1/22/2041	40.44	40.44	40.44	40.44	40.44	40.44	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	43.29	40.44	40.44
SPP South - Energy Price - 1H2023	6598	1/23/2041	1/23/2041	37.95	37.95	37.95	37.95	37.95	37.95	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	40.91	37.95	37.95
SPP South - Energy Price - 1H2023	6599	1/24/2041	1/24/2041	42.43	42.43	42.43	42.43	42.43	42.43	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	45.19	42.43	42.43
SPP South - Energy Price - 1H2023	6600	1/25/2041	1/25/2041	48.09	48.09	48.09	48.09	48.09	48.09	50.59	50.59	50.59	50.59	50.59	50.59	50.59	46.55	50.59	46.55	46.55	50.59	50.59	50.59	50.59	50.59	48.09	48.09
SPP South - Energy Price - 1H2023	6601	1/26/2041	1/26/2041	48.09	48.09	48.09	48.09	48.09	48.09	57.94	57.94	57.94	55.44	19.86	19.86	13.93	18.3	7.83	19.86	19.86	57.94	57.94	57.94	57.94	57.94	48.09	48.09
SPP South - Energy Price - 1H2023	6602	1/27/2041	1/27/2041	48.09	48.09	48.09	48.09	48.09	48.09	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	57.94	48.09	48.09
SPP South - Energy Price - 1H2023	6603	1/28/2041	1/28/2041	42.93	42.93	42.93	42.93	42.93	42.93	45.67	45.67	45.67	45.67	43.75	22.67	22.67	22.67	20.44	6.09	22.67	45.67	45.67	45.67	45.67	45.67	42.93	42.93
SPP South - Energy Price - 1H2023	6604	1/29/2041	1/29/2041	42.05	42.05	42.05	42.05	42.05	42.05	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	44.83	42.05	42.05
SPP South - Energy Price - 1H2023	6605	1/30/2041	1/30/2041	41.34	41.34	41.34	41.34	41.34	41.34	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	44.15	41.34	41.34
SPP South - Energy Price - 1H2023	6606	1/31/2041	1/31/2041	41.75	41.75	41.75	41.75	41.75	41.75	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	44.92	42.52
SPP South - Energy Price - 1H2023	6607	2/1/2041	2/1/2041	21.21	21.21	21.21	21.21	21.21	21.21	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	39.57	22.14	21.21
SPP South - Energy Price - 1H2023	6608	2/2/2041	2/2/2041	21.21	21.21	21.21	21.21	21.21	21.21	33.89	33.89	33.89	33.89	31.37	31.37	31.37	31.37	31.37	10.59	10.55	33.89	33.89	33.89	33.89	33.89	21.21	21.21
SPP South - Energy Price - 1H2023	6609	2/3/2041	2/3/2041	21.21	21.21	21.21	21.21	21.21	21.21	33.89	33.89	33.89	33.89	33.89	33.89	33.89	33.89	33.89	33.89	33.89	33.89	34.07	34.1	34.1	33.89	21.21	21.21
SPP South - Energy Price - 1H2023	6610	2/4/2041	2/4/2041	19.64	19.64	19.64	19.64	19.64	19.64	37	37	37	37	37	37	34.04	22.71	19.65	34.04	37	37	37	37	37	37	19.64	19.64
SPP South - Energy Price - 1H2023	6611	2/5/2041	2/5/2041	19.57	19.57	19.57	19.57	19.57	19.57	36.89	36.89	36.89	36.89	36.89	36.89	33.93	13.73	17.83	17.46	33.93	36.89	36.89	36.89	36.89	36.89	19.57	19.57
SPP South - Energy Price - 1H2023	6612	2/6/2041	2/6/2041	20.19	20.19	20.19	20.19	20.19	20.19	37.91	37.91	37.91	6.16	0.96	0.96	0.96	0.93	0.89	0.96	0.96	4.34	37.91	37.91	37.91	37.91	20.19	20.19
SPP South - Energy Price - 1H2023	6613	2/7/2041	2/7/2041	20.11	20.11	20.11	20.11	20.11	20.11	37.78	37.78	37.78	37.78	37.78	36.13	34.76	34.76	29.14	32.52	34.76	37.78	37.78	37.78	37.78	37.78	20.11	20.11
SPP South - Energy Price - 1H2023	6614	2/8/2041	2/8/2041	19.38	19.38	19.38	19.38	19.38	19.38	36.58	36.58	36.58	36.58	36.58	36.58	35.39	4.93	33.65	4.88	33.65	36.58	36.58	36.58	36.58	36.58	19.38	19.37
SPP South - Energy Price - 1H2023	6615	2/9/2041	2/9/2041	19.38	19.37	19.38	19.37	19.38	19.38	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	19.38	19.37
SPP South - Energy Price - 1H2023	6616	2/10/2041	2/10/2041	19.37	19.38	19.37	19.37	19.38	19.38	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	30.96	19.38	19.38
SPP South - Energy Price - 1H2023	6617	2/11/2041	2/11/2041	22.89	22.89	22.89	22.89	22.89	22.89	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	22.89	22.89
SPP South - Energy Price - 1H2023	6618	2/12/2041	2/12/2041	22.84	22.84	22.84	22.84	22.84	22.84	42.22	42.22	42.22	42.22	42.22	38.84	38.84	42.22	36.47	38.84	41.43	42.22	42.22	42.22	42.22	42.22	22.84	22.84
SPP South - Energy Price - 1H2023	6619	2/13/2041	2/13/2041	29.96	29.96	29.96	29.96	29.96	29.96	53.82	53.82	34.2	6.16	5.47	5.11	4.98	4.93	4.88	4.88	5.11	53.82	53.82	53.82	53.82	53.82	29.96	29.96
SPP South - Energy Price - 1H2023	6620	2/14/2041	2/14/2041	24.05	24.05	24.05	24.05	24.05	24.05	44.2	44.2	41.59	38.22	36.99	5.68	5.6	4.93	29.7	32.9	32.9	44.2	44.2	44.2	44.2	44.2	24.05	24.05
SPP South - Energy Price - 1H2023	6621	2/15/2041	2/15/2041	22.26	22.26	22.26	22.26	22.26	22.26	41.28	41.28	41.28	41.28	17.73	14.26	14.26	4.93	17.73	17.73	18.83	41.28	41.28	41.28	41.28	41.28	22.26	22.26
SPP South - Energy Price - 1H2023	6622	2/16/2041	2/16/2041	22.26	22.26	22.26	22.26	22.26	22.26	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	22.26	22.26
SPP South - Energy Price - 1H2023	6623	2/17/2041	2/17/2041	22.26	22.26	22.26	22.26	22.26	22.26	35.57	35.57	35.57	35.57	35.57	35.57	35.57	11.16	35.57	35.57	35.57	35.57	35.57	35.57	35.57	35.57	22.26	22.26
SPP South - Energy Price - 1H2023	6624	2/18/2041	2/18/2041	20.7	22.57	22.52	22.58	22.61	22.63	42.82	43.41	41.57	41.57	41.57	41.57	41.57	41.57	41.57	41.57	41.57	41.57	42.82	42.82	42.82	42.82	22.65	22.39
SPP South - Energy Price - 1H2023	6625	2/19/2041	2/19/2041	24.02	24.02	24.02	24.02	24.02	24.02	44.71	45.05	43.56	43.56	41.81	40.07	42.16	40.2	40.07	40.07	41.88	43.56	43.56	43.56	43.56	43.56	21.51	21.51
SPP South - Energy Price - 1H2023	6626	2/20/2041	2/20/2041	20.02	20.02	20.02	20.02	20.02	21.76	41.1	41.1	41.1	34.63	5.86	5.86	5.24	5.49	5.63	5.86	5.86	41.1	41.1	41.1	41.1	41.1	20.02	20.02
SPP South - Energy Price - 1H2023	6627	2/21/2041	2/21/2041	21.08	21.08	21.08	21.08	21.08	21.08	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	39.84	40.19	39.84	21.39	21.08
SPP South - Energy Price - 1H2023	6628	2/22/2041	2/22/2041	20.6	20.47	20.47	20.47	20.47	20.88	38.85	39.77	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	38.85	20.47	20.47
SPP South - Energy Price - 1H2023	6629	2/23/2041	2/23/2041	20.47	20.47	20.47	20.47	20.47	20.47	32.7	32.7	5.85	5.68	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.55	32.7	32.7	32.7	32.7	20.47	20.47
SPP South - Energy Price - 1H2023	6630	2/24/2041	2/24/2041	20.47	20.47	20.47	20.47	20.47	20.47	32.7	32.7	32.7	5.66	5.12	5.14	5.26	5.51	5.66	5.88	5.76	5.66	32.7	32.7	32.7	32.7	20.46	20.46
SPP South - Energy Price - 1H2023	6631	2/25/2041	2/25/2041	21.74	21.74	21.74	21.74	21.74	21.74	36.32	34.58	5.83	5.66	31.01	33.7	31.01	33.7	31.01	7.04	10.89	40.46	40.92	40.92	40.92	40.92	21.74	21.74
SPP South - Energy Price - 1H2023	6632	2/26/2041	2/26/2041	19.82	19.82	19.82	19.82	19.82	19.82	37.8	37.8	37.8	32.1	5.1	5.12	5.24	5.49	5.63	5.86	5.74	5.63	37.8	37.8	37.8	37.8	19.82	19.82
SPP South - Energy Price - 1H2023	6633	2/27/2041	2/27/2041	21.91	21.91	21.91	21.91	21.91	21.91	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	21.91	21.91
SPP South - Energy Price - 1H2023	6634	2/28/2041	2/28/2041	20.99	20.99	20.99	20.99	20.99	20.99	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	5.86	39.7	39.7	39.7	39.7	39.7	39.7	20.99	20.99
SPP South - Energy Price - 1H2023	6635	3/1/2041	3/1/2041	16.75	16.75	16.75	16.75	16.75	16.75	21.36	21.36	21.36	21.36	21.36	19.34	19.46	3.39	3.04	5.05	19.34	21.36	21.36	21.36	21.36	21.36	16.75	16.75
SPP South - Energy Price - 1H2023	6636	3/2/2041	3/2/2041	16.75	16.75	16.75	16.75	16.75	16.75	19.67	19.67	18.09	18.09	3.5	3.31	18.09	18.09	19.67	19.67	19.67	19.67	19.67	19.67	19.67	19.67	16.75	16.75
SPP South - Energy Price - 1H2023	6637	3/3/2041	3/3/2041	16.75	16.75	16.75	16.75	16.75	16.75	19.67	19.67	19.67	19.67	19.67	19.67	19.67	18.09	18.09	19.45	19.67	19.67	19.67	19.67	19.67	19.67	16.75	16.75
SPP South - Energy Price - 1H2023	6638	3/4/2041	3/4/2041	15.55	15.55	15.55	15.55	15.55	15.55	20.04	20.04	20.04	3.09	3.09	3.09	2.82	2.96	3.09	3.16	3.09	3.09	20.04	20.04	20.04	20.04	15.55	15.55
SPP South - Energy Price - 1H2023	6639	3/5/2041	3/5/2041	16.11	16.11	16.11	16.11	16.11	16.11	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	20.65	16.11	16.11

SPP South - Energy Price - 1H2023	6640	3/6/2041	3/6/2041	16.52	16.52	16.52	16.52	16.52	16.52	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	21.11	16.52	16.52
SPP South - Energy Price - 1H2023	6641	3/7/2041	3/7/2041	17.43	17.43	17.43	17.43	17.43	17.5	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	22.11	17.43	17.43
SPP South - Energy Price - 1H2023	6642	3/8/2041	3/8/2041	16.36	16.36	16.36	16.36	16.36	16.36	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.93	16.36	16.36
SPP South - Energy Price - 1H2023	6643	3/9/2041	3/9/2041	16.36	16.36	16.36	16.36	16.36	16.36	19.21	19.21	19.21	3.34	3.01	3.02	0	3.24	3.33	3.33	3.39	19.21	19.21	19.21	19.21	19.21	16.36	16.36
SPP South - Energy Price - 1H2023	6644	3/10/2041	3/10/2041	16.36	16.36	16.36	16.36	16.36	16.36	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	19.21	16.36	16.36
SPP South - Energy Price - 1H2023	6645	3/11/2041	3/11/2041	17.16	17.16	17.16	17.16	17.16	17.16	20.83	20.83	20.83	20.83	20.83	20.83	19.16	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	17.16	17.16
SPP South - Energy Price - 1H2023	6646	3/12/2041	3/12/2041	17.06	17.06	17.06	17.06	17.06	17.06	20.72	20.72	20.09	20.09	20.09	18.48	18.48	8.17	18.48	8.16	18.48	18.48	20.09	20.72	20.72	20.72	17.06	17.06
SPP South - Energy Price - 1H2023	6647	3/13/2041	3/13/2041	16.82	16.82	16.82	16.82	16.82	16.82	20.45	20.45	20.45	3.05	3.04	2.76	2.82	2.96	3.04	3.04	6.74	8.79	20.45	20.45	20.45	20.45	16.82	16.82
SPP South - Energy Price - 1H2023	6648	3/14/2041	3/14/2041	20.28	20.28	20.28	20.28	20.28	20.28	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	20.28	20.28
SPP South - Energy Price - 1H2023	6649	3/15/2041	3/15/2041	18.26	18.26	18.26	18.26	18.26	18.26	21.96	21.28	3.14	3.05	2.75	0.42	0.48	3.14	13.48	13.51	12.43	21.96	21.96	21.96	21.96	21.96	18.26	18.26
SPP South - Energy Price - 1H2023	6650	3/16/2041	3/16/2041	18.26	18.26	18.26	18.26	18.26	18.26	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	21.44	18.26	18.26
SPP South - Energy Price - 1H2023	6651	3/17/2041	3/17/2041	18.26	18.26	18.26	18.26	18.26	18.26	21.44	21.44	21.44	21.44	21.44	21.44	21.44	20.53	21.44	17.68	21.44	21.44	21.44	21.44	21.44	21.44	18.26	18.26
SPP South - Energy Price - 1H2023	6652	3/18/2041	3/18/2041	18.74	18.74	18.74	18.74	18.74	18.74	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	22.48	18.74	18.74
SPP South - Energy Price - 1H2023	6653	3/19/2041	3/19/2041	17.56	17.56	17.56	17.56	17.56	17.56	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	21.19	17.56	17.56
SPP South - Energy Price - 1H2023	6654	3/20/2041	3/20/2041	16.64	16.64	16.64	16.64	16.64	16.64	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	16.64	16.64
SPP South - Energy Price - 1H2023	6655	3/21/2041	3/21/2041	15.93	15.93	15.93	15.93	15.93	15.93	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	15.93	15.93
SPP South - Energy Price - 1H2023	6656	3/22/2041	3/22/2041	14.56	14.56	14.56	14.56	14.56	14.56	18.69	18.69	15.62	15.62	15.62	7.47	7.47	16.63	15.62	18.69	18.69	18.69	18.69	18.69	18.69	18.69	14.56	14.56
SPP South - Energy Price - 1H2023	6657	3/23/2041	3/23/2041	14.56	14.56	14.56	14.56	14.56	14.56	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	14.56	14.56
SPP South - Energy Price - 1H2023	6658	3/24/2041	3/24/2041	14.56	14.56	14.56	14.56	14.56	14.56	17.1	17.1	17.1	4.31	0	0	0	0	0	0	0	4.85	17.1	17.1	17.1	17.1	14.56	13.4
SPP South - Energy Price - 1H2023	6659	3/25/2041	3/25/2041	14.56	13.81	13.81	13.81	14.56	15.13	19.32	5.5	4.09	3.94	4.97	5.5	5.98	5.98	5.89	5.5	19.32	19.32	19.32	19.32	19.32	19.32	15.14	15.14
SPP South - Energy Price - 1H2023	6660	3/26/2041	3/26/2041	16.04	16.04	16.04	16.04	16.04	16.04	20.31	20.31	20.31	20.31	20.31	5.63	16.88	17.48	7.68	4.45	20.31	20.31	20.31	20.31	20.31	20.31	16.04	16.04
SPP South - Energy Price - 1H2023	6661	3/27/2041	3/27/2041	16.21	16.21	16.21	16.21	16.21	16.21	20.51	20.5	20.5	18.86	18.86	17.66	18.86	18.86	19.1	20.5	20.5	20.5	20.5	20.5	20.5	20.5	16.21	16.21
SPP South - Energy Price - 1H2023	6662	3/28/2041	3/28/2041	16.4	16.4	16.4	16.4	16.4	16.4	20.71	20.71	20.71	20.71	20.71	20.71	20.71	20.71	20.71	19.06	20.71	20.71	20.71	20.71	20.71	20.71	16.4	16.4
SPP South - Energy Price - 1H2023	6663	3/29/2041	3/29/2041	15.31	15.31	15.31	15.31	15.31	15.31	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	19.52	15.31	15.31
SPP South - Energy Price - 1H2023	6664	3/30/2041	3/30/2041	15.31	15.31	15.31	15.31	15.31	15.31	17.98	17.98	17.98	16.54	17.98	5.45	5.45	4.56	4.56	4.88	5.37	17.98	17.98	17.98	17.98	17.98	15.31	15.31
SPP South - Energy Price - 1H2023	6665	3/31/2041	3/31/2041	15.31	15.31	15.31	15.31	15.31	15.31	17.98	17.98	16.54	16.54	17.98	16.54	17.98	17.98	16.54	17.98	17.98	17.98	17.98	17.98	17.98	17.98	15.31	15.31
SPP South - Energy Price - 1H2023	6666	4/1/2041	4/1/2041	5.01	5.01	5.01	5.01	5.01	5.01	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.93	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	5.01	5.01
SPP South - Energy Price - 1H2023	6667	4/2/2041	4/2/2041	5.12	5.12	5.12	5.12	5.12	5.12	2.14	1.95	0.67	0.4	0.4	0.4	0.67	0.72	0.67	0.68	0.67	2.14	2.14	2.14	2.14	2.14	5.12	5.12
SPP South - Energy Price - 1H2023	6668	4/3/2041	4/3/2041	5.39	5.39	5.39	5.39	5.39	5.39	2.24	2.24	1.88	1.88	1.88	1.73	1.76	1.49	2.04	2.24	2.14	2.24	2.24	2.24	2.24	2.24	5.39	5.39
SPP South - Energy Price - 1H2023	6669	4/4/2041	4/4/2041	5.22	5.22	5.22	5.22	5.22	5.22	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	5.22	5.22
SPP South - Energy Price - 1H2023	6670	4/5/2041	4/5/2041	5.13	5.13	5.13	5.13	5.13	5.13	2.15	2.15	0.75	0.65	0.65	0.65	0.65	0.15	0.65	0.65	0.47	0.65	1.8	2.15	2.15	2.15	5.13	5.13
SPP South - Energy Price - 1H2023	6671	4/6/2041	4/6/2041	5.13	5.13	5.13	5.13	5.13	5.13	6.5	6.5	0.16	0	0	0	0	0	0	0	0.18	1.63	6.5	6.5	6.5	6.5	5.13	5.13
SPP South - Energy Price - 1H2023	6672	4/7/2041	4/7/2041	5.13	5.13	5.13	5.13	5.13	5.13	6.5	6.5	6.5	5.98	5.98	5.98	1.81	5.98	5.98	5.98	6.5	6.5	7.03	6.5	6.5	6.5	5.13	5.13
SPP South - Energy Price - 1H2023	6673	4/8/2041	4/8/2041	5.11	5.11	5.11	5.11	5.11	5.11	2.14	2.14	2.14	2.14	2.14	2.14	0.89	0.61	0.89	1.79	1.79	2.14	2.14	2.14	2.14	2.14	5.11	5.11
SPP South - Energy Price - 1H2023	6674	4/9/2041	4/9/2041	5.19	5.19	5.19	5.19	5.19	5.19	2.17	2.17	2.17	1.98	1.81	0.88	0.88	0.88	0.88	0.88	0.88	2.17	2.17	2.17	2.17	2.17	5.19	5.19
SPP South - Energy Price - 1H2023	6675	4/10/2041	4/10/2041	5.26	5.26	5.26	5.26	5.26	5.26	2.19	1.98	0.42	0.4	0.4	0.46	0.42	0.43	0.49	1.16	2.19	2.19	2.19	2.19	2.19	2.19	5.26	5.26
SPP South - Energy Price - 1H2023	6676	4/11/2041	4/11/2041	5.16	5.16	5.16	5.16	5.16	5.16	2.07	1.96	0.9	0.46	0.4	0.46	0.46	0.43	0.43	0.46	0.47	0.9	1.03	2.07	2.07	2.07	5.16	5.16
SPP South - Energy Price - 1H2023	6677	4/12/2041	4/12/2041	5.05	5.05	5.05	5.05	5.05	5.05	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	5.05	5.05
SPP South - Energy Price - 1H2023	6678	4/13/2041	4/13/2041	5.05	5.05	5.05	5.05	5.05	5.05	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	5.05	5.05
SPP South - Energy Price - 1H2023	6679	4/14/2041	4/14/2041	5.05	5.05	5.05	5.05	5.05	5.05	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	5.05	5.05
SPP South - Energy Price - 1H2023	6680	4/15/2041	4/15/2041	4.98	4.98	4.98	4.98	4.98	4.98	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	4.98	4.98
SPP South - Energy Price - 1H2023	6681	4/16/2041	4/16/2041	5.05	5.05	5.05	5.05	5.05	5.05	2.03	2.03	2.03	2.03	2.03	2.03	2.03	1.87	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	5.05	5.05
SPP South - Energy Price - 1H2023	6682	4/17/2041	4/17/2041	4.94	4.94	4.94	4.94	4.94	4.94	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	4.94	4.94
SPP South - Energy Price - 1H2023	6683	4/18/2041	4/18/2041	4.9	4.9	4.9	4.9	4.9	4.9	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	4.9	4.9
SPP South - Energy Price - 1H2023	6684	4/19/2041	4/19/2041	4.83	4.83	4.83	4.83	4.83	4.83	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	4.83	4.83
SPP South - Energy Price - 1H2023	6685	4/20/2041	4/20/2041	4.83	4.83	4.83	4.83	4.83	4.83	6.11	6.11	6.11	6.11	1.54	1.54	1.51	1.54	1.54	1.64	1.7	6.11	6.11	6.11	6.11	6.11	4.83	4.83
SPP South - Energy Price - 1H2023	6686	4/21/2041	4/21/2041	4.83	4.83	4.83	4.83	4.83	4.83	6.11	6.11	5.63	1.45	1.44	5.63	5.63	5.63	6.11	5.63	6.11	6.11	6.11	6.11	6.11	6.11	4.83	4.83
SPP South - Energy Price - 1H2023	6687	4/22/2041	4/22/2041	5.03	5.03	5.03	5.03	5.03	5.03	2.02	1.76	1.62	0.79	0.79	1.62	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	5.03	5.03
SPP South - Energy Price - 1H2023	6688	4/23/2041	4/23/2041	5.1	5.1	5.1	5.1	5.1	5.1	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	5.1	5.1
SPP South - Energy Price - 1H2023	6689	4/24/2041	4/24/2041	5.08	5.08	5.08	5.08	5.08	5.08	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	5.08	5.08
SPP South - Energy Price - 1H2023	6690	4/25/2041	4/25/2041	4.93	4.93	4.93	4.93	4.93	4.93	1.99	1.99	1.99	1.99	1.83	1.99	1.99	1.99	1.99	0.68	1.72	1.99	1.99	1.99	1.99	1.99	4.93	4.93
SPP South - Energy Price - 1H2023	6691	4/26/2041	4/26/2041	4.81	4.81	4.81	4.81	4.81	4.81	1.94	1.83	0.22	0.3	0.32	0.32	0.32	0.39	0.44	1.94	1.94	1.94	1.94	1.94	1.94	1.94	4.81	4.81
SPP South - Energy Price - 1H2023	6692	4/27/2041	4/27/2041	4.81	4.81	4.81	4.81	4.81	4.81	6.09	6.09	6.09	5.6	1.82	5.6	1.82	5.6	5.6	5.6	5.6	6.09	6.09	6.09	6.09	6.09	4.81	4.81
SPP South - Energy Price - 1H2023	6693	4/28/2041	4/28/2041	4.81	4.81	4.81	4.81	4.81	4.81	6.09	1.77	1.28	1.33	1.77	1.02	1.77	1.77	2.62	6.09	6.09	6.09	6.09	6.09	6.09	6.09	4.81	4.81
SPP South - Energy Price - 1H2023	6694	4/29/2041	4/29/2041	4.77	4.77	4.77	4.77	4.77	4.77	1.93	1.93	0.77	0.84	0.69	0.69	0.69	0.39	0.69	0.68	0.69	1.93	1.93	1.93	1.93	1.93	4.77	4.77
SPP South - Energy Price - 1H2023	6695	4/30/2041	4/30/2041	4.85	4.85	4.85	4.85	4.85	4.85	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.8	1.8	1.96	1.96	1.96	1.96	1.96	1.96	4.85	4.85
SPP South - Energy Price - 1H2023	6696	5/1/2041	5/1/2041	7.89	7.89	7.89	7.89	7.89	7.89	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	4.68	5.09	5.09	5.09	5.09	5.09	7.89	7.89
SPP South - Energy Price - 1H2023	6697	5/2/2041	5/2/2041	8.14	8.14	8.14	8.14	8.14	8.14	5.23	4.72	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	5.09	5.23	5.23	5.23	5.23	8.14	8.14
SPP South - Energy Price - 1H2023	6698	5/3/2041	5/3/2041	8.1	8.1	8.1	8.1	8.1	8.1	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	8.1	8.1
SPP South - Energy Price - 1H2023	6699	5/4/2041	5/4/2041	8.1	8.1	8.1	8.1	8.1	8.1	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	8.1	8.1
SPP South - Energy Price - 1H2023	6700	5/5/2041	5/5/2041	8.1	8.1	8.1	8.1	8.1	8.1	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	8.1	8.1
SPP South - Energy Price - 1H2023	6701	5/6/2041	5/6/2041	8.24	8.24	8.24	8.24	8.24	8.24	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	8.24	8.24
SPP South - Energy Price - 1H2023	6702	5/7/2041	5/7/2041	8.57	8.57	8.57	8.57	8.57	8.57	5.47	5.47	5.47	5.47	5.03	5.03	5.03	5.47	5.47	5.47	5.47	5.47	5.47	5.47	5.47	5.47	8.57	8.57
SPP South - Energy Price - 1H2023	6703	5/8/2041	5/8/2041	8.7	8.7	8.7	8.7	8.7	8.7	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	8.7	8.7
SPP South - Energy Price - 1H2023	6704	5/9/2041	5/9/2041	8.77	8.77	8.77	8.77	8.77	8.77	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	8.77	8.77
SPP South - Energy Price - 1H2023	6705	5/10/2041	5/10/2041	8.72	8.72	8.72	8.72	8.72	8.72	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	5.55	8.72	8.72
SPP South - Energy Price - 1H2023	6706	5/11/2041	5/11/2041	8.72	8.72	8.72	8.72	8.72	8.72	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	8.72	8.72
SPP South - Energy Price - 1H2023	6707	5/12/2041	5/12/2041	8.72	8.72	8.72	8.72	8.72	8.72	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	9.96	8.72	8.72
SPP South - Energy Price - 1H2023	6708	5/13/2041	5/13/2041	9.15	9.15	9.15	9.15	9.15	9.15	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	9.15	9.15
SPP South - Energy Price - 1H2023	6709	5/14/2041	5/14/2041	9.32	9.32	9.32	9.32	9.32	9.32	5.89	5.89	5.89	5.89	5.89	5.89	5.89	5.89	5.89	5.42	5.89	5.89	5.89	5.89	5.89	5.89	9.32	9.32
SPP South - Energy Price - 1H2023	6710	5/15/2041	5/15/2041	9.12	9.12	9.12	9.12	9.12	9.12	5.78	5.12	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.78	5.78	5.78	5.78	5.78	9.12	9.12
SPP South - Energy Price - 1H2023	6711	5/16/2041	5/16/2041	9.01	9.01	9.01	9.01	9.01	9.01	5.72	4.99	4.96	4.96	4.96	4.96	4.96	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	9.01	9.01
SPP South - Energy Price - 1H2023	6712	5/17/2041	5/17/2041	8.58	8.58	8.58	8.58	8.58	8.58	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	5.48	8.58	8.58
SPP South - Energy Price - 1H2023	6713	5/18/2041	5/18/2041	8.58	8.58	8.58	8.58	8.58	8.58	9.81	9.02	9.02	1.3	9.02	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	8.58	8.58
SPP South - Energy Price - 1H2023	6714	5/19/2041	5/19/2041	8.58	8.58	8.58	8.58	8.58	8.58	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	8.58	8.58
SPP South - Energy Price - 1H2023	6715	5/20/2041	5/20/2041	7.68	7.68	7.68	7.68	7.68	7.68	4.97	4.97	4.57	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	7.68	7.68
SPP South - Energy Price - 1H2023	6716	5/21/2041	5/21/2041	8.91	8.91	8.91	8.91	8.91	8.91	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	8.91	8.91
SPP South - Energy Price - 1H2023	6717	5/22/2041	5/22/2041	9.33	9.33	9.33	9.33	9.33	9.33	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	9.33	9.33
SPP South - Energy Price - 1H2023	6718	5/23/2041	5/23/2041	9.39	9.39	9.39	9.39	9.39	9.39	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	9.39	9.39
SPP South - Energy Price - 1H2023	6719	5/24/2041	5/24/2041	9.56	9.56	9.56	9.56	9.56	9.56	6.02	6.02	6.02	5.54	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	9.56	9.56
SPP South - Energy Price - 1H2023	6720	5/25/2041	5/25/2041	9.56	9.56	9.56	9.56	9.56	9.56	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	9.56	9.56
SPP South - Energy Price - 1H2023	6721	5/26/2041	5/26/2041	9.56	9.56	9.56	9.56	9.56	9.56	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	10.92	9.56	9.56
SPP South - Energy Price - 1H2023	6722	5/27/2041	5/27/2041	9.56	9.56	9.56	9.56	9.56	9.56	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	9.56	9.56

SPP South - Energy Price - 1H2023	6723	5/28/2041	5/28/2041	9.25	9.25	9.25	9.25	9.25	9.25	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	9.25	9.25
SPP South - Energy Price - 1H2023	6724	5/29/2041	5/29/2041	9.21	9.21	9.21	9.21	9.21	9.21	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	9.21	9.21
SPP South - Energy Price - 1H2023	6725	5/30/2041	5/30/2041	8.94	8.94	8.94	8.94	8.94	8.94	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.68	8.94	8.94
SPP South - Energy Price - 1H2023	6726	5/31/2041	5/31/2041	8.85	8.85	8.85	8.85	8.85	8.85	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	8.85	8.85
SPP South - Energy Price - 1H2023	6727	6/1/2041	6/1/2041	24.56	24.56	24.56	24.56	24.56	24.56	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.56	24.56
SPP South - Energy Price - 1H2023	6728	6/2/2041	6/2/2041	24.56	24.56	24.56	24.56	24.56	24.56	24.63	24.63	24.63	24.63	22.97	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.63	24.56	24.56
SPP South - Energy Price - 1H2023	6729	6/3/2041	6/3/2041	22.91	22.91	22.91	22.91	22.91	22.91	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	20.92	22.91	22.91
SPP South - Energy Price - 1H2023	6730	6/4/2041	6/4/2041	25.1	25.1	25.1	25.1	25.1	25.1	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	25.71	25.1
SPP South - Energy Price - 1H2023	6731	6/5/2041	6/5/2041	25.71	25.71	25.71	25.71	25.71	25.71	23.16	23.16	23.16	23.16	23.16	23.16	23.16	23.27	24.84	23.17	23.16	23.27	23.27	23.91	23.27	23.27	25.71	25.71
SPP South - Energy Price - 1H2023	6732	6/6/2041	6/6/2041	25.17	25.17	25.17	25.17	25.17	25.17	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.73	22.87	24.12	22.73	22.79	23.93	22.87	22.87	22.87	25.17	25.17
SPP South - Energy Price - 1H2023	6733	6/7/2041	6/7/2041	22.96	22.96	22.96	22.96	22.96	22.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	22.96	22.96
SPP South - Energy Price - 1H2023	6734	6/8/2041	6/8/2041	22.96	22.96	22.96	22.96	22.96	22.96	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	22.96	22.96
SPP South - Energy Price - 1H2023	6735	6/9/2041	6/9/2041	22.96	22.96	22.96	22.96	22.96	22.96	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	23.02	22.96	22.96
SPP South - Energy Price - 1H2023	6736	6/10/2041	6/10/2041	25.26	25.26	25.26	25.26	25.26	25.26	22.8	22.8	22.8	22.8	22.8	20.98	20.98	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	25.26	25.26
SPP South - Energy Price - 1H2023	6737	6/11/2041	6/11/2041	23.09	23.09	23.09	23.09	23.09	23.09	19.68	18.11	6.59	18.11	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	23.09	23.09
SPP South - Energy Price - 1H2023	6738	6/12/2041	6/12/2041	23.04	23.04	23.04	23.04	23.04	23.04	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.03	21.03	21.03	21.03	23.04	23.04
SPP South - Energy Price - 1H2023	6739	6/13/2041	6/13/2041	24.42	24.42	24.42	24.42	24.42	24.42	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	24.42	24.42
SPP South - Energy Price - 1H2023	6740	6/14/2041	6/14/2041	24.61	24.61	24.61	24.61	24.61	24.61	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	24.61	24.61
SPP South - Energy Price - 1H2023	6741	6/15/2041	6/15/2041	24.61	24.61	24.61	24.61	24.61	24.61	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.69	24.68	24.68	24.68	24.61	24.61
SPP South - Energy Price - 1H2023	6742	6/16/2041	6/16/2041	24.61	24.61	24.61	24.61	24.61	24.61	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	25.61	26.21	26.28	24.61	24.61
SPP South - Energy Price - 1H2023	6743	6/17/2041	6/17/2041	25.79	25.79	25.79	25.79	25.79	25.79	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	23.23	25.79	25.79
SPP South - Energy Price - 1H2023	6744	6/18/2041	6/18/2041	26.08	26.08	26.08	26.08	26.08	26.08	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	26.91	26.55
SPP South - Energy Price - 1H2023	6745	6/19/2041	6/19/2041	26.89	26.91	26.85	26.91	26.91	26.91	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	23.84	27.95	27.15
SPP South - Energy Price - 1H2023	6746	6/20/2041	6/20/2041	27.15	27.15	27.15	27.15	27.15	27.15	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.06	24.19	25.76	25.88	26.75	24.19	27.95	27.77
SPP South - Energy Price - 1H2023	6747	6/21/2041	6/21/2041	26.95	26.96	26.9	25.87	27.06	27.06	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	24.21	23.29	26.26	25.87
SPP South - Energy Price - 1H2023	6748	6/22/2041	6/22/2041	25.87	25.87	25.87	25.87	25.87	25.87	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.87	25.87
SPP South - Energy Price - 1H2023	6749	6/23/2041	6/23/2041	25.87	25.87	25.87	25.87	25.87	25.87	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.93	25.87	25.87
SPP South - Energy Price - 1H2023	6750	6/24/2041	6/24/2041	23.13	23.13	23.13	23.13	23.13	23.13	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	23.13	23.13
SPP South - Energy Price - 1H2023	6751	6/25/2041	6/25/2041	24.46	24.46	24.46	24.46	24.46	24.46	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	22.17	24.65	24.46
SPP South - Energy Price - 1H2023	6752	6/26/2041	6/26/2041	25.08	25.08	25.08	25.08	25.08	25.08	22.66	22.66	22.65	22.65	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	25.08	25.08
SPP South - Energy Price - 1H2023	6753	6/27/2041	6/27/2041	21.27	21.27	21.27	21.27	21.27	21.27	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	21.27	21.27
SPP South - Energy Price - 1H2023	6754	6/28/2041	6/28/2041	25	25	25	25	25	25	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.99	24.03	22.59	22.59	22.59	25	25
SPP South - Energy Price - 1H2023	6755	6/29/2041	6/29/2041	25	25	25	25	25	25	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25	25
SPP South - Energy Price - 1H2023	6756	6/30/2041	6/30/2041	25	25	25	25	25	25	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.06	25.2	25.06	25.14	25
SPP South - Energy Price - 1H2023	6757	7/1/2041	7/1/2041	49.93	49.93	49.93	49.93	49.93	49.93	47.64	47.64	47.64	47.64	47.64	47.64	48.95	48.95	48.95	48.95	48.95	48.95	50.17	47.64	51.29	48.95	49.93	51.94
SPP South - Energy Price - 1H2023	6758	7/2/2041	7/2/2041	52.91	50.69	50.69	50.69	52.91	52.52	48.28	48.28	48.28	53.05	52.35	51.34	55.02	51.82	55.77	55.77	55.77	55.77	55.77	55.02	59.64	55.77	56.33	55.55
SPP South - Energy Price - 1H2023	6759	7/3/2041	7/3/2041	54.98	54.98	54.98	53.99	53.92	53.53	51.84	52.01	54.48	53.03	55.27	55.27	54.86	54.54	50.85	54.53	52.56	55.27	55.27	57.22	55.27	55.27	55.75	54.98
SPP South - Energy Price - 1H2023	6760	7/4/2041	7/4/2041	53.99	52.12	52.01	53.15	53.92	53.92	50.81	49.1	47.85	47.85	47.85	47.85	47.85	47.85	52.51	50.52	54.53	54.54	55.27	57.22	54.53	55.27	56.63	54.98
SPP South - Energy Price - 1H2023	6761	7/5/2041	7/5/2041	52.47	51.23	51.07	51.12	51.23	51.02	45.94	45.94	45.94	45.94	47.73	47.15	49.58	49.2	51.34	51.16	53.07	53.07	54.88	53.07	53.6	53.07	59.09	53.94
SPP South - Energy Price - 1H2023	6762	7/6/2041	7/6/2041	53.94	52.47	51.07	49.96	50.85	49.54	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	60.1	60.6	61.79	60.1	60.1	52.47	52.26
SPP South - Energy Price - 1H2023	6763	7/7/2041	7/7/2041	51.49	47.92	47.92	47.92	49.93	49.54	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	60.1	59.34	56.04	48.27	48.27
SPP South - Energy Price - 1H2023	6764	7/8/2041	7/8/2041	49.74	49.74	49.74	49.74	49.74	49.74	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	47.47	49.74	49.74
SPP South - Energy Price - 1H2023	6765	7/9/2041	7/9/2041	50.42	50.42	50.42	50.42	50.42	50.42	48.06	48.06	48.06	48.06	48.06	48.06	48.06	48.06	48.06	50.32	48.45	49.03	48.06	48.06	48.06	48.06	50.85	50.52
SPP South - Energy Price - 1H2023	6766	7/10/2041	7/10/2041	50.85	50.85	50.85	50.85	50.85	50.85	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	50.85	50.85
SPP South - Energy Price - 1H2023	6767	7/11/2041	7/11/2041	52.51	52.51	52.51	52.51	52.51	52.51	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	49.82	52.51	52.51
SPP South - Energy Price - 1H2023	6768	7/12/2041	7/12/2041	50.97	50.97	50.97	50.97	50.97	50.97	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	48.52	49.75	48.52	48.52	55.87	50.97
SPP South - Energy Price - 1H2023	6769	7/13/2041	7/13/2041	50.97	50.97	50.97	50.97	50.97	50.97	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.42	58.38	58.38	58.38	50.97	50.97
SPP South - Energy Price - 1H2023	6770	7/14/2041	7/14/2041	50.97	50.97	50.97	50.97	50.97	50.97	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	58.38	61.57	58.42	50.97	50.97
SPP South - Energy Price - 1H2023	6771	7/15/2041	7/15/2041	49.03	49.03	49.03	49.03	49.03	49.03	46.87	46.87	46.87	46.87	46.87	46.87	49.12	50.24	49.99	49.43	49.31	53.44	53.45	53.45	54.15	53.45	53.7	53.7
SPP South - Energy Price - 1H2023	6772	7/16/2041	7/16/2041	53.03	53.03	52.19	52.51	53.03	52.68	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	49.32	49.32	54.52	51.07	49.32	51.81	54.13	49.41
SPP South - Energy Price - 1H2023	6773	7/17/2041	7/17/2041	48.54	48.54	48.54	48.54	48.54	48.54	46.46	46.46	46.46	46.46	46.46	46.46	46.46	46.46	46.46	46.46	46.46	46.46	47.94	49.53	46.46	46.46	48.54	48.54
SPP South - Energy Price - 1H2023	6774	7/18/2041	7/18/2041	47.28	47.28	47.28	47.28	47.28	47.28	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.94	45.93	45.39	45.39	45.94	48.92	49.05	46.42	47.94	47.28
SPP South - Energy Price - 1H2023	6775	7/19/2041	7/19/2041	46.85	46.85	46.85	46.85	46.85	46.85	45.03	45.03	45.03	47.43	46.86	46.3	45.03	45.03	45.03	45.03	45.03	46.18	47.78	47.4	48.08	47.4	47.33	46.85
SPP South - Energy Price - 1H2023	6776	7/20/2041	7/20/2041	46.85	46.85	46.85	46.85	46.85	46.85	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	54.21	54.66	55.18	53.94	46.85	46.85
SPP South - Energy Price - 1H2023	6777	7/21/2041	7/21/2041	46.85	46.85	46.85	46.85	46.85	46.85	53.66	53.66	53.65	53.66	53.65	53.66	53.66	53.66	53.66	53.66	53.66	53.66	54.15	53.66	53.66	53.94	47.55	46.85
SPP South - Energy Price - 1H2023	6778	7/22/2041	7/22/2041	46.84	46.71	46.84	46.84	46.84	46.84	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	45.75	51.25	48.78	46.55	46.97	47.41	46.71
SPP South - Energy Price - 1H2023	6779	7/23/2041	7/23/2041	47.15	47.15	47.15	47.15	47.15	47.15	45.28	45.28	45.28	45.28	45.28	45.28	45.69	46.07	45.28	45.28	45.93	47.18	47.81	48.15	47.18	47.18	47.5	47.46
SPP South - Energy Price - 1H2023	6780	7/24/2041	7/24/2041	47.46	47.46	47.46	47.46	47.46	47.46	45.55	45.55	45.55	45.55	45.55	46.36	46.13	46.91	46.94	45.62	46.21	46.59	50.97	48.73	48.98	45.55	48.38	48
SPP South - Energy Price - 1H2023	6781	7/25/2041	7/25/2041	48	48	48	48	48	48	48.13	46.01	46.01	46.01	46.6	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	49.56	49.18
SPP South - Energy Price - 1H2023	6782	7/26/2041	7/26/2041	47.75	48.25	47.75	48	48.25	48.25	47.31	47.62	47.76	48.26	47.75	45.79	48.31	51.21	52.13	52.2	52.13	51.84	52.23	52.25	52.13	50.22	47.95	47.75
SPP South - Energy Price - 1H2023	6783	7/27/2041	7/27/2041	47.75	47.75	47.75	47.75	47.75	47.75	54.69	54.69	55.27	54.69	55.81	55.57	55.23	55.3	55.7	55.86	54.69	54.69	59.44	55.23	55.23	55.41	47.8	47.75
SPP South - Energy Price - 1H2023	6784	7/28/2041	7/28/2041	47.75	47.75	47.75	47.75	47.75	47.75	54.69	54.69	54.69	54.69	54.69	54.69	54.69	54.69	54.69	54.69	54.69	55.23	58.22	59.87	59.44	59.44	47.8	47.75
SPP South - Energy Price - 1H2023	6785	7/29/2041	7/29/2041	47.11	47.11	47.11	47.11	47.11	47.11	45.25	45.25	45.25	45.25	45.25	46.37	46.13	47.58	47.99	46.83	51.63	51.63	52.11	54.98	51.99	51.63	51.56	51.56
SPP South - Energy Price - 1H2023	6786	7/30/2041	7/30/2041	51.07	50.48	48.36	48.47	49.11	51.07	48.82	46.26	46.26	46.26	47.41	47.13	49.79	52.76	52.76	53.44	53.44	56.6	59.91	58.21	58.36	53.44	53.86	52.82
SPP South - Energy Price - 1H2023	6787	7/31/2041	7/31/2041	49.87	48.72	48.72	48.72	49.87	49.87	49.15	46.61	46.61	46.61	46.61	46.61	47.43	48.7	49.32	48.36	49.11	49.8	52.36	53.44	51.57	49.8	52.08	52.08
SPP South - Energy Price - 1H2023	6788	8/1/2041	8/1/2041	55.36	55.36	55.36	55.36	55.36	55.36	53.47	53.47	54.67	53.47	55.46	53.47	53.47	54.68	53.47	55.1	56.79	56.79	57.21	56.79	56.79	56.79	55.36	55.36
SPP South - Energy Price - 1H2023	6789	8/2/2041	8/2/2041	55.04	55.04	55.04	55.04	55.04	55.04	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	56.22	56.87	55.26	53.2	55.58	55.1
SPP South - Energy Price - 1H2023	6790	8/3/2041	8/3/2041	55.04	55.04	55.04	55.04	55.04	55.04	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	55.79	56.06	56.16	55.43	55.04
SPP South - Energy Price - 1H2023	6791	8/4/2041	8/4/2041	55.04	55.04	55.04	55.04	55.04	55.04	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.86	54.91	54.91	59.36	59.5	56.38	55.04	55.04
SPP South - Energy Price - 1H2023	6792	8/5/2041	8/5/2041	55.55	55.55	55.55	55.55	55.55	55.55	53.64	53.64	53.64	53.64	53.64	53.64	53.64	53.64	56.52	55.58	56.52	56.83	56.98	56.52	57.73	53.67	55.55	55.55
SPP South - Energy Price - 1H2023	6793	8/6/2041	8/6/2041	54.72	54.72	54.72	54.72	54.72	54.72	52.92	52.92	52.92	52.92	52.92	54.32	54.14	54.32	54.56	54.32	52.92	53.79	54.14	54.32	54.32	54.32	54.72	54.72
SPP South - Energy Price - 1H2023	6794	8/7/2041	8/7/2041	46.27	46.27	46.27	46.27	46.27	46.27	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	45.64	46.27	46.27
SPP South - Energy Price - 1H2023	6795	8/8/2041	8/8/2041	41.91	41.91	41.91	41.91	41.91	41.91	41.89	41.89	41.89	41.89	41.89	41.89	41.89	41.89	41.89	41.89	41.89	41.89	42	44.26	41.89	41.89	41.91	41.91
SPP South - Energy Price - 1H2023	6796	8/9/2041	8/9/2041	41.26	41.26	41.26	41.26	41.26	41.26	41.33	41.33	41.33	41.33	41.33	41.33	41.33	41.33	41.33	41.33	41.33	41.33	43.21	43.7	41.33	41.33	41.26	41.26
SPP South - Energy Price - 1H2023	6797	8/10/2041	8/10/2041	41.26	41.26	41.26	41.26	41.26	41.26	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.4	41.12	41.12	41.12	41.26	41.26
SPP South - Energy Price - 1H2023	6798	8/11/2041	8/11/2041	41.26	41.26	41.26	41.26	41.26	41.26	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	41.12	42.46	44.17	42.47	41.12	41.26	41.26
SPP South - Energy Price - 1H2023	6799	8/12/2041	8/12/2041	50.32	50.32	50.32	50.32	50.32	50.32	49.13	49.13	49.13	49.13	49.13	49.13	49.13	49.13	49.13	49.13	49.13	49.13	50.45	50.88	50.98	49.13	50.34	50.32
SPP South - Energy Price - 1H2023	6800	8/13/2041	8/13/2041	54.88	54.88	54.88	54.88	54.88	54.88	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	53.06	59.71	59.75	53.06	53.06	55.26	55.18
SPP South - Energy Price - 1H2023	6801	8/14/2041	8/14/2041	56.34	56.34	56.34	56.34	56.34	56.34	54.31	54.31	54.31	54.31	54.31	54.31	54.31	54.31	54.31	54.31	54.31	54.31	62.74	62.74	58	54.31	56.34	56.34
SPP South - Energy Price - 1H2023	6802	8/15/2041	8/15/2041	55.86	55.86	55.86	55.86	55.86	55.86	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	56.19	58.41	60.01	67.05	64.02	61.39	61.17	61.25	57.99
SPP South - Energy Price - 1H2023	6803	8/16/2041	8/16/2041	57.33	57.33	57.33	57.33	57.33	57.33	55.69	52.7	52.7	52.7	52.7	52.7	53.43	53.85	59.89	60.04	59.73	60.04	60.87	60.56	60.04	60.04	57.33	56.43
SPP South - Energy Price - 1H2023	6804	8/17/2041	8/17/2041	54.46	54.46	54.46	54.46	54.46	54.46	54.28	54.28	54.28	54.28	54.28	54.28	54.28	57.13	59.49	61.18	61.18	71.02	69.75	61.18	61.18	61.18	57.33	56.43
SPP South - Energy Price - 1H2023	6805	8/18/2041	8/18/2041	54.46	54.46	54.46	54.46	54.46	54.46	54.28	54.28	54.28	54.79	54.28	54.28	54.28	54.28	54.28	59.49	61.01	61.18	68.32	61.18	61.18	61.01	57.33	57.33

SPP South - Energy Price - 1H2023	6806	8/19/2041	8/19/2041	54.89	55.82	54.7	55.82	55.66	55.82	57.67	58.61	58.16	56.72	60.32	56.12	60.71	56.13	61.92	59.89	61.92	61.92	62.41	63.14	61.92	60.71	59.74	57.33
SPP South - Energy Price - 1H2023	6807	8/20/2041	8/20/2041	56.59	56.59	56.59	56.59	56.59	56.59	54.66	54.66	54.53	54.53	54.53	54.53	54.53	54.53	58.19	54.53	54.53	54.66	62.99	62.09	54.66	54.53	56.77	56.77
SPP South - Energy Price - 1H2023	6808	8/21/2041	8/21/2041	56.77	56.77	56.77	56.77	56.77	56.77	54.69	54.69	54.69	54.69	54.69	57.78	58.1	62.27	70.83	71.32	71.32	71.32	71.32	71.32	71.32	69.59	68.05	61.74
SPP South - Energy Price - 1H2023	6809	8/22/2041	8/22/2041	59.02	58.78	57.48	58.81	59.02	59.36	60.1	55.29	55.29	55.29	55.29	55.29	59.1	62.95	63.87	63.87	63.87	63.87	63.87	72.17	63.87	63.87	63.05	60.54
SPP South - Energy Price - 1H2023	6810	8/23/2041	8/23/2041	59.14	59.79	60.04	60.13	60.36	60.4	61.46	62.57	63.48	63.48	63.48	63.48	63.48	62.57	63.48	63.48	63.48	69.47	63.48	63.48	62.57	62.57	57.08	57.08
SPP South - Energy Price - 1H2023	6811	8/24/2041	8/24/2041	57.08	57.08	57.08	57.08	57.08	57.08	56.89	56.89	56.89	56.89	56.89	56.89	58.47	58.67	57.55	64.19	64.19	64.19	67.53	64.19	64.19	59.56	57.08	57.08
SPP South - Energy Price - 1H2023	6812	8/25/2041	8/25/2041	57.08	57.08	57.08	57.08	57.08	57.08	56.89	56.89	56.89	56.89	56.89	56.89	56.89	56.89	56.89	56.89	56.89	56.89	58.47	60.17	59.22	58.35	57.08	57.08
SPP South - Energy Price - 1H2023	6813	8/26/2041	8/26/2041	46.39	47.03	47.03	47.03	46.91	46.83	45.29	45.29	45.29	45.29	45.29	45.29	45.29	45.29	45.29	45.29	45.29	45.52	51.76	51.76	51.37	48.5	47.45	46.29
SPP South - Energy Price - 1H2023	6814	8/27/2041	8/27/2041	55.27	55.92	56.14	55.47	55.08	56.53	55.99	52.33	52.33	52.33	52.33	52.33	52.33	52.33	52.33	52.33	52.33	55.99	59.63	59.63	58.86	56.02	55.33	55.39
SPP South - Energy Price - 1H2023	6815	8/28/2041	8/28/2041	54.82	54.82	54.67	54.82	54.82	54.82	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	53.11	57.37	59.38	58.05	52.1	54.08	54.08
SPP South - Energy Price - 1H2023	6816	8/29/2041	8/29/2041	53.7	54.08	54.08	54.08	54.08	54.69	55.35	52.04	52.04	52.04	52.04	52.04	52.04	52.04	52.04	52.04	52.04	55.85	60.11	59.31	55.85	55.85	57.84	55.04
SPP South - Energy Price - 1H2023	6817	8/30/2041	8/30/2041	51.52	51.45	49.71	51.52	51.52	51.52	50.41	46.38	46.38	46.38	46.38	46.38	46.38	53.58	56.79	57.53	56.76	59.67	53.58	53.58	53.58	52.97	50.03	47.69
SPP South - Energy Price - 1H2023	6818	8/31/2041	8/31/2041	47.79	50.04	49.83	47.4	47.4	48.2	47.24	46.96	47.24	47.24	50.5	47.24	47.24	51.35	51.35	51.35	51.35	51.35	52.76	52.76	51.35	51.35	51.45	47.12
SPP South - Energy Price - 1H2023	6819	9/1/2041	9/1/2041	31.93	31.93	32.29	31.93	31.93	31.93	48.94	48.94	48.94	48.94	48.94	48.94	48.94	48.94	48.94	48.94	53.5	54.98	54.98	53.5	53.5	53.5	32.12	31.93
SPP South - Energy Price - 1H2023	6820	9/2/2041	9/2/2041	31.93	31.95	32.12	32.12	32.65	32.37	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	40.95	40.49	35.44	35.44	31.93	31.93
SPP South - Energy Price - 1H2023	6821	9/3/2041	9/3/2041	37.66	37.66	37.66	37.66	37.66	37.66	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	37.66	37.66
SPP South - Energy Price - 1H2023	6822	9/4/2041	9/4/2041	38.13	38.13	38.13	38.13	38.13	38.13	41.45	41.45	41.45	45.01	44.23	45.01	45.01	44.68	43.95	41.45	41.45	42.39	45.91	46.33	45.01	44.67	39.23	39.32
SPP South - Energy Price - 1H2023	6823	9/5/2041	9/5/2041	38.67	38.77	38.28	38.44	38.46	38.77	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	40.83	37.49	37.49
SPP South - Energy Price - 1H2023	6824	9/6/2041	9/6/2041	37.05	37.05	37.05	37.05	37.05	37.05	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	40.41	37.05	37.05
SPP South - Energy Price - 1H2023	6825	9/7/2041	9/7/2041	37.05	37.05	37.05	37.05	37.05	37.05	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	37.05	37.05
SPP South - Energy Price - 1H2023	6826	9/8/2041	9/8/2041	37.05	37.05	37.05	37.05	37.05	37.05	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.78	56.88	56.78	56.78	37.05	37.05
SPP South - Energy Price - 1H2023	6827	9/9/2041	9/9/2041	36.7	36.7	36.7	36.7	36.7	36.7	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	40.07	36.7	36.7
SPP South - Energy Price - 1H2023	6828	9/10/2041	9/10/2041	36.11	36.11	36.11	36.11	36.11	36.11	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	39.49	36.11	36.11
SPP South - Energy Price - 1H2023	6829	9/11/2041	9/11/2041	36.39	36.39	36.39	36.39	36.39	36.39	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	39.76	36.39	36.39
SPP South - Energy Price - 1H2023	6830	9/12/2041	9/12/2041	36.9	36.9	36.9	36.9	36.9	36.9	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	40.26	36.9	36.9
SPP South - Energy Price - 1H2023	6831	9/13/2041	9/13/2041	35.71	35.71	35.71	35.71	35.71	35.71	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	35.71	35.71
SPP South - Energy Price - 1H2023	6832	9/14/2041	9/14/2041	35.71	35.7	35.7	35.7	35.7	35.7	54.72	13.59	9.15	13.59	9.73	10.71	13.59	14.82	16.99	18.82	54.72	54.72	54.72	54.72	54.72	54.72	35.71	35.71
SPP South - Energy Price - 1H2023	6833	9/15/2041	9/15/2041	35.71	35.7	35.7	35.7	35.7	35.7	54.72	13.59	9.15	8.48	13.59	13.59	13.59	14.82	16.99	54.72	54.72	54.72	54.72	54.72	54.72	54.72	35.7	35.7
SPP South - Energy Price - 1H2023	6834	9/16/2041	9/16/2041	33.45	33.45	33.45	33.45	33.45	33.45	36.91	36.91	36.91	36.91	36.91	36.91	36.91	36.91	36.91	36.91	36.91	36.91	37.66	36.91	36.91	36.91	33.45	33.45
SPP South - Energy Price - 1H2023	6835	9/17/2041	9/17/2041	35.57	35.57	35.57	35.57	35.57	35.57	38.97	38.97	38.97	38.97	38.97	38.97	38.97	38.97	38.97	38.97	38.97	39.11	38.97	38.97	38.97	38.97	35.57	35.57
SPP South - Energy Price - 1H2023	6836	9/18/2041	9/18/2041	35.48	35.48	35.48	35.48	35.48	35.48	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	38.88	35.48	35.48
SPP South - Energy Price - 1H2023	6837	9/19/2041	9/19/2041	35.64	35.64	35.64	35.64	35.64	35.64	39.04	39.04	39.04	39.04	39.04	39.04	39.04	39.04	39.04	39.04	39.04	39.04	42.62	40.88	39.04	39.04	35.64	35.64
SPP South - Energy Price - 1H2023	6838	9/20/2041	9/20/2041	35.43	35.43	35.43	35.43	35.43	35.43	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	38.83	35.43	35.43
SPP South - Energy Price - 1H2023	6839	9/21/2041	9/21/2041	35.43	35.43	35.43	35.43	35.43	35.43	54.29	54.29	17.37	17.37	17.37	10.71	13.09	17.37	17.37	54.29	54.29	54.29	54.29	54.29	54.29	54.29	35.43	35.43
SPP South - Energy Price - 1H2023	6840	9/22/2041	9/22/2041	35.43	35.43	34.88	34.8	34.58	35.43	54.29	11.18	3.79	0.09	0	0.3	3.79	5.03	4.63	19.68	19	54.29	54.29	54.29	54.29	54.29	35.3	35.43
SPP South - Energy Price - 1H2023	6841	9/23/2041	9/23/2041	32.66	32.97	32.9	32.59	33.52	33.52	36.98	33.7	31.01	31.01	26.48	31.01	36.98	36.98	36.98	36.98	36.98	36.98	36.98	36.98	36.98	36.98	33.52	33.52
SPP South - Energy Price - 1H2023	6842	9/24/2041	9/24/2041	35.66	35.66	35.66	35.66	35.66	35.66	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	39.06	35.66	35.66
SPP South - Energy Price - 1H2023	6843	9/25/2041	9/25/2041	35.93	35.93	35.93	35.93	35.93	35.93	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	39.32	35.93	35.93
SPP South - Energy Price - 1H2023	6844	9/26/2041	9/26/2041	36.23	36.23	36.23	36.23	36.23	36.23	39.62	39.62	39.62	39.61	39.61	39.61	39.61	39.61	39.61	39.61	39.62	39.62	39.62	39.62	39.62	39.62	36.23	36.23
SPP South - Energy Price - 1H2023	6845	9/27/2041	9/27/2041	36.5	36.5	36.5	36.5	36.5	36.5	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	39.87	36.5	36.5
SPP South - Energy Price - 1H2023	6846	9/28/2041	9/28/2041	36.5	36.5	36.5	36.5	36.5	36.5	55.93	55.93	10.56	4.23	2.47	2.97	3.79	4.23	4.23	4.55	19	55.93	55.93	55.93	55.93	55.93	36.49	36.49
SPP South - Energy Price - 1H2023	6847	9/29/2041	9/29/2041	36.49	36.49	36.49	36.49	36.49	36.49	55.93	55.93	24.93	17.14	17.14	12.99	15.12	17.14	18.98	19.68	55.93	55.93	55.93	55.93	55.93	55.93	36.5	36.5
SPP South - Energy Price - 1H2023	6848	9/30/2041	9/30/2041	30.54	30.54	30.54	30.54	30.54	30.54	34.09	34.09	31.36	31.36	31.36	31.36	34.09	34.09	34.09	34.09	34.09	34.09	34.09	34.09	34.09	34.09	30.54	30.54
SPP South - Energy Price - 1H2023	6849	10/1/2041	10/1/2041	19.98	19.98	19.98	19.98	19.98	19.98	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	19.98	19.98
SPP South - Energy Price - 1H2023	6850	10/2/2041	10/2/2041	19.93	19.93	19.93	19.93	19.93	19.93	18.16	18.16	18.16	16.7	16.26	16.7	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	19.93	19.93
SPP South - Energy Price - 1H2023	6851	10/3/2041	10/3/2041	20.76	20.76	20.75	20.75	20.75	20.75	18.82	6	3.31	3.36	3.66	5.38	5.38	5.38	5.95	18.82	18.83	18.83	18.83	18.83	18.83	18.83	20.76	20.76
SPP South - Energy Price - 1H2023	6852	10/4/2041	10/4/2041	21.01	21.01	21.01	21.01	21.01	21.01	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	19.03	21.01	21.01
SPP South - Energy Price - 1H2023	6853	10/5/2041	10/5/2041	21.01	21.01	21.01	21.01	21.01	21.01	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	21.01	21.01
SPP South - Energy Price - 1H2023	6854	10/6/2041	10/6/2041	21.01	21.01	21.01	21.01	21.01	21.01	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	21.01	21.01
SPP South - Energy Price - 1H2023	6855	10/7/2041	10/7/2041	20.31	20.31	20.31	20.31	20.31	20.31	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	20.31	20.31
SPP South - Energy Price - 1H2023	6856	10/8/2041	10/8/2041	20.63	20.63	20.63	20.63	20.63	20.63	19.55	19.55	19.55	19.55	19.55	19.55	19.55	19.55	17.99	19.55	19.55	19.55	19.55	19.55	19.55	19.55	20.63	20.63
SPP South - Energy Price - 1H2023	6857	10/9/2041	10/9/2041	20.18	20.18	20.18	20.18	20.18	20.18	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	19.19	20.18	20.18
SPP South - Energy Price - 1H2023	6858	10/10/2041	10/10/2041	20.44	20.44	20.44	20.44	20.44	20.44	19.4	19.4	19.4	19.4	17.85	17.85	17.85	17.85	17.85	17.85	19.4	19.4	19.4	19.4	19.4	19.4	20.44	20.44
SPP South - Energy Price - 1H2023	6859	10/11/2041	10/11/2041	18.99	18.99	18.99	18.99	18.99	18.99	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.22	18.99	18.99
SPP South - Energy Price - 1H2023	6860	10/12/2041	10/12/2041	18.99	18.99	18.99	18.99	18.99	18.99	22.64	22.64	22.64	20.82	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	18.99	18.99
SPP South - Energy Price - 1H2023	6861	10/13/2041	10/13/2041	18.99	18.99	18.99	18.99	18.99	18.99	22.64	22.64	9.88	9.88	8.2	9.88	9.88	8.09	9.88	15.52	22.64	22.64	22.64	22.64	22.64	22.64	18.99	18.99
SPP South - Energy Price - 1H2023	6862	10/14/2041	10/14/2041	20.39	20.39	20.39	20.39	20.39	20.39	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	20.39	20.39
SPP South - Energy Price - 1H2023	6863	10/15/2041	10/15/2041	20.53	20.53	20.53	20.53	20.53	20.53	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	20.53	20.53
SPP South - Energy Price - 1H2023	6864	10/16/2041	10/16/2041	20.79	20.79	20.79	20.79	20.79	20.79	19.69	19.69	17.07	17.02	17.02	16.73	18.5	17.02	18.06	18.85	19.69	19.69	19.69	19.69	19.69	19.69	20.79	20.79
SPP South - Energy Price - 1H2023	6865	10/17/2041	10/17/2041	21.33	21.33	21.33	21.33	21.33	21.33	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	20.12	21.33	21.33
SPP South - Energy Price - 1H2023	6866	10/18/2041	10/18/2041	20.92	20.92	20.92	20.92	20.92	20.92	19.79	19.79	19.79	19.79	19.79	19.79	18.21	19.79	19.79	18.85	19.79	19.79	19.79	19.79	19.79	19.79	20.92	20.92
SPP South - Energy Price - 1H2023	6867	10/19/2041	10/19/2041	20.92	20.92	20.92	20.92	20.92	20.92	24.95	24.95	24.95	22.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	24.95	20.92	20.92
SPP South - Energy Price - 1H2023	6868	10/20/2041	10/20/2041	20.92	20.92	20.92	20.92	20.92	20.92	24.95	24.95	7.27	5.99	5.5	5.99	1.79	2.37	5.99	5.99	24.95	24.95	24.95	24.95	24.95	24.95	20.92	20.92
SPP South - Energy Price - 1H2023	6869	10/21/2041	10/21/2041	21.19	21.19	21.19	21.19	21.19	21.19	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.53	20.75	20.89	20.01	20.01	21.19	21.19
SPP South - Energy Price - 1H2023	6870	10/22/2041	10/22/2041	21.61	21.61	21.61	21.61	21.61	21.61	20.35	20.35	5.73	5.73	3.66	4.07	4.74	5.38	5.73	6.17	20.35	20.35	20.35	20.35	20.35	20.35	21.61	21.61
SPP South - Energy Price - 1H2023	6871	10/23/2041	10/23/2041	21.49	21.49	21.49	21.49	21.49	21.49	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26	21.49	21.49
SPP South - Energy Price - 1H2023	6872	10/24/2041	10/24/2041	20.52	20.52	20.52	20.52	20.52	20.52	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	20.52	20.52
SPP South - Energy Price - 1H2023	6873	10/25/2041	10/25/2041	19.88	19.88	19.88	19.88	19.88	19.88	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	19.88	19.88
SPP South - Energy Price - 1H2023	6874	10/26/2041	10/26/2041	19.88	19.88	19.88	19.88	19.88	19.88	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	19.88	19.88
SPP South - Energy Price - 1H2023	6875	10/27/2041	10/27/2041	19.88	19.88	19.88	19.88	19.88	19.88	23.7	23.7	5.77	2.88	2.88	2.88	2.88	2.88	2.88	2.88	4.99	23.7	23.7	23.7	23.7	23.7	19.88	19.88
SPP South - Energy Price - 1H2023	6876	10/28/2041	10/28/2041	22.18	22.18	22.18	22.18	22.18	22.18	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	22.18	22.18
SPP South - Energy Price - 1H2023	6877	10/29/2041	10/29/2041	21.91	21.91	21.91	21.91	21.91	21.91	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	21.91	21.91
SPP South - Energy Price - 1H2023	6878	10/30/2041	10/30/2041	21.07	21.07	21.07	21.07	21.07	21.07	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	19.08	21.07	21.07
SPP South - Energy Price - 1H2023	6879	10/31/2041	10/31/2041	21.25	21.25	21.25	21.25	21.25	21.25	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	21.25	21.25
SPP South - Energy Price - 1H2023	6880	11/1/2041	11/1/2041	23.34	23.34	23.34	23.34	23.34	23.34	28.39	28.39	28.39	13.04	13.04	12.04	12.61	13.01	13.04	25.42	28.39	28.39	28.39	28.39	28.39	28.39	23.34	23.34
SPP South - Energy Price - 1H2023	6881	11/2/2041	11/2/2041	23.34	23.34	23.34	23.34	23.34	23.34	39.21	39.21	11.8	9.33	8.23	11.8	11.8	11.8	11.8	39.21	39.21	39.21	39.21	39.21	39.21	39.21	23.34	23.34
SPP South - Energy Price - 1H2023	6882	11/3/2041	11/3/2041	23.34	23.34	23.34	23.34	23.34	23.34	39.21	39.21	39.21	9.33	8.23	5.5	7.42	7.97	5.6	7.91	39.21	39.21	39.21	39.21	39.21	39.21	23.34	23.34
SPP South - Energy Price - 1H2023	6883	11/4/2041	11/4/2041	23.92	23.92	23.92	23.92	23.92	23.92	30.36	15.95	6.29	2.72	2.72	0.05	0	2.72	2.72	4.95	5.44	30.36	30.36	30.36	30.36	30.36	23.92	23.92
SPP South - Energy Price - 1H2023	6884	11/5/2041	11/5/2041	27.28	27.28	27.28	27.28	27.28	27.28	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	33.97	27.28	27.28
SPP South - Energy Price - 1H2023	6885	11/6/2041	11/6/2041	28.79	28.79	28.79	28.79	28.79	28.79	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	28.79	28.79
SPP South - Energy Price - 1H2023	6886	11/7/2041	11/7/2041	27.43	27.43	27.43	27.43	27.43	27.43	34.14	34.14	34.14	31.34	22.76	22.76	16.22	22.76	22.76	22.76	34.14	34.14	34.14	34.14	34.14	34.14	27.43	27.43
SPP South - Energy Price - 1H2023	6887	11/8/2041	11/8/2041	24.21	24.21	24.21	24.21	24.21	24.21	30.67	30.67	30.67	15.32	9.8	8.61	8.61	9.8	9.8	30.67	30.67	30.67	30.67	30.67	30.67	30.67	24.21	24.21
SPP South - Energy Price - 1H2023	6888	11/9/2041	11/9/2041	24.21	24.21	24.21	24.21	24.21	24.21	40.67	40.67	10.05	9.33	8.23	8.23	7.42	8.23	8.07	8.23	13.21	13.21	18.47	13.21	13.21	13.21	6.45	6.45

SPP South - Energy Price - 1H2023	6889	11/10/2041	11/10/2041	6.45	6.45	6.45	6.45	6.96	6.45	10.83	11.13	10.05	11.78	11.78	10.83	11.78	10.83	8.07	40.67	40.67	40.67	40.67	40.67	40.67	40.67	24.21	24.21
SPP South - Energy Price - 1H2023	6890	11/11/2041	11/11/2041	22.68	22.68	22.68	22.68	22.68	22.68	32.38	32.38	23.41	23.41	17.06	25.45	23.41	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	22.68	22.68
SPP South - Energy Price - 1H2023	6891	11/12/2041	11/12/2041	24.58	27.35	27.59	27.5	28.11	28.11	34.81	34.81	34.81	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.46	34.81	34.81	34.81	34.81	34.46	27.35	28.11
SPP South - Energy Price - 1H2023	6892	11/13/2041	11/13/2041	30.24	30.24	30.24	30.24	30.24	30.24	37.7	38.11	37.24	37.24	37.24	37.24	37.24	37.85	37.24	37.24	37.92	38.44	38.44	38.44	38.44	38.44	31.1	30.24
SPP South - Energy Price - 1H2023	6893	11/14/2041	11/14/2041	29.63	29.63	29.63	29.63	29.63	29.63	36.65	36.65	33.85	31.72	31.15	31.15	21.77	31.15	31.15	31.72	36.65	36.65	36.65	36.65	36.65	36.65	29.63	29.63
SPP South - Energy Price - 1H2023	6894	11/15/2041	11/15/2041	29.19	29.19	29.18	29.19	29.19	29.19	35.93	36.38	35.93	35.46	35.46	35.46	35.46	35.46	35.46	35.46	35.46	36.38	35.93	35.93	35.93	35.46	26.85	29.18
SPP South - Energy Price - 1H2023	6895	11/16/2041	11/16/2041	28.39	28.39	28.39	29.18	29.19	29.19	49.03	49.03	45.64	42.84	42.84	42.84	42.84	42.84	42.84	42.84	47.69	49.03	49.03	49.03	49.03	49.03	29.19	29.19
SPP South - Energy Price - 1H2023	6896	11/17/2041	11/17/2041	29.19	29.19	29.19	29.19	28.39	28.39	47.69	47.69	47.69	47.69	47.69	47.59	42.84	7.97	42.83	42.83	42.84	47.03	47.69	46.8	43.27	43.27	25.75	28.39
SPP South - Energy Price - 1H2023	6897	11/18/2041	11/18/2041	30.3	30.3	30.3	30.3	33.85	34.82	42.45	42.44	41.81	42.44	42.44	41.95	41.44	42.39	42.45	41.89	46.52	52.21	51.19	47.19	48.89	47.19	41.12	37.01
SPP South - Energy Price - 1H2023	6898	11/19/2041	11/19/2041	39.18	38.73	39.18	34.58	39.18	40.8	44.77	44.77	41.96	41.7	41.7	41.7	44.77	41.7	41.7	41.7	41.7	44.79	44.57	44.77	44.77	44.77	34.94	34.01
SPP South - Energy Price - 1H2023	6899	11/20/2041	11/20/2041	33.24	33.72	33.72	33.72	33.72	33.72	40.74	40.75	40.75	40.75	40.75	40.75	40.74	40.75	40.75	40.75	40.75	40.75	41.9	40.75	40.75	40.75	33.24	33.24
SPP South - Energy Price - 1H2023	6900	11/21/2041	11/21/2041	30.55	30.55	30.55	30.55	30.55	30.55	36.73	36.73	36.73	36.73	36.73	33.79	35.29	33.79	15.37	35.27	36.73	36.73	36.73	36.73	36.73	36.73	26.66	28.98
SPP South - Energy Price - 1H2023	6901	11/22/2041	11/22/2041	26.43	27.93	26.43	26.43	26.43	26.43	36.48	36.48	6.89	6.54	4.74	4.74	4.74	0	0	1.43	4.74	36.48	36.48	36.48	36.48	36.48	26.43	26.43
SPP South - Energy Price - 1H2023	6902	11/23/2041	11/23/2041	26.43	26.43	26.43	26.43	26.43	26.43	44.4	44.4	43.92	43.62	43.62	44.4	43.62	44.4	44.4	44.4	44.4	44.4	47.41	44.4	44.4	44.4	26.43	26.43
SPP South - Energy Price - 1H2023	6903	11/24/2041	11/24/2041	26.43	26.43	26.66	26.43	26.43	26.43	44.4	44.4	44.4	44.4	43.62	44.4	43.62	43.62	43.62	40.9	44.4	45.42	44.4	44.4	44.4	44.4	28.22	27.93
SPP South - Energy Price - 1H2023	6904	11/25/2041	11/25/2041	25.96	25.96	25.96	25.96	25.96	25.96	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	25.96	25.96
SPP South - Energy Price - 1H2023	6905	11/26/2041	11/26/2041	26.55	26.55	26.55	26.55	26.55	26.55	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	33.43	26.55	26.55
SPP South - Energy Price - 1H2023	6906	11/27/2041	11/27/2041	26.58	26.58	26.58	26.58	26.58	26.58	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	26.58	26.58
SPP South - Energy Price - 1H2023	6907	11/28/2041	11/28/2041	26.58	26.58	26.58	26.58	26.58	26.58	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.46	33.84	33.46	33.46	29.62	29.29
SPP South - Energy Price - 1H2023	6908	11/29/2041	11/29/2041	29.29	29.29	29.29	30.32	29.27	29.27	36.37	36.37	36.37	36.37	36.36	36.37	36.37	36.37	36.37	36.37	36.37	36.68	36.83	36.76	36.37	36.37	32.68	32.68
SPP South - Energy Price - 1H2023	6909	11/30/2041	11/30/2041	30.5	30.95	31.72	31.6	32.68	30.88	54.9	54.9	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	53.46	51.67	51.02	49.18	49.18	29.27	29.27
SPP South - Energy Price - 1H2023	6910	12/1/2041	12/1/2041	49.64	49.64	49.64	49.64	49.64	49.64	55.65	55.65	55.65	55.65	54.67	55.65	55.65	55.65	55.65	55.65	55.65	55.65	55.65	55.65	55.65	55.65	49.64	49.64
SPP South - Energy Price - 1H2023	6911	12/2/2041	12/2/2041	49.21	49.21	49.21	49.21	49.21	49.21	50.79	50.79	50.79	46.73	50.79	46.73	50.79	50.79	50.79	50.79	50.8	50.8	50.8	50.8	50.8	50.8	49.21	49.21
SPP South - Energy Price - 1H2023	6912	12/3/2041	12/3/2041	49.89	49.89	49.89	49.89	49.89	49.89	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	51.42	49.89	49.89
SPP South - Energy Price - 1H2023	6913	12/4/2041	12/4/2041	51.21	51.21	51.21	51.21	51.21	51.21	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	52.65	51.21	51.21
SPP South - Energy Price - 1H2023	6914	12/5/2041	12/5/2041	53.41	53.41	53.41	53.41	53.41	53.41	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	54.71	53.41	53.41
SPP South - Energy Price - 1H2023	6915	12/6/2041	12/6/2041	48.73	48.73	48.73	48.73	48.73	48.73	50.35	50.35	50.35	50.35	50.35	46.32	46.32	46.32	50.35	50.35	50.35	50.35	50.35	50.35	50.35	50.35	48.73	48.73
SPP South - Energy Price - 1H2023	6916	12/7/2041	12/7/2041	48.73	48.73	48.73	48.73	48.73	48.73	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	48.73	48.73
SPP South - Energy Price - 1H2023	6917	12/8/2041	12/8/2041	48.73	48.73	48.73	48.73	48.73	48.73	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	54.63	48.73	48.73
SPP South - Energy Price - 1H2023	6918	12/9/2041	12/9/2041	48.37	48.37	48.37	48.37	48.37	48.37	50.01	50.01	50.01	50.01	50.01	50.01	46.01	50.01	46.01	50.01	50.01	50.01	50.01	50.01	50.01	50.01	48.37	48.37
SPP South - Energy Price - 1H2023	6919	12/10/2041	12/10/2041	47.35	47.35	47.35	47.35	47.35	47.35	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	49.06	47.35	47.35
SPP South - Energy Price - 1H2023	6920	12/11/2041	12/11/2041	46.3	46.3	46.3	46.3	46.3	46.3	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	48.08	46.3	46.3
SPP South - Energy Price - 1H2023	6921	12/12/2041	12/12/2041	44.1	44.1	44.1	44.1	44.1	44.1	46.03	46.03	46.03	46.03	42.34	42.34	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	44.1	44.1
SPP South - Energy Price - 1H2023	6922	12/13/2041	12/13/2041	41.4	41.4	41.4	41.4	41.4	41.4	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	43.52	41.4	41.4
SPP South - Energy Price - 1H2023	6923	12/14/2041	12/14/2041	41.4	41.4	41.4	41.4	41.4	41.4	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	48.1	48.7	46.7	46.42	46.42	41.4	41.4
SPP South - Energy Price - 1H2023	6924	12/15/2041	12/15/2041	41.4	41.4	41.4	41.4	41.4	41.4	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	46.42	41.4	41.4
SPP South - Energy Price - 1H2023	6925	12/16/2041	12/16/2041	41.82	41.82	41.82	41.82	41.82	41.82	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	43.91	41.82	41.82
SPP South - Energy Price - 1H2023	6926	12/17/2041	12/17/2041	42.14	42.14	42.14	42.14	42.14	42.14	44.21	44.21	44.21	41.92	38.57	38.57	7.67	7.39	12.61	44.21	44.21	44.21	44.21	44.21	44.21	44.21	42.14	42.14
SPP South - Energy Price - 1H2023	6927	12/18/2041	12/18/2041	39.93	39.93	39.93	39.93	39.93	39.93	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	39.93	39.93
SPP South - Energy Price - 1H2023	6928	12/19/2041	12/19/2041	41.78	41.78	41.78	41.78	41.78	41.78	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	43.86	41.78	41.78
SPP South - Energy Price - 1H2023	6929	12/20/2041	12/20/2041	41.62	41.62	41.62	41.62	41.62	41.62	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	43.72	41.62	41.62
SPP South - Energy Price - 1H2023	6930	12/21/2041	12/21/2041	41.62	41.62	41.62	41.62	41.62	41.62	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	41.62	41.62
SPP South - Energy Price - 1H2023	6931	12/22/2041	12/22/2041	41.62	41.62	41.62	41.62	41.62	41.62	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	41.62	41.62
SPP South - Energy Price - 1H2023	6932	12/23/2041	12/23/2041	45.53	45.53	45.53	45.53	45.53	45.53	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	47.36	45.53	45.53
SPP South - Energy Price - 1H2023	6933	12/24/2041	12/24/2041	44.91	44.91	44.91	44.91	44.91	44.91	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	44.91	44.91
SPP South - Energy Price - 1H2023	6934	12/25/2041	12/25/2041	44.91	44.91	44.91	44.91	44.91	44.91	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	46.79	44.91	44.91
SPP South - Energy Price - 1H2023	6935	12/26/2041	12/26/2041	48.04	48.04	48.04	48.04	48.04	48.04	49.71	49.71	49.71	49.7	49.7	49.7	49.7	49.7	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	48.04	48.04
SPP South - Energy Price - 1H2023	6936	12/27/2041	12/27/2041	46.48	46.48	46.48	46.48	46.48	46.48	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	48.25	46.48	46.48
SPP South - Energy Price - 1H2023	6937	12/28/2041	12/28/2041	46.48	46.48	46.48	46.48	46.48	46.48	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	52.11	46.48	46.48
SPP South - Energy Price - 1H2023	6938	12/29/2041	12/29/2041	46.48	46.48	46.48	46.48	46.48	46.48	52.11	52.11	52.11	52.11	50.59	52.11	50.59	50.59	52.11	52.11	50.59	52.11	52.11	52.11	52.11	52.11	46.48	46.48
SPP South - Energy Price - 1H2023	6939	12/30/2041	12/30/2041	45.12	45.12	45.12	45.12	45.12	45.12	46.98	46.98	46.98	46.98	42.06	16.46	15.99	9.01	6.89	15.99	6.74	46.98	46.98	46.98	46.98	46.98	45.12	45.12
SPP South - Energy Price - 1H2023	6940	12/31/2041	12/31/2041	42.46	42.46	42.46	42.46	42.46	42.46	44.5	44.5	44.5	44.5	40.94	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	42.46	42.46
SPP South - Energy Price - 1H2023	6941	1/1/2042	1/1/2042	38.76	38.76	38.76	38.76	38.76	38.76	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	46.88	38.76	38.76
SPP South - Energy Price - 1H2023	6942	1/2/2042	1/2/2042	38.25	38.25	38.25	38.25	38.25	38.25	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	46.32	38.25	38.25
SPP South - Energy Price - 1H2023	6943	1/3/2042	1/3/2042	35.47	35.47	35.47	35.47	35.47	35.47	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	43.32	35.47	35.47
SPP South - Energy Price - 1H2023	6944	1/4/2042	1/4/2042	35.47	35.47	35.47	35.47	35.47	35.47	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	35.47	35.47
SPP South - Energy Price - 1H2023	6945	1/5/2042	1/5/2042	35.47	35.47	35.47	35.47	35.47	35.47	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	45.98	35.47	35.47
SPP South - Energy Price - 1H2023	6946	1/6/2042	1/6/2042	40.75	40.75	40.75	40.75	40.75	40.75	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	40.75	40.75
SPP South - Energy Price - 1H2023	6947	1/7/2042	1/7/2042	43.93	43.93	43.93	43.93	43.93	43.93	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	52.47	43.93	43.93
SPP South - Energy Price - 1H2023	6948	1/8/2042	1/8/2042	42.76	42.76	42.76	42.76	42.76	42.76	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	42.76	42.76
SPP South - Energy Price - 1H2023	6949	1/9/2042	1/9/2042	41.57	41.57	41.57	41.57	41.57	41.57	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	41.57	41.57
SPP South - Energy Price - 1H2023	6950	1/10/2042	1/10/2042	42.45	42.45	42.45	42.45	42.45	42.45	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	50.87	42.45	42.45
SPP South - Energy Price - 1H2023	6951	1/11/2042	1/11/2042	42.45	42.45	42.45	42.45	42.45	42.45	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	42.45	42.45
SPP South - Energy Price - 1H2023	6952	1/12/2042	1/12/2042	42.45	42.45	42.45	42.45	42.45	42.45	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03	42.45	42.45
SPP South - Energy Price - 1H2023	6953	1/13/2042	1/13/2042	42.25	42.25	42.25	42.25	42.25	42.25	50.65	50.65	50.65	50.65	50.65	50.65	50.65	50.65	46.6	50.65	50.65	50.65	50.65	50.65	50.65	50.65	42.25	42.25
SPP South - Energy Price - 1H2023	6954	1/14/2042	1/14/2042	48.77	48.77	48.77	48.77	48.77	48.77	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	48.77	48.77
SPP South - Energy Price - 1H2023	6955	1/15/2042	1/15/2042	51.25	51.25	51.25	51.25	51.25	51.25	60.38	60.38	60.38	60.38	60.38	60.38	60.38	58.03	60.38	60.38	60.38	60.38	60.38	60.38	60.38	60.38	51.25	51.25
SPP South - Energy Price - 1H2023	6956	1/16/2042	1/16/2042	45.92	45.92	45.92	45.92	45.92	45.92	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	54.62	45.92	45.92
SPP South - Energy Price - 1H2023	6957	1/17/2042	1/17/2042	45.59	45.59	45.59	45.59	45.59	45.59	54.26	54.26	10.69	8.41	8.41	8.41	7.69	7.19	8.41	8.41	8.41	54.26	54.26	54.26	54.26	54.26	45.59	45.59
SPP South - Energy Price - 1H2023	6958	1/18/2042	1/18/2042	45.59	45.59	45.59	45.59	45.59	45.59	59.1	59.1	59.1	59.1	20.73	20.73	20.73	20.73	20.73	20.73	59.1	59.1	59.1	59.1	59.1	59.1	45.59	45.59
SPP South - Energy Price - 1H2023	6959	1/19/2042	1/19/2042	45.59	45.59	45.59	45.59	45.59	45.59	59.1	59.1	59.1	59.1	59.1	57.59	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	45.59	45.59
SPP South - Energy Price - 1H2023	6960	1/20/2042	1/20/2042	39.32	39.32	39.32	39.32	39.32	39.32	47.48	47.48	47.48	47.48	47.48	47.48	46.48	43.68	47.48	47.48	47.48	47.48	47.48	47.48	47.48	47.48	39.32	39.32
SPP South - Energy Price - 1H2023	6961	1/21/2042	1/21/2042	38.09	38.09	38.09	38.09	38.09	38.09	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	46.15	38.09	38.09
SPP South - Energy Price - 1H2023	6962	1/22/2042	1/22/2042	35.75	35.75	35.75	35.75	35.75	35.75	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	43.62	35.75	35.75
SPP South - Energy Price - 1H2023	6963	1/23/2042	1/23/2042	40.07	40.07	40.07	40.07	40.07	40.07	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	48.29	40.07	40.07
SPP South - Energy Price - 1H2023	6964	1/24/2042	1/24/2042	45.3	45.3	45.3	45.3	45.3	45.3	53.94	53.94	53.94	53.94	53.94	53.94	53.94	49.63	53.94	49.63	49.63	53.94	53.94	53.94	53.94	53.94	45.3	45.3
SPP South - Energy Price - 1H2023	6965	1/25/2042	1/25/2042	45.3	45.3	45.3	45.3	45.3	45.3	58.71	58.71	58.71	57	26.61	26.61	20.34	25.11	26.61	26.61	26.61	58.71	58.71	58.71	58.71	58.71	45.3	45.3
SPP South - Energy Price - 1H2023	6966	1/26/2042	1/26/2042	45.3	45.3	45.3	45.3	45.3	45.3	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	58.71	45.3	45.3
SPP South - Energy Price - 1H2023	6967	1/27/2042	1/27/2042	40.44	40.44	40.44	40.44	40.44	40.44	48.69	48.69	48.69	48.69	48.69	44.79	44.79	44.79	44.69	6.32	44.79	48.69	48.69	48.69	48.69	48.69	40.43	40.43
SPP South - Energy Price - 1H2023	6968	1/28/2042	1/28/2042	39.78	39.78	39.78	39.78	39.78	39.78	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	47.98	39.78	39.78
SPP South - Energy Price - 1H2023	6969	1/29/2042	1/29/2042	38.94	38.94	38.94	38.94	38.94	38.94	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	38.94	38.94
SPP South - Energy Price - 1H2023	6970	1/30/2042	1/30/2042	39.61	39.61	39.61	39.61	39.61	39.61	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	49.71	39.61	39.61
SPP South - Energy Price - 1H2023	6971	1/31/2042	1/31/2042	39.61	39.61	39.12	39.12	39.61	39.82	49.88	50.13	49.18	49.18	49.18	49.18	49.18	49.17	49.17	49.18	49.17	49.18	49.18	49.18	49.18	49.18	42.32	40.95

SPP South - Energy Price - 1H2023	6972	2/1/2042	2/1/2042	27.75	27.38	27.38	27.38	27.38	27.38	32.68	32.68	32.68	32.68	31.84	31.84	31.84	31.84	31.84	31.84	31.84	32.68	32.68	32.68	32.68	32.68	27.38	27.38
SPP South - Energy Price - 1H2023	6973	2/2/2042	2/2/2042	27.38	27.38	27.38	27.38	27.38	27.38	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	32.68	33.53	33.49	33.46	32.68	27.38	27.38
SPP South - Energy Price - 1H2023	6974	2/3/2042	2/3/2042	26.68	26.68	26.68	26.68	26.68	26.68	32.85	32.85	32.85	32.85	32.85	32.85	30.22	28.27	17.57	30.22	32.85	32.85	32.85	32.85	32.85	32.85	26.68	26.68
SPP South - Energy Price - 1H2023	6975	2/4/2042	2/4/2042	26.51	26.51	26.51	26.51	26.51	26.51	32.67	32.67	32.67	32.67	32.67	32.67	30.05	12.15	15.67	28.11	30.05	32.67	32.67	32.67	32.67	32.67	26.51	26.51
SPP South - Energy Price - 1H2023	6976	2/5/2042	2/5/2042	27.42	27.42	27.42	27.42	27.42	27.42	33.63	33.63	33.63	5.3	0.87	0.87	0.87	0.87	0.87	0.87	0.87	3.73	33.63	33.63	33.63	33.63	27.42	27.42
SPP South - Energy Price - 1H2023	6977	2/6/2042	2/6/2042	27.26	27.26	27.26	27.26	27.26	27.26	33.47	33.47	33.47	33.47	33.47	32.14	30.79	30.79	28.82	30.79	30.79	33.47	33.47	33.47	33.47	33.47	27.26	27.26
SPP South - Energy Price - 1H2023	6978	2/7/2042	2/7/2042	26.42	26.42	26.42	26.42	26.42	26.42	32.57	32.57	32.57	32.57	32.57	32.57	31.55	7.15	29.96	28.02	29.96	32.57	32.57	32.57	32.57	32.57	26.42	26.42
SPP South - Energy Price - 1H2023	6979	2/8/2042	2/8/2042	26.42	26.42	26.42	26.42	26.42	26.42	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	26.42	26.42
SPP South - Energy Price - 1H2023	6980	2/9/2042	2/9/2042	26.42	26.42	26.42	26.42	26.42	26.42	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	31.53	26.42	26.42
SPP South - Energy Price - 1H2023	6981	2/10/2042	2/10/2042	30.9	30.9	30.9	30.9	30.9	30.9	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	37.35	30.9	30.9
SPP South - Energy Price - 1H2023	6982	2/11/2042	2/11/2042	30.84	30.84	30.84	30.84	30.84	30.84	37.28	37.28	37.28	37.28	37.28	34.3	34.3	37.28	34.3	34.3	37.28	37.28	37.28	37.28	37.28	37.28	30.84	30.84
SPP South - Energy Price - 1H2023	6983	2/12/2042	2/12/2042	40.45	40.45	40.45	40.45	40.45	40.45	47.53	47.53	40.85	5.3	5.76	4.39	4.39	4.24	4.19	4.19	4.39	47.53	47.53	47.53	47.53	47.53	40.45	40.45
SPP South - Energy Price - 1H2023	6984	2/13/2042	2/13/2042	32.47	32.47	32.47	32.47	32.47	32.47	39.03	39.03	36.75	33.75	32.6	7.08	23.15	4.24	31.22	31.22	31.22	39.03	39.03	39.03	39.03	39.03	32.47	32.47
SPP South - Energy Price - 1H2023	6985	2/14/2042	2/14/2042	30.06	30.06	30.06	30.06	30.06	30.06	36.45	36.45	36.45	36.45	16.19	16.19	15.88	4.24	16.19	16.19	36.45	36.45	36.45	36.45	36.45	36.45	30.06	30.06
SPP South - Energy Price - 1H2023	6986	2/15/2042	2/15/2042	30.06	30.06	30.06	30.06	30.06	30.06	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	30.06	30.06
SPP South - Energy Price - 1H2023	6987	2/16/2042	2/16/2042	30.06	30.06	30.06	30.06	30.06	30.06	35.87	35.87	35.87	35.87	35.87	35.87	35.87	12.55	35.87	35.87	35.87	35.87	35.87	35.87	35.87	35.87	30.06	30.06
SPP South - Energy Price - 1H2023	6988	2/17/2042	2/17/2042	28.17	30.69	30.62	30.7	30.74	30.77	38.45	38.45	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	36.92	37.54	39.89	42.81	38.45	38.21	33.78	33.97
SPP South - Energy Price - 1H2023	6989	2/18/2042	2/18/2042	36.93	34.34	34.14	33.97	34.06	33.97	39.01	39.9	38.45	38.45	36.58	35.37	37.15	35.63	35.37	35.37	36.9	38.45	38.45	38.45	38.45	38.45	29.04	29.04
SPP South - Energy Price - 1H2023	6990	2/19/2042	2/19/2042	27.58	27.58	27.58	27.58	27.58	29.98	36.41	36.41	36.41	31.22	5.25	5.25	4.5	4.72	4.84	5.03	5.25	36.41	36.41	36.41	36.41	36.41	27.16	27.16
SPP South - Energy Price - 1H2023	6991	2/20/2042	2/20/2042	28.64	28.64	28.64	28.64	28.64	28.64	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	29.06	28.64
SPP South - Energy Price - 1H2023	6992	2/21/2042	2/21/2042	28.64	28.33	28.33	28.33	28.33	28.88	34.84	35.61	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	28.33	28.33
SPP South - Energy Price - 1H2023	6993	2/22/2042	2/22/2042	28.33	28.33	28.33	28.33	28.33	28.33	33.82	33.82	5.74	5.57	5.02	5.05	5.16	5.16	5.16	5.16	5.16	5.45	33.82	33.82	33.82	33.82	28.33	28.33
SPP South - Energy Price - 1H2023	6994	2/23/2042	2/23/2042	28.33	28.33	28.33	28.33	28.33	28.33	33.82	33.82	33.82	5.55	5.02	5.05	5.16	5.41	5.55	5.77	5.65	5.55	33.82	33.82	33.82	33.82	28.33	28.33
SPP South - Energy Price - 1H2023	6995	2/24/2042	2/24/2042	29.35	29.35	29.35	29.35	29.35	29.35	31.5	30.56	5.01	4.86	28.11	30.56	28.11	30.56	28.11	17.79	28.11	35.54	35.92	35.92	35.92	35.92	29.35	29.35
SPP South - Energy Price - 1H2023	6996	2/25/2042	2/25/2042	27.03	27.03	27.03	27.03	27.03	27.03	33.45	33.45	33.45	28.6	4.38	4.4	4.5	4.72	4.84	5.03	4.93	4.84	33.45	33.45	33.45	33.45	27.03	27.03
SPP South - Energy Price - 1H2023	6997	2/26/2042	2/26/2042	29.58	29.58	29.58	29.58	29.58	29.58	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	36.16	29.58	29.58
SPP South - Energy Price - 1H2023	6998	2/27/2042	2/27/2042	28.76	28.45	28.45	28.45	28.45	28.45	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	34.96	10.43	34.96	34.96	34.96	34.96	34.96	34.96	28.45	28.45
SPP South - Energy Price - 1H2023	6999	2/28/2042	2/28/2042	25.89	25.89	25.89	25.89	25.89	25.89	32.22	32.22	32.22	32.22	32.22	32.22	32.22	27.61	27.52	27.57	29.64	32.22	32.22	32.22	32.22	32.22	25.89	25.89
SPP South - Energy Price - 1H2023	7000	3/1/2042	3/1/2042	14.56	14.56	14.56	14.56	14.56	14.56	17.57	17.57	17.34	17.34	17.27	17.34	17.34	17.34	17.57	17.57	17.57	17.57	17.57	17.57	17.57	17.57	14.56	14.56
SPP South - Energy Price - 1H2023	7001	3/2/2042	3/2/2042	14.56	14.56	14.56	14.56	14.56	14.56	17.57	17.57	17.57	17.57	17.57	17.57	17.57	17.34	17.34	17.57	17.57	17.57	17.57	17.57	17.57	17.57	14.56	14.56
SPP South - Energy Price - 1H2023	7002	3/3/2042	3/3/2042	15.62	15.62	15.62	15.62	15.62	15.62	21.25	21.25	21.25	5.08	5.04	5.04	2.86	4.98	5.04	5.04	5.04	5.04	20.12	21.25	21.25	21.25	15.62	15.62
SPP South - Energy Price - 1H2023	7003	3/4/2042	3/4/2042	15.9	15.9	15.9	15.9	15.9	15.9	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	21.58	15.9	15.9
SPP South - Energy Price - 1H2023	7004	3/5/2042	3/5/2042	16.31	16.31	16.31	16.31	16.31	16.31	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	22.06	16.31	16.31
SPP South - Energy Price - 1H2023	7005	3/6/2042	3/6/2042	17.09	17.09	17.09	17.09	17.09	17.41	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	17.09	17.09
SPP South - Energy Price - 1H2023	7006	3/7/2042	3/7/2042	16.09	16.09	16.09	16.09	16.09	16.09	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	16.09	16.09
SPP South - Energy Price - 1H2023	7007	3/8/2042	3/8/2042	16.09	16.09	16.09	16.09	16.09	16.09	19.41	19.41	19.41	3.25	2.93	2.95	0	3.16	3.24	3.24	3.3	19.41	19.41	19.41	19.41	19.41	16.09	16.09
SPP South - Energy Price - 1H2023	7008	3/9/2042	3/9/2042	16.09	16.09	16.09	16.09	16.09	16.09	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	19.41	16.09	16.09
SPP South - Energy Price - 1H2023	7009	3/10/2042	3/10/2042	16.83	16.83	16.83	16.83	16.83	16.83	21.71	21.71	21.71	21.71	21.71	21.71	19.98	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	16.83	16.83
SPP South - Energy Price - 1H2023	7010	3/11/2042	3/11/2042	16.73	16.73	16.73	16.73	16.73	16.73	21.6	21.6	21.6	21.6	21.6	19.87	19.87	19.87	19.87	19.87	19.87	21.6	21.6	21.6	21.6	21.6	16.73	16.73
SPP South - Energy Price - 1H2023	7011	3/12/2042	3/12/2042	16.49	16.49	16.49	16.49	16.49	16.5	21.32	21.32	21.32	3.09	3.07	2.8	2.86	3	3.07	3.07	5.69	9.26	21.32	21.32	21.32	21.32	16.5	16.5
SPP South - Energy Price - 1H2023	7012	3/13/2042	3/13/2042	19.89	19.89	19.89	19.89	19.89	19.89	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	25.28	19.89	19.89
SPP South - Energy Price - 1H2023	7013	3/14/2042	3/14/2042	17.91	17.91	17.91	17.91	17.91	17.91	22.97	22.29	3.18	3.09	2.78	2.8	0.48	3.18	14.16	14.76	16.82	22.97	22.97	22.97	22.97	22.97	17.91	17.91
SPP South - Energy Price - 1H2023	7014	3/15/2042	3/15/2042	17.91	17.91	17.91	17.91	17.91	17.91	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	21.61	17.91	17.91
SPP South - Energy Price - 1H2023	7015	3/16/2042	3/16/2042	17.91	17.91	17.91	17.91	17.91	17.91	21.61	21.61	21.61	21.61	21.61	21.61	21.61	20.75	21.61	18.27	21.61	21.61	21.61	21.61	21.61	21.61	17.91	17.91
SPP South - Energy Price - 1H2023	7016	3/17/2042	3/17/2042	18.37	18.37	18.37	18.37	18.37	18.37	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	23.58	18.37	18.37
SPP South - Energy Price - 1H2023	7017	3/18/2042	3/18/2042	17.22	17.22	17.22	17.22	17.22	17.22	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	17.22	17.22
SPP South - Energy Price - 1H2023	7018	3/19/2042	3/19/2042	16.42	16.42	16.42	16.42	16.42	16.42	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	21.31	16.42	16.42
SPP South - Energy Price - 1H2023	7019	3/20/2042	3/20/2042	15.73	15.73	15.73	15.73	15.73	15.73	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	21.36	15.73	15.73
SPP South - Energy Price - 1H2023	7020	3/21/2042	3/21/2042	14.28	14.28	14.28	14.28	14.28	14.28	19.66	19.66	16.35	16.35	16.35	16.35	16.35	17.73	16.35	19.66	19.66	19.66	19.66	19.66	19.66	19.66	14.28	14.28
SPP South - Energy Price - 1H2023	7021	3/22/2042	3/22/2042	14.28	14.28	14.28	14.28	14.28	14.28	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	17.23	14.28	14.28
SPP South - Energy Price - 1H2023	7022	3/23/2042	3/23/2042	14.28	14.28	14.28	14.28	14.28	14.28	17.23	17.23	17.23	4.2	0	0	0	0	0	0	0	4.72	17.23	17.23	17.23	17.23	14.28	14.28
SPP South - Energy Price - 1H2023	7023	3/24/2042	3/24/2042	14.28	13.62	14.28	14.28	14.28	14.28	17.36	7.53	4.14	3.99	7.47	7.53	8.19	8.19	8.19	5.57	20.32	20.32	20.32	20.32	20.32	20.32	14.84	14.84
SPP South - Energy Price - 1H2023	7024	3/25/2042	3/25/2042	15.79	15.79	15.79	15.79	15.79	15.79	21.43	21.43	21.43	21.43	21.43	5.7	18.05	19.72	19.72	4.51	21.43	21.43	21.43	21.43	21.43	21.43	15.79	15.79
SPP South - Energy Price - 1H2023	7025	3/26/2042	3/26/2042	16.04	16.04	16.04	16.04	16.04	16.04	21.73	21.73	21.73	19.99	19.99	18.61	19.99	19.99	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	16.04	16.04
SPP South - Energy Price - 1H2023	7026	3/27/2042	3/27/2042	16.2	16.2	16.2	16.2	16.2	16.2	21.91	21.91	21.91	21.91	21.91	21.91	21.91	21.91	21.91	20.16	21.91	21.91	21.91	21.91	21.91	21.91	16.2	16.2
SPP South - Energy Price - 1H2023	7027	3/28/2042	3/28/2042	15.21	15.21	15.21	15.21	15.21	15.21	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	15.21	15.21
SPP South - Energy Price - 1H2023	7028	3/29/2042	3/29/2042	15.21	15.21	15.21	15.21	15.21	15.21	18.35	18.35	18.35	16.88	18.35	5.45	5.45	4.45	4.44	4.75	5.45	18.35	18.35	18.35	18.35	18.35	15.21	15.21
SPP South - Energy Price - 1H2023	7029	3/30/2042	3/30/2042	15.21	15.21	15.21	15.21	15.21	15.21	18.35	18.35	16.88	16.88	18.35	16.88	18.35	18.35	16.88	18.35	18.35	18.35	18.35	18.35	18.35	18.35	15.21	15.21
SPP South - Energy Price - 1H2023	7030	3/31/2042	3/31/2042	14.95	14.95	14.95	14.95	14.95	14.95	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	20.44	14.95	14.95
SPP South - Energy Price - 1H2023	7031	4/1/2042	4/1/2042	5.41	5.41	5.41	5.41	5.41	5.41	1.55	1.31	0.55	0.28	0.28	0.28	0.55	0.6	0.55	0.57	0.55	1.55	1.55	1.55	1.55	1.55	5.41	5.41
SPP South - Energy Price - 1H2023	7032	4/2/2042	4/2/2042	5.7	5.7	5.7	5.7	5.7	5.7	1.61	1.61	1.38	1.36	1.36	1.36	1.36	1.35	1.61	1.61	1.6	1.61	1.61	1.61	1.61	1.61	5.7	5.7
SPP South - Energy Price - 1H2023	7033	4/3/2042	4/3/2042	5.52	5.52	5.52	5.52	5.52	5.52	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	5.52	5.52
SPP South - Energy Price - 1H2023	7034	4/4/2042	4/4/2042	5.43	5.43	5.43	5.43	5.43	5.43	1.55	1.55	0.64	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.36	0.45	1.29	1.55	1.55	1.55	5.43	5.43
SPP South - Energy Price - 1H2023	7035	4/5/2042	4/5/2042	5.43	5.43	5.43	5.43	5.43	5.43	6.39	6.39	0.22	0	0	0	0	0	0	0	0.18	1.56	6.39	6.39	6.39	6.39	5.43	5.43
SPP South - Energy Price - 1H2023	7036	4/6/2042	4/6/2042	5.43	5.43	5.43	5.43	5.43	5.43	6.39	6.39	6.39	5.87	6.1	5.87	5.87	5.87	5.87	6.09	6.39	6.39	6.91	6.91	6.39	6.39	5.43	5.43
SPP South - Energy Price - 1H2023	7037	4/7/2042	4/7/2042	5.4	5.4	5.4	5.4	5.4	5.4	1.53	1.53	1.53	1.53	1.53	1.53	0.8	0.6	0.61	1.41	1.41	1.53	1.53	1.53	1.53	1.53	5.4	5.4
SPP South - Energy Price - 1H2023	7038	4/8/2042	4/8/2042	5.49	5.49	5.49	5.49	5.49	5.49	1.55	1.55	1.55	1.42	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.55	1.55	1.55	1.55	1.55	5.49	5.49
SPP South - Energy Price - 1H2023	7039	4/9/2042	4/9/2042	5.56	5.56	5.56	5.56	5.56	5.56	1.57	1.44	0.29	0.28	0.28	0.32	0.29	0.3	0.42	1.32	1.57	1.57	1.57	1.57	1.57	1.57	5.56	5.56
SPP South - Energy Price - 1H2023	7040	4/10/2042	4/10/2042	5.45	5.45	5.45	5.45	5.45	5.45	1.48	1.41	0.77	0.32	0.32	0.32	0.32	0.32	0.3	0.32	0.33	0.45	1.38	1.48	1.48	1.48	5.45	5.45
SPP South - Energy Price - 1H2023	7041	4/11/2042	4/11/2042	5.34	5.34	5.34	5.34	5.34	5.34	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	5.34	5.34
SPP South - Energy Price - 1H2023	7042	4/12/2042	4/12/2042	5.34	5.34	5.34	5.34	5.34	5.34	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	5.34	5.34
SPP South - Energy Price - 1H2023	7043	4/13/2042	4/13/2042	5.34	5.34	5.34	5.34	5.34	5.34	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	5.34	5.34
SPP South - Energy Price - 1H2023	7044	4/14/2042	4/14/2042	5.3	5.3	5.3	5.3	5.3	5.3	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	5.3	5.3
SPP South - Energy Price - 1H2023	7045	4/15/2042	4/15/2042	5.34	5.34	5.34	5.34	5.34	5.34	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.42	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	5.34	5.34
SPP South - Energy Price - 1H2023	7046	4/16/2042	4/16/2042	5.27	5.27	5.27	5.27	5.27	5.27	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	5.27	5.27
SPP South - Energy Price - 1H2023	7047	4/17/2042	4/17/2042	5.18	5.18	5.18	5.18	5.18	5.18	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	5.18	5.18
SPP South - Energy Price - 1H2023	7048	4/18/2042	4/18/2042	5.11	5.11	5.11	5.11	5.11	5.11	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	5.11	5.11
SPP South - Energy Price - 1H2023	7049	4/19/2042	4/19/2042	5.11	5.11	5.11	5.11	5.11	5.11	6.01	6.01	6.01	6.01	1.57	1.57	1.57	1.57	1.57	1.57	1.63	6.01	6.01	6.01	6.01	6.01	5.11	5.11
SPP South - Energy Price - 1H2023	7050	4/20/2042	4/20/2042	5.11	5.11	5.11	5.11	5.11	5.11	6.01	6.01	5.53	5.53	5.31	5.53	5.55	5.53	6.01	5.54	6.01	6.01	6.01	6.01	6.01	6.01	5.11	5.11
SPP South - Energy Price - 1H2023	7051	4/21/2042	4/21/2042	5.32	5.32	5.32	5.32	5.32	5.32	1.45	1.27	1.27	1.16	1.17	1.17	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	5.32	5.32
SPP South - Energy Price - 1H2023	7052	4/22/2042	4/22/2042	5.39	5.39	5.39	5.39	5.39	5.39	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	5.39	5.39
SPP South - Energy Price - 1H2023	7053	4/23/2042	4/23/2042	5.37	5.37	5.37	5.37	5.37	5.37	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	5.37	5.37
SPP South - Energy Price - 1H2023	7054	4/24/2042	4/24/2042	5.21	5.21	5.21	5.21	5.21	5.21	1.43	1.43	1.43	1.43	1.31	1.43	1.43	1.43	1.43	0.51	1.24	1.43	1.43	1.43	1.43	1.43	5.21	5.21

SPP South - Energy Price - 1H2023	7055	4/25/2042	4/25/2042	5.09	5.09	5.09	5.09	5.09	5.09	1.4	1.32	0.27	0.21	0.27	0.27	0.27	0.27	0.31	1.4	1.4	1.4	1.4	1.4	1.4	1.4	5.09	5.09
SPP South - Energy Price - 1H2023	7056	4/26/2042	4/26/2042	5.09	5.09	5.09	5.09	5.09	5.09	5.98	5.98	5.98	5.5	5.5	5.5	2.06	5.5	5.5	5.5	5.5	5.98	5.98	5.98	5.98	5.98	5.09	5.09
SPP South - Energy Price - 1H2023	7057	4/27/2042	4/27/2042	5.09	5.09	5.09	5.09	5.09	5.09	5.98	5.5	5.21	5.5	5.5	5.5	5.5	5.49	5.5	5.98	5.98	5.98	5.98	5.98	5.98	5.98	5.09	5.09
SPP South - Energy Price - 1H2023	7058	4/28/2042	4/28/2042	5.04	5.04	5.04	5.04	5.04	5.04	1.38	1.38	0.54	0.59	0.54	0.54	0.49	0.49	0.54	0.49	0.54	1.38	1.38	1.38	1.38	1.38	5.04	5.04
SPP South - Energy Price - 1H2023	7059	4/29/2042	4/29/2042	5.12	5.12	5.12	5.12	5.12	5.12	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.29	1.29	1.4	1.4	1.4	1.4	1.4	1.4	5.12	5.12
SPP South - Energy Price - 1H2023	7060	4/30/2042	4/30/2042	5.22	5.22	5.22	5.22	5.22	5.22	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	5.22	5.22
SPP South - Energy Price - 1H2023	7061	5/1/2042	5/1/2042	6.02	6.02	6.02	6.02	6.02	6.02	3.48	3.24	1.33	1.29	1.29	1.29	0.99	1.29	1.29	1.29	1.29	3.48	3.48	3.48	3.48	3.48	6.02	6.02
SPP South - Energy Price - 1H2023	7062	5/2/2042	5/2/2042	5.87	5.87	5.87	5.87	5.87	5.87	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	5.87	5.87
SPP South - Energy Price - 1H2023	7063	5/3/2042	5/3/2042	5.87	5.87	5.87	5.87	5.87	5.87	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	5.87	5.87
SPP South - Energy Price - 1H2023	7064	5/4/2042	5/4/2042	5.87	5.87	5.87	5.87	5.87	5.87	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	5.87	5.87
SPP South - Energy Price - 1H2023	7065	5/5/2042	5/5/2042	6.05	6.05	6.05	6.05	6.05	6.05	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	6.05	6.05
SPP South - Energy Price - 1H2023	7066	5/6/2042	5/6/2042	6.36	6.36	6.36	6.36	6.36	6.36	3.65	3.65	3.65	3.65	3.65	3.36	3.36	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	6.36	6.36
SPP South - Energy Price - 1H2023	7067	5/7/2042	5/7/2042	6.46	6.46	6.46	6.46	6.46	6.46	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	6.46	6.46
SPP South - Energy Price - 1H2023	7068	5/8/2042	5/8/2042	6.51	6.51	6.51	6.51	6.51	6.51	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	6.51	6.51
SPP South - Energy Price - 1H2023	7069	5/9/2042	5/9/2042	6.47	6.47	6.47	6.47	6.47	6.47	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	6.47	6.47
SPP South - Energy Price - 1H2023	7070	5/10/2042	5/10/2042	6.47	6.47	6.47	6.47	6.47	6.47	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	6.47	6.47
SPP South - Energy Price - 1H2023	7071	5/11/2042	5/11/2042	6.47	6.47	6.47	6.47	6.47	6.47	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	6.47	6.47
SPP South - Energy Price - 1H2023	7072	5/12/2042	5/12/2042	6.79	6.79	6.79	6.8	6.8	6.8	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	6.8	6.8
SPP South - Energy Price - 1H2023	7073	5/13/2042	5/13/2042	6.92	6.92	6.92	6.92	6.92	6.92	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	6.92	6.92
SPP South - Energy Price - 1H2023	7074	5/14/2042	5/14/2042	6.77	6.77	6.77	6.77	6.77	6.77	3.86	1.9	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	3.86	3.86	3.86	3.86	3.86	6.77	6.77
SPP South - Energy Price - 1H2023	7075	5/15/2042	5/15/2042	6.69	6.69	6.69	6.69	6.69	6.69	3.82	3.33	3.32	3.32	3.32	3.32	3.32	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	6.69	6.69
SPP South - Energy Price - 1H2023	7076	5/16/2042	5/16/2042	6.37	6.37	6.37	6.37	6.37	6.37	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	6.37	6.37
SPP South - Energy Price - 1H2023	7077	5/17/2042	5/17/2042	6.37	6.37	6.37	6.37	6.37	6.37	7.18	6.61	6.61	6.29	6.61	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	6.37	6.37
SPP South - Energy Price - 1H2023	7078	5/18/2042	5/18/2042	6.37	6.37	6.37	6.37	6.37	6.37	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	7.18	6.37	6.37
SPP South - Energy Price - 1H2023	7079	5/19/2042	5/19/2042	5.7	5.7	5.7	5.7	5.7	5.7	3.32	3.32	3.25	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	5.7	5.7
SPP South - Energy Price - 1H2023	7080	5/20/2042	5/20/2042	6.61	6.61	6.61	6.61	6.61	6.61	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	6.61	6.61
SPP South - Energy Price - 1H2023	7081	5/21/2042	5/21/2042	6.93	6.93	6.93	6.93	6.93	6.93	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	6.93	6.93
SPP South - Energy Price - 1H2023	7082	5/22/2042	5/22/2042	6.97	6.97	6.97	6.97	6.97	6.97	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	6.97	6.97
SPP South - Energy Price - 1H2023	7083	5/23/2042	5/23/2042	7.09	7.09	7.09	7.09	7.09	7.09	4.02	4.02	4.02	3.7	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	7.09	7.09
SPP South - Energy Price - 1H2023	7084	5/24/2042	5/24/2042	7.09	7.09	7.09	7.09	7.09	7.09	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7.09	7.09
SPP South - Energy Price - 1H2023	7085	5/25/2042	5/25/2042	7.09	7.09	7.09	7.09	7.09	7.09	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7.09	7.09
SPP South - Energy Price - 1H2023	7086	5/26/2042	5/26/2042	7.09	7.09	7.09	7.09	7.09	7.09	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	7.09	7.09
SPP South - Energy Price - 1H2023	7087	5/27/2042	5/27/2042	6.87	6.87	6.87	6.87	6.87	6.87	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	6.87	6.87
SPP South - Energy Price - 1H2023	7088	5/28/2042	5/28/2042	6.83	6.83	6.83	6.83	6.83	6.83	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	6.83	6.83
SPP South - Energy Price - 1H2023	7089	5/29/2042	5/29/2042	6.64	6.64	6.64	6.64	6.64	6.64	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	6.64	6.64
SPP South - Energy Price - 1H2023	7090	5/30/2042	5/30/2042	6.57	6.57	6.57	6.57	6.57	6.57	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	6.57	6.57
SPP South - Energy Price - 1H2023	7091	5/31/2042	5/31/2042	6.57	6.57	6.57	6.57	6.57	6.57	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.57	6.57
SPP South - Energy Price - 1H2023	7092	6/1/2042	6/1/2042	24.84	24.84	24.84	24.84	24.84	24.84	24.97	24.97	24.97	24.97	24.01	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.84	24.84
SPP South - Energy Price - 1H2023	7093	6/2/2042	6/2/2042	22.82	22.82	22.82	22.82	22.82	22.82	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.23	22.82	22.82
SPP South - Energy Price - 1H2023	7094	6/3/2042	6/3/2042	25.36	25.36	25.36	25.36	25.36	25.36	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	24.39	25.36	25.36
SPP South - Energy Price - 1H2023	7095	6/4/2042	6/4/2042	25.55	25.55	25.55	25.55	25.55	25.55	24.55	24.55	24.55	24.55	24.55	24.55	24.55	24.72	26.2	24.62	24.55	24.72	24.72	25.29	24.72	24.72	25.55	25.55
SPP South - Energy Price - 1H2023	7096	6/5/2042	6/5/2042	25.38	25.38	25.38	25.38	25.38	25.38	24.41	24.41	24.41	24.41	24.41	24.41	24.41	24.41	24.56	25.96	24.41	24.56	25.1	24.56	24.56	24.56	25.38	25.38
SPP South - Energy Price - 1H2023	7097	6/6/2042	6/6/2042	23.17	23.17	23.17	23.17	23.17	23.17	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	23.17	23.17
SPP South - Energy Price - 1H2023	7098	6/7/2042	6/7/2042	23.17	23.17	23.17	23.17	23.17	23.17	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.17	23.17
SPP South - Energy Price - 1H2023	7099	6/8/2042	6/8/2042	23.17	23.17	23.17	23.17	23.17	23.17	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.29	23.17	23.17
SPP South - Energy Price - 1H2023	7100	6/9/2042	6/9/2042	25.46	25.46	25.46	25.46	25.46	25.46	24.47	24.47	24.47	24.47	24.47	23.6	23.83	24.47	24.47	24.47	24.47	24.47	24.47	24.47	24.47	24.47	25.46	25.45
SPP South - Energy Price - 1H2023	7101	6/10/2042	6/10/2042	23.3	23.3	23.3	23.3	23.3	23.3	21.17	19.47	7.39	19.47	22.64	22.64	20.83	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	22.64	23.3	23.3
SPP South - Energy Price - 1H2023	7102	6/11/2042	6/11/2042	23.22	23.22	23.22	23.22	23.22	23.22	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	22.57	23.22	23.22
SPP South - Energy Price - 1H2023	7103	6/12/2042	6/12/2042	24.7	24.7	24.7	24.7	24.7	24.7	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	24.7	24.7
SPP South - Energy Price - 1H2023	7104	6/13/2042	6/13/2042	24.8	24.8	24.8	24.8	24.8	24.8	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	23.92	24.8	24.8
SPP South - Energy Price - 1H2023	7105	6/14/2042	6/14/2042	24.8	24.8	24.8	24.8	24.8	24.8	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	25.05	24.93	24.93	24.93	24.8	24.8
SPP South - Energy Price - 1H2023	7106	6/15/2042	6/15/2042	24.8	24.8	24.8	24.8	24.8	24.8	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	24.93	25.85	26.44	25.1	24.8	24.8
SPP South - Energy Price - 1H2023	7107	6/16/2042	6/16/2042	26	26	26	26	26	26	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	24.94	26.04	26.04
SPP South - Energy Price - 1H2023	7108	6/17/2042	6/17/2042	26.16	26.16	26.16	26.16	26.16	26.16	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	26.16	26.16
SPP South - Energy Price - 1H2023	7109	6/18/2042	6/18/2042	26.72	26.76	26.67	26.76	26.76	26.76	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	25.26	27.65	27.65
SPP South - Energy Price - 1H2023	7110	6/19/2042	6/19/2042	27.65	27.65	27.65	27.65	27.65	27.65	25.91	25.91	25.91	25.91	25.91	25.91	25.91	25.91	25.91	25.94	25.91	25.94	27.83	25.94	28.77	25.94	28.29	28.06
SPP South - Energy Price - 1H2023	7111	6/20/2042	6/20/2042	27.21	27.23	27.17	26.5	27.25	27.25	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	25.01	26.47	26.08
SPP South - Energy Price - 1H2023	7112	6/21/2042	6/21/2042	26.08	26.08	26.08	26.08	26.08	26.08	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.08	26.08
SPP South - Energy Price - 1H2023	7113	6/22/2042	6/22/2042	26.08	26.08	26.08	26.08	26.08	26.08	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.22	26.08	26.08
SPP South - Energy Price - 1H2023	7114	6/23/2042	6/23/2042	23.36	23.36	23.36	23.36	23.36	23.36	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	23.36	23.36
SPP South - Energy Price - 1H2023	7115	6/24/2042	6/24/2042	24.53	24.53	24.53	24.53	24.53	24.53	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	23.69	24.53	24.53
SPP South - Energy Price - 1H2023	7116	6/25/2042	6/25/2042	25.4	25.28	25.28	25.4	25.4	25.4	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	24.32	25.28	25.28
SPP South - Energy Price - 1H2023	7117	6/26/2042	6/26/2042	21.43	21.43	21.43	21.43	21.43	21.43	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.04	21.43	21.43
SPP South - Energy Price - 1H2023	7118	6/27/2042	6/27/2042	24.89	24.89	24.89	24.89	24.89	24.89	24	24	24	24	24	24	24	24	24	24	24	24.36	25.56	24	24	24	24.89	24.89
SPP South - Energy Price - 1H2023	7119	6/28/2042	6/28/2042	24.89	24.89	24.89	24.89	24.89	24.89	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.06	25.02	25.02	25.02	25.02	24.89	24.89
SPP South - Energy Price - 1H2023	7120	6/29/2042	6/29/2042	24.89	24.89	24.89	24.89	24.89	24.89	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.02	25.09	25.18	25.04	24.89	24.89
SPP South - Energy Price - 1H2023	7121	6/30/2042	6/30/2042	26.86	26.86	26.86	26.86	26.86	26.86	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	26.86	26.86
SPP South - Energy Price - 1H2023	7122	7/1/2042	7/1/2042	50.69	49.45	49.41	49.41	50.69	50.69	47.8	47.8	47.8	51.07	51.37	50.39	54.44	51.38	58.69	59.59	60.58	60.58	62.13	60.58	60.58	61.37	61.92	56.18
SPP South - Energy Price - 1H2023	7123	7/2/2042	7/2/2042	55.79	55.34	54.35	53.84	53.93	55.27	51.74	53.16	53.94	53.01	59.14	59.1	58.76	58.41	54.29	56.33	53.42	59.4	61.53	61.53	59.86	60.41	55.2	54.35
SPP South - Energy Price - 1H2023	7124	7/3/2042	7/3/2042	53.74	50.66	51.02	51.06	53.74	53.74	50.28	48.85	46.41	46.41	46.41	46.41	46.41	46.41	52	49.04	56.87	56.87	60.18	60.18	56.87	58.05	64.12	54.18
SPP South - Energy Price - 1H2023	7125	7/4/2042	7/4/2042	54.39	53.62	53.52	51.52	51.35	51.48	46.41	46.41	46.41	46.41	48.34	48.01	50.19	49.82	52.02	56.5	58.63	58.63	60.18	58.99	60.18	59.64	64.12	63.05
SPP South - Energy Price - 1H2023	7126	7/5/2042	7/5/2042	54.69	54.09	51.02	50.62	50.75	49.49	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	60.81	66.12	68.69	66.63	61.88	53.91	51.91
SPP South - Energy Price - 1H2023	7127	7/6/2042	7/6/2042	51.72	49.63	47.79	47.79	49.86	49.49	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	54.75	55.62	60.61	59.08	56.99	48.67	48.67
SPP South - Energy Price - 1H2023	7128	7/7/2042	7/7/2042	48.67	48.67	48.67	48.67	48.67	48.67	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	47.17	49.15	49.15
SPP South - Energy Price - 1H2023	7129	7/8/2042	7/8/2042	49.15	49.15	49.15	49.15	49.15	49.15	47.58	47.58	47.58	47.58	47.58	47.58	47.58	47.58	47.58	50.09	47.58	48.07	47.58	47.58	47.58	47.58	49.15	49.15
SPP South - Energy Price - 1H2023	7130	7/9/2042	7/9/2042	49.57	49.57	49.57	49.57	49.57	49.57	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	49.57	49.57
SPP South - Energy Price - 1H2023	7131	7/10/2042	7/10/2042	51.18	51.18	51.18	51.18	51.18	51.18	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	49.32	51.18	51.18
SPP South - Energy Price - 1H2023	7132	7/11/2042	7/11/2042	49.69	49.69	49.69	49.69	49.69	49.69	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	48.04	49.23	48.04	48.04	55.06	49.69
SPP South - Energy Price - 1H2023	7133	7/12/2042	7/12/2042	49.69	49.69	49.69	49.69	49.69	49.69	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	57.9	56.92	56.92	56.92	49.69	49.69
SPP South - Energy Price - 1H2023	7134	7/13/2042	7/13/2042	49.69	49.69	49.69	49.69	49.69	49.69	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	56.92	60.14	56.93	49.69	49.69
SPP South - Energy Price - 1H2023	7135	7/14/2042	7/14/2042	48.16	48.16	48.16	48.16	48.16	48.16	46.73	46.73	46.73	46.73	46.73	46.73	49.92	50.18	50.14	49.46	49.29	54.46	57.5	55.33	58.62	54.46	55.06	54.62
SPP South - Energy Price - 1H2023	7136	7/15/2042	7/15/2042	54.54	54.09	51.79	52.66	52.65	53.37	47	47	47	47	47	49.52	49.59	48.39	48.02	47	49.59	49.59	58.96	50.75	49.59	53.63	53.98	48.48
SPP South - Energy Price - 1H2023	7137	7/16/2042	7/16/2042	47.32	47.32	47.32	47.32	47.32	47.32	46	46	46	46	46	46	46	46	46	46	46	46	47.63	48.2	46	46	47.32	47.32

SPP South - Energy Price - 1H2023	7138	7/17/2042	7/17/2042	46.09	46.09	46.09	46.09	46.09	46.09	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	47.24	48.43	44.94	46.91	46.09
SPP South - Energy Price - 1H2023	7139	7/18/2042	7/18/2042	45.67	45.67	45.67	45.67	45.67	45.67	44.58	44.58	44.58	47.19	46.68	46.94	44.58	44.58	44.58	44.81	44.58	45.92	47.25	46.94	47.66	46.94	46.42	45.67
SPP South - Energy Price - 1H2023	7140	7/19/2042	7/19/2042	45.67	45.67	45.67	45.67	45.67	45.67	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	55.61	53.43	54.11	52.67	45.67	45.67
SPP South - Energy Price - 1H2023	7141	7/20/2042	7/20/2042	45.67	45.67	45.67	45.67	45.67	45.67	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.31	52.92	52.31	52.31	52.67	46.42	45.67
SPP South - Energy Price - 1H2023	7142	7/21/2042	7/21/2042	45.67	45.54	45.67	45.67	45.67	45.67	44.47	44.47	44.47	44.47	44.47	44.47	44.47	44.47	44.47	44.47	44.47	45.4	52.18	47.65	46.38	46.58	46.85	45.54
SPP South - Energy Price - 1H2023	7143	7/22/2042	7/22/2042	45.96	45.96	45.96	45.96	45.96	45.96	44.84	44.84	44.84	44.84	44.84	44.84	45.33	45.7	44.84	44.84	45.57	46.34	47.41	47.36	46.62	46.34	46.38	45.98
SPP South - Energy Price - 1H2023	7144	7/23/2042	7/23/2042	46.27	46.27	46.27	46.27	46.27	46.27	45.1	45.1	45.1	45.1	46.22	46.15	45.97	47.11	47.11	46.24	46.75	47.11	51.53	49.52	48.57	45.1	47.81	47.74
SPP South - Energy Price - 1H2023	7145	7/24/2042	7/24/2042	47.09	47.09	47.09	47.09	47.09	47.09	47.97	45.8	45.8	45.8	46.48	56.47	56.75	57.9	57.9	57.9	57.9	57.9	57.9	58.06	57.9	56.73	48.72	48.4
SPP South - Energy Price - 1H2023	7146	7/25/2042	7/25/2042	46.54	47.89	46.66	47.89	47.89	47.89	47.88	47.11	47.31	47.84	47.35	45.33	47.98	52.28	52.37	52.28	52.28	52.09	54.9	52.49	52.28	50.95	48.11	46.6
SPP South - Energy Price - 1H2023	7147	7/26/2042	7/26/2042	46.54	46.54	46.54	46.54	46.54	46.54	53.32	53.32	54.85	53.64	54.38	54.15	54.85	54.36	54.28	54.85	53.32	53.32	57.96	54.85	54.18	54.51	46.67	46.6
SPP South - Energy Price - 1H2023	7148	7/27/2042	7/27/2042	46.54	46.54	46.54	46.54	46.54	46.54	53.32	53.32	53.32	53.32	53.32	53.32	53.32	53.32	53.32	53.32	53.32	54.85	57.96	57.96	57.96	57.96	46.74	46.61
SPP South - Energy Price - 1H2023	7149	7/28/2042	7/28/2042	45.92	45.92	45.92	45.92	45.92	45.92	44.8	44.8	44.8	44.8	44.8	46.18	45.67	47.19	47.77	46.61	54.91	54.91	57.93	57.93	54.91	54.91	52.54	52.41
SPP South - Energy Price - 1H2023	7150	7/29/2042	7/29/2042	50.83	50.83	49.83	47.45	47.95	50.83	48.13	45.55	45.55	45.55	46.68	46.48	49.16	55.59	56.92	58.98	58.98	58.98	58.98	58.98	58.98	57.54	55.96	52.4
SPP South - Energy Price - 1H2023	7151	7/30/2042	7/30/2042	49.23	47.49	47.49	47.49	49.23	49.23	48.62	46.15	46.15	46.15	46.15	46.29	47.16	48.45	49.06	47.99	48.72	49.34	51.37	53.07	50.09	49.34	52.12	47.83
SPP South - Energy Price - 1H2023	7152	7/31/2042	7/31/2042	47.71	47.71	47.59	47.59	47.59	47.71	46.23	46.23	48.15	46.23	47.9	46.23	46.23	47.2	46.23	46.57	48.15	48.87	49.32	48.15	48.15	48.15	50.48	49.2
SPP South - Energy Price - 1H2023	7153	8/1/2042	8/1/2042	55.15	55.15	55.15	55.15	55.15	55.15	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	55.2	55.82	54.24	52.14	57.35	55.17
SPP South - Energy Price - 1H2023	7154	8/2/2042	8/2/2042	55.15	55.15	55.15	55.15	55.15	55.15	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	54.95	55.14	55.29	57.35	55.15
SPP South - Energy Price - 1H2023	7155	8/3/2042	8/3/2042	55.15	55.15	55.15	55.15	55.15	55.15	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	54.67	57.57	58.21	58.39	56.64	55.17	55.17
SPP South - Energy Price - 1H2023	7156	8/4/2042	8/4/2042	55.34	55.34	55.34	55.34	55.34	55.34	52.3	52.3	52.3	52.3	52.3	52.72	52.3	52.3	55.07	54.3	55.08	55.08	55.61	55.08	56.05	52.45	55.34	55.34
SPP South - Energy Price - 1H2023	7157	8/5/2042	8/5/2042	54.67	54.81	54.67	54.81	54.81	54.81	51.73	51.73	51.73	51.73	51.73	53.39	53.02	53.39	53.68	53.39	51.73	52.67	53.39	53.39	53.39	53.39	54.74	54.67
SPP South - Energy Price - 1H2023	7158	8/6/2042	8/6/2042	46.69	46.69	46.69	46.69	46.69	46.69	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	45.01	46.69	46.69
SPP South - Energy Price - 1H2023	7159	8/7/2042	8/7/2042	45.12	45.12	45.12	45.12	45.12	45.12	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	45.97	43.69	43.69	45.12	45.12
SPP South - Energy Price - 1H2023	7160	8/8/2042	8/8/2042	41.76	41.76	41.76	41.76	41.76	41.76	40.86	40.86	40.86	40.86	40.86	40.86	40.86	40.86	40.86	40.86	40.86	40.86	42.82	43.14	40.86	40.86	41.76	41.76
SPP South - Energy Price - 1H2023	7161	8/9/2042	8/9/2042	41.76	41.76	41.76	41.76	41.76	41.76	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	41.28	40.67	40.67	40.67	41.76	41.76
SPP South - Energy Price - 1H2023	7162	8/10/2042	8/10/2042	41.76	41.76	41.76	41.76	41.76	41.76	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	40.67	42.44	43.68	42.01	42.01	41.76	41.76
SPP South - Energy Price - 1H2023	7163	8/11/2042	8/11/2042	50.89	50.89	50.89	50.89	50.89	50.89	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	50.56	50.25	50.36	49.25	54.46	50.96
SPP South - Energy Price - 1H2023	7164	8/12/2042	8/12/2042	54.83	54.83	54.83	54.83	54.83	54.83	51.87	51.87	51.87	51.87	51.87	51.87	51.87	51.87	51.87	51.87	51.87	51.87	55.1	55.06	51.87	51.87	54.83	54.83
SPP South - Energy Price - 1H2023	7165	8/13/2042	8/13/2042	56.12	56.12	56.12	56.12	56.12	56.12	52.96	52.96	52.96	52.96	52.96	52.96	52.96	52.96	52.96	52.96	52.96	52.96	66.74	66.83	52.96	52.96	56.12	56.12
SPP South - Energy Price - 1H2023	7166	8/14/2042	8/14/2042	55.64	55.71	55.64	55.64	55.64	55.71	52.55	52.55	52.55	52.55	52.55	52.55	52.55	52.55	52.55	54.91	57.01	58.71	68.46	68.33	64.08	59.65	61.41	58.44
SPP South - Energy Price - 1H2023	7167	8/15/2042	8/15/2042	58.44	58.44	58.44	58.44	58.44	58.44	54.6	51.6	51.6	51.6	51.6	51.6	52.43	52.82	60.1	60.1	59.95	60.1	65.74	65.06	60.43	60.1	58.75	57.75
SPP South - Energy Price - 1H2023	7168	8/16/2042	8/16/2042	54.51	54.51	54.51	54.51	54.51	54.51	53.08	53.08	53.08	53.08	53.08	53.08	53.08	55.88	58.57	65.5	67.87	72.94	71.37	68.97	67.87	67.87	57.75	56.57
SPP South - Energy Price - 1H2023	7169	8/17/2042	8/17/2042	54.68	54.51	54.51	54.51	54.51	54.51	53.08	53.08	53.08	53.66	53.08	53.08	53.08	53.08	53.08	63.96	67.87	68.48	71.37	69.84	69.27	67.87	58.75	57.75
SPP South - Energy Price - 1H2023	7170	8/18/2042	8/18/2042	56.75	56.75	56.17	56.75	56.25	57.31	56.55	57.33	56.89	55.93	61.12	56.23	62.88	57.85	65.05	65.05	65.05	65.05	67.69	67.25	65.33	65.04	69.02	57.75
SPP South - Energy Price - 1H2023	7171	8/19/2042	8/19/2042	56.37	56.44	56.37	56.37	56.37	56.44	54.97	53.4	53.17	53.17	53.17	53.17	53.17	53.17	55.62	53.6	53.17	54.97	67.94	67.97	54.97	54.97	56.37	56.37
SPP South - Energy Price - 1H2023	7172	8/20/2042	8/20/2042	56.55	56.55	56.55	56.55	56.55	56.55	53.32	53.32	53.32	53.32	53.32	56.56	56.74	66.73	69.53	72.62	73.47	73.47	73.64	74.14	73.47	69.53	76.17	63.55
SPP South - Energy Price - 1H2023	7173	8/21/2042	8/21/2042	60.41	60.08	58.11	60.1	60.32	60.63	58.6	53.91	53.91	53.91	53.91	53.91	57.75	64.57	67.18	67.09	67.69	69.49	70.36	70.97	70.36	69.49	74.14	63.24
SPP South - Energy Price - 1H2023	7174	8/22/2042	8/22/2042	62.28	62.91	60.47	63.24	63.47	63.51	62.93	63.69	63.63	69.89	69.89	69.89	69.89	65.79	69.89	69.89	69.89	70.63	69.89	69.89	69.89	66.69	56.86	56.86
SPP South - Energy Price - 1H2023	7175	8/23/2042	8/23/2042	58.92	56.86	56.86	56.86	56.86	56.86	55.37	55.37	55.37	55.37	55.37	55.37	57.72	57.24	56.18	69.25	69.25	69.25	74.59	74.59	69.25	60.36	56.86	56.86
SPP South - Energy Price - 1H2023	7176	8/24/2042	8/24/2042	56.86	56.86	56.86	56.86	56.86	56.86	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	58.05	58.67	59.65	56.87	57.52	56.86
SPP South - Energy Price - 1H2023	7177	8/25/2042	8/25/2042	47.84	48.47	48.47	47.71	47.94	47.97	44.52	44.52	44.52	44.52	44.52	44.52	44.52	44.52	44.52	44.52	44.52	45.83	52.02	52.05	50.85	49.15	54.72	53.09
SPP South - Energy Price - 1H2023	7178	8/26/2042	8/26/2042	54.09	54.72	55.22	55.05	55.14	55.32	54.97	51.25	51.25	51.25	51.25	51.25	51.25	51.25	51.25	51.25	51.25	54.97	63.37	61.82	57.49	54.97	57.6	55.54
SPP South - Energy Price - 1H2023	7179	8/27/2042	8/27/2042	55.35	55.98	55.88	55.98	55.98	55.98	51.02	51.02	51.02	51.02	51.02	51.02	51.02	51.02	51.02	51.02	51.02	52.16	57.59	59.54	56.51	51.02	54.74	54.74
SPP South - Energy Price - 1H2023	7180	8/28/2042	8/28/2042	54.11	54.74	54.74	54.74	54.59	55.33	54.06	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	54.65	65.16	61.36	54.65	54.65	58.72	55.8
SPP South - Energy Price - 1H2023	7181	8/29/2042	8/29/2042	55.66	55.66	53.1	55.66	55.66	55.66	52.08	47.91	47.91	47.91	47.91	47.91	47.91	61.94	62.45	62.43	62.43	63.15	62.43	62.43	61.94	61.59	53.71	51.13
SPP South - Energy Price - 1H2023	7182	8/30/2042	8/30/2042	51.23	52.55	52.36	51.13	51.13	51.22	49.79	48.81	49.79	49.79	52.91	49.79	49.79	53.69	54.81	54.85	55.58	55.62	65.11	65.35	60.61	59	55.71	50.13
SPP South - Energy Price - 1H2023	7183	8/31/2042	8/31/2042	50.13	50.13	50.64	50.13	50.13	50.13	48.81	48.81	48.81	48.81	48.81	48.81	48.81	48.81	54.51	52.15	55.27	65.23	61.59	64.74	60.61	55.9	50.77	50.77
SPP South - Energy Price - 1H2023	7184	9/1/2042	9/1/2042	34.64	34.71	34.71	34.71	35.46	35.48	36.04	34.75	34.75	34.75	34.75	34.75	34.75	34.75	34.75	34.75	34.75	36.04	43.4	41.67	36.04	34.75	37.68	34.92
SPP South - Energy Price - 1H2023	7185	9/2/2042	9/2/2042	37.68	37.68	37.68	37.68	37.68	37.68	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.93	37.68	37.68
SPP South - Energy Price - 1H2023	7186	9/3/2042	9/3/2042	38.15	38.15	38.15	38.15	38.15	38.15	41.57	40.29	38.35	41.88	41.62	41.88	41.88	41.88	41.4	38.53	41.49	39.4	44.95	42.94	41.88	41.46	40.14	39.74
SPP South - Energy Price - 1H2023	7187	9/4/2042	9/4/2042	39.5	38.97	38.91	39.4	39.5	39.5	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.77	37.65	37.51
SPP South - Energy Price - 1H2023	7188	9/5/2042	9/5/2042	37.07	37.07	37.07	37.07	37.07	37.07	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.38	37.07	37.07
SPP South - Energy Price - 1H2023	7189	9/6/2042	9/6/2042	37.07	37.07	37.07	37.07	37.07	37.07	58.95	58.95	58.94	58.95	58.95	58.94	58.95	58.95	58.95	58.95	58.95	58.95	58.95	58.95	58.95	58.95	37.07	37.07
SPP South - Energy Price - 1H2023	7190	9/7/2042	9/7/2042	37.07	37.07	37.07	37.07	37.07	37.07	58.95	58.95	58.94	58.94	58.95	58.95	58.95	58.95	58.95	58.95	58.95	58.95	59.02	61.46	58.95	58.95	37.07	37.07
SPP South - Energy Price - 1H2023	7191	9/8/2042	9/8/2042	36.72	36.72	36.72	36.72	36.72	36.72	37.07	37.07	37.07	37.07	37.07	37.07	37.07	37.07	37.07	37.33	37.33	37.33	37.33	37.33	37.33	37.33	36.72	36.72
SPP South - Energy Price - 1H2023	7192	9/9/2042	9/9/2042	36.25	36.25	36.25	36.25	36.25	36.25	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.65	36.25	36.25
SPP South - Energy Price - 1H2023	7193	9/10/2042	9/10/2042	36.52	36.52	36.52	36.52	36.52	36.52	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.89	36.59	36.52
SPP South - Energy Price - 1H2023	7194	9/11/2042	9/11/2042	36.92	36.92	36.92	36.92	36.92	36.92	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	37.25	36.92	36.92
SPP South - Energy Price - 1H2023	7195	9/12/2042	9/12/2042	35.95	35.95	35.95	35.95	35.95	35.95	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	36.38	35.95	35.95
SPP South - Energy Price - 1H2023	7196	9/13/2042	9/13/2042	35.95	35.95	35.95	35.95	35.95	35.95	57.17	25.63	9.29	21.14	9.88	16.82	21.14	21.14	22.07	22.45	57.17	57.17	57.17	57.17	57.17	57.17	35.95	35.95
SPP South - Energy Price - 1H2023	7197	9/14/2042	9/14/2042	35.95	35.95	35.95	35.95	35.95	35.95	57.17	16.82	16.82	8.61	16.82	16.82	16.82	16.82	17.24	57.17	57.17	57.17	57.17	57.17	57.17	57.17	35.95	35.95
SPP South - Energy Price - 1H2023	7198	9/15/2042	9/15/2042	33.54	33.54	33.54	33.54	33.54	33.54	34.22	34.22	34.22	34.22	34.22	34.22	34.22	34.22	34.22	34.22	34.22	34.22	35.42	34.22	34.22	34.22	33.54	33.54
SPP South - Energy Price - 1H2023	7199	9/16/2042	9/16/2042	35.66	35.66	35.66	35.66	35.66	35.66	36.12	36.12	36.12	36.12	36.12	36.12	36.12	36.12	36.12	36.12	36.2	36.73	36.12	36.12	36.12	36.12	35.66	35.66
SPP South - Energy Price - 1H2023	7200	9/17/2042	9/17/2042	35.59	35.59	35.59	35.59	35.59	35.59	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	36.05	35.59	35.59
SPP South - Energy Price - 1H2023	7201	9/18/2042	9/18/2042	35.68	35.68	35.68	35.68	35.68	35.68	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	39.6	37.95	36.14	36.14	35.68	35.68
SPP South - Energy Price - 1H2023	7202	9/19/2042	9/19/2042	35.5	35.5	35.5	35.5	35.5	35.5	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.5	35.5
SPP South - Energy Price - 1H2023	7203	9/20/2042	9/20/2042	35.5	35.5	35.5	35.5	35.5	35.5	56.45	56.45	23.36	18.07	18.07	10.87	13.29	23.36	23.36	56.45	56.45	56.45	56.45	56.45	56.45	56.45	35.5	35.5
SPP South - Energy Price - 1H2023	7204	9/21/2042	9/21/2042	35.5	35.5	35.5	35.5	35.5	35.5	56.45	11.35	4.7	4.7	2.51	3.02	3.85	5.11	4.7	19.98	19.28	56.45	56.45	56.45	56.45	56.45	35.5	35.5
SPP South - Energy Price - 1H2023	7205	9/22/2042	9/22/2042	34.71	34.95	34.87	35.45	35.45	35.45	35.93	34.08	31.35	31.35	31.35	31.35	35.93	35.93	35.93	35.93	35.93	35.93	35.93	35.93	35.93	35.93	35.45	35.45
SPP South - Energy Price - 1H2023	7206	9/23/2042	9/23/2042	35.73	35.73	35.73	35.73	35.73	35.73	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	36.18	35.73	35.73
SPP South - Energy Price - 1H2023	7207	9/24/2042	9/24/2042	36.13	36.13	36.13	36.13	36.13	36.13	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.54	36.13	36.13
SPP South - Energy Price - 1H2023	7208	9/25/2042	9/25/2042	36.41	36.41	36.41	36.41	36.41	36.41	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.41	36.41
SPP South - Energy Price - 1H2023	7209	9/26/2042	9/26/2042	36.64	36.64	36.64	36.64	36.64	36.64	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36.64	36.64
SPP South - Energy Price - 1H2023	7210	9/27/2042	9/27/2042	36.64	36.64	36.64	36.64	36.64	36.64	58.27	58.27	10.72	4.62	4.62	4.62	3.85	4.62	4.3	4.62	19.28	58.27	58.27	58.27	58.27	58.27	36.64	36.64
SPP South - Energy Price - 1H2023	7211	9/28/2042	9/28/2042	36.64	36.64	36.64	36.64	36.64	36.64	58.27	58.27	17.81	17.81	17.81	13.18	15.35	17.4	19.26	19.98	58.27	58.27	58.27	58.27	58.27	58.27	36.64	36.64
SPP South - Energy Price - 1H2023	7212	9/29/2042	9/29/2042	31.16	31.16	31.16	31.16	31.16	31.16	32.08	32.08	32.08	32.06	32.06	32.08	32.08	32.08	32.08	32.08	32.08	32.08	32.08	32.08	32.08	32.08	31.16	31.16
SPP South - Energy Price - 1H2023	7213	9/30/2042	9/30/2042	30.22	30.22	30.22	30.22	30.22	30.22	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	31.24	30.22	30.22
SPP South - Energy Price - 1H2023	7214	10/1/2042	10/1/2042	21.49	21.49	21.49	21.49	21.49	21.49	15.24	15.24	15.24	14.02	14.02	14.02	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	15.24	21.49	21.49
SPP South - Energy Price - 1H2023	7215	10/2/2042	10/2/2042	22.25	22.25	22.25	22.25	22.25	22.25	15.72	5.86	2.71	2.75	2.99	4.91	4.91	4.91	4.91	15.72	15.72	15.72	15.72	15.72	15.72	15.72	22.25	22.25
SPP South - Energy Price - 1H2023	7216	10/3/2042	10/3/2042	22.42	22.42	22.42	22.42	22.42	22.42	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	15.83	22.42	22.42
SPP South - Energy Price - 1H2023	7217	10/4/2042	10/4/2042	22.42	22.42	22.42	22.42	22.42	22.42	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	22.42	22.42
SPP South - Energy Price - 1H2023	7218	10/5/2042	10/5/2042	22.42	22.42	22.42	22.42	22.42	22.42	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	26.37	22.42	22.42
SPP South - Energy Price - 1H2023	7219	10/6/2042	10/6/2042	21.9	21.9	21.9	21.9	21.9	21.9	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19	21.9	21.9
SPP South - Energy Price - 1H2023	7220	10/7/2042	10/7/2042	22.14	22.14	22.14	22.14	22.14	22.14	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	15.04	16.34	16.34	16.34	16.34	16.34	16.34	16.34	22.14	22.14

SPP South - Energy Price - 1H2023	7221	10/8/2042	10/8/2042	21.55	21.55	21.55	21.55	21.55	21.55	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	15.97	21.55	21.55
SPP South - Energy Price - 1H2023	7222	10/9/2042	10/9/2042	21.99	21.99	21.99	21.99	21.99	21.99	16.24	16.24	16.24	16.24	14.94	14.94	14.94	14.94	14.94	14.94	16.24	16.24	16.24	16.24	16.24	16.24	21.99	21.99
SPP South - Energy Price - 1H2023	7223	10/10/2042	10/10/2042	20.48	20.48	20.48	20.48	20.48	20.48	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	15.29	20.48	20.48
SPP South - Energy Price - 1H2023	7224	10/11/2042	10/11/2042	20.48	20.48	20.48	20.48	20.48	20.48	24.08	24.08	24.08	22.15	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	24.08	20.48	20.48
SPP South - Energy Price - 1H2023	7225	10/12/2042	10/12/2042	20.48	20.48	20.48	20.48	20.48	20.48	24.08	24.08	14.27	14.27	14.27	14.27	14.27	14.27	14.27	16.06	24.08	24.08	24.08	24.08	24.08	24.08	20.48	20.48
SPP South - Energy Price - 1H2023	7226	10/13/2042	10/13/2042	21.76	21.76	21.76	21.76	21.76	21.76	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	21.76	21.76
SPP South - Energy Price - 1H2023	7227	10/14/2042	10/14/2042	22.13	22.13	22.13	22.13	22.13	22.13	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	16.33	22.13	22.13
SPP South - Energy Price - 1H2023	7228	10/15/2042	10/15/2042	22.38	22.38	22.38	22.38	22.38	22.38	16.5	16.5	14.33	14.33	14.33	13.98	15.5	14.33	15.06	15.82	16.5	16.5	16.5	16.5	16.5	16.5	22.38	22.38
SPP South - Energy Price - 1H2023	7229	10/16/2042	10/16/2042	22.91	22.91	22.91	22.91	22.91	22.91	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	16.83	22.91	22.91
SPP South - Energy Price - 1H2023	7230	10/17/2042	10/17/2042	22.66	22.66	22.66	22.66	22.66	22.66	16.67	16.67	16.67	16.67	16.67	16.67	15.34	16.67	16.67	15.82	16.67	16.67	16.67	16.67	16.67	16.67	22.66	22.66
SPP South - Energy Price - 1H2023	7231	10/18/2042	10/18/2042	22.66	22.66	22.66	22.66	22.66	22.66	26.65	26.65	26.65	24.52	26.65	26.65	26.65	26.65	26.65	26.65	26.65	26.65	26.65	26.65	26.65	26.65	22.66	22.66
SPP South - Energy Price - 1H2023	7232	10/19/2042	10/19/2042	22.66	22.66	22.66	22.66	22.66	22.66	26.65	26.65	7.52	7.65	5.69	6.34	6.34	2.46	6.34	6.84	26.65	26.65	26.65	26.65	26.65	26.65	22.66	22.66
SPP South - Energy Price - 1H2023	7233	10/20/2042	10/20/2042	22.72	22.72	22.72	22.72	22.72	22.72	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.74	17.28	17.43	16.71	16.71	22.72	22.72
SPP South - Energy Price - 1H2023	7234	10/21/2042	10/21/2042	23.18	23.18	23.18	23.18	23.18	23.18	17	17	4.86	4.86	2.99	3.33	3.87	4.39	4.86	5.04	17	17	17	17	17	17	23.18	23.18
SPP South - Energy Price - 1H2023	7235	10/22/2042	10/22/2042	23	23	23	23	23	23	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	23	23
SPP South - Energy Price - 1H2023	7236	10/23/2042	10/23/2042	22.05	22.05	22.05	22.05	22.05	22.05	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	16.28	22.05	22.05
SPP South - Energy Price - 1H2023	7237	10/24/2042	10/24/2042	21.44	21.44	21.44	21.44	21.44	21.44	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	21.44	21.44
SPP South - Energy Price - 1H2023	7238	10/25/2042	10/25/2042	21.44	21.44	21.44	21.44	21.44	21.44	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	25.21	21.44	21.44
SPP South - Energy Price - 1H2023	7239	10/26/2042	10/26/2042	21.44	21.44	21.44	21.44	21.44	21.44	25.21	25.21	5.97	4.31	4.31	4.31	4.31	4.31	4.31	4.31	5.16	25.21	25.21	25.21	25.21	25.21	21.44	21.44
SPP South - Energy Price - 1H2023	7240	10/27/2042	10/27/2042	23.63	23.63	23.63	23.63	23.63	23.63	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.58	23.63	23.63
SPP South - Energy Price - 1H2023	7241	10/28/2042	10/28/2042	23.3	23.3	23.3	23.3	23.3	23.3	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38	23.3	23.3
SPP South - Energy Price - 1H2023	7242	10/29/2042	10/29/2042	22.56	22.56	22.56	22.56	22.56	22.56	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	15.92	22.56	22.56
SPP South - Energy Price - 1H2023	7243	10/30/2042	10/30/2042	22.85	22.85	22.85	22.85	22.85	22.85	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	16.09	22.85	22.85
SPP South - Energy Price - 1H2023	7244	10/31/2042	10/31/2042	23.92	23.92	23.92	23.92	23.92	23.92	16.77	16.77	16.77	16.77	16.77	15.43	15.43	15.43	15.43	16.77	16.77	16.77	16.77	16.77	16.77	16.77	23.92	23.92
SPP South - Energy Price - 1H2023	7245	11/1/2042	11/1/2042	31.05	31.05	31.05	31.05	31.05	31.05	41.56	41.56	18.67	7.8	18.63	18.67	18.67	18.67	18.67	23.69	41.56	41.56	41.56	41.56	41.56	41.56	31.05	31.05
SPP South - Energy Price - 1H2023	7246	11/2/2042	11/2/2042	31.05	31.05	31.05	31.05	31.05	31.05	41.56	41.56	41.56	10.58	11.26	10.58	10.58	10.58	6.75	6.61	41.56	41.56	41.56	41.56	41.56	41.56	31.05	31.05
SPP South - Energy Price - 1H2023	7247	11/3/2042	11/3/2042	24.89	24.89	24.89	24.89	24.89	24.89	26.94	24.14	5.6	4.41	4.41	4.14	1.14	4.41	4.41	4.41	4.85	26.94	26.94	26.94	26.94	26.94	24.89	24.89
SPP South - Energy Price - 1H2023	7248	11/4/2042	11/4/2042	28.91	28.91	28.91	28.91	28.91	28.91	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	30.62	28.91	28.91
SPP South - Energy Price - 1H2023	7249	11/5/2042	11/5/2042	30.03	30.03	30.03	30.03	30.03	30.03	31.65	31.65	31.65	31.65	31.65	31.65	31.65	31.65	31.65	31.65	31.65	31.65	32.36	32.65	31.65	31.65	30.03	30.03
SPP South - Energy Price - 1H2023	7250	11/6/2042	11/6/2042	29.07	29.07	29.07	29.07	29.07	29.07	30.77	30.77	30.77	28.2	25.95	25.95	23.81	25.95	25.95	25.95	30.77	30.77	30.77	30.77	30.77	30.77	29.07	29.07
SPP South - Energy Price - 1H2023	7251	11/7/2042	11/7/2042	25.63	25.63	25.63	25.63	25.63	25.63	27.62	27.62	27.62	13.5	11.63	9.02	8.8	11.63	11.63	27.62	27.62	27.62	27.62	27.62	27.62	27.62	25.63	25.63
SPP South - Energy Price - 1H2023	7252	11/8/2042	11/8/2042	25.63	25.63	25.63	25.63	25.63	25.63	34.32	34.32	8.41	7.8	7.8	7.8	6.2	7.8	6.75	7.8	34.32	34.32	34.32	34.32	34.32	34.32	25.63	6.95
SPP South - Energy Price - 1H2023	7253	11/9/2042	11/9/2042	6.95	6.95	6.95	6.95	7.3	6.95	9.3	9.3	8.41	10.11	10.11	9.3	10.11	9.3	6.75	34.32	34.32	34.32	34.32	34.32	34.32	34.32	25.63	25.63
SPP South - Energy Price - 1H2023	7254	11/10/2042	11/10/2042	24.19	24.19	24.19	24.19	24.19	24.2	29.36	29.36	21.05	21.05	21.05	22.46	21.05	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	29.36	24.41	25.16
SPP South - Energy Price - 1H2023	7255	11/11/2042	11/11/2042	25.98	29.28	29.28	29.28	29.93	33.78	31.76	31.76	31.76	31.02	31.02	31.02	31.02	31.02	31.02	31.02	31.02	35.1	31.76	31.76	31.76	31.02	28.88	30.49
SPP South - Energy Price - 1H2023	7256	11/12/2042	11/12/2042	35.61	35.61	35.61	35.61	35.61	35.61	33.62	36.18	33.38	33.29	33.29	33.29	33.29	35.67	33.29	33.29	35.84	39.27	39.29	38.55	38.55	38.55	38.46	35.46
SPP South - Energy Price - 1H2023	7257	11/13/2042	11/13/2042	33.97	33.74	33.39	33.44	33.97	33.97	33.21	33.21	32.96	32.96	30.32	30.32	30.32	30.32	30.32	33.21	33.21	33.21	33.95	33.95	33.95	33.21	35	36.23
SPP South - Energy Price - 1H2023	7258	11/14/2042	11/14/2042	35.28	35	35	35.28	35.61	35.61	38.46	39.83	33.95	31.23	31.48	31.23	31.23	31.23	31.23	31.23	31.23	39.63	37.46	33.95	33.95	33.95	35.28	35.28
SPP South - Energy Price - 1H2023	7259	11/15/2042	11/15/2042	34.17	34.17	35.26	35.61	36.46	36.24	49.73	49.45	37.43	35.09	35.09	35.09	35.09	35.09	35.09	35.09	45.64	51.48	51.41	51.41	51.41	51.41	38.47	38.4
SPP South - Energy Price - 1H2023	7260	11/16/2042	11/16/2042	37.04	37.31	37.2	35.61	32.76	35.28	44.89	47.68	47.68	47.07	39.74	39.06	35.09	8.93	35.08	35.08	35.09	41.56	41.18	39.39	37.88	37.88	28.3	30.72
SPP South - Energy Price - 1H2023	7261	11/17/2042	11/17/2042	32.29	32.29	32.29	33.59	37.92	40.09	42.82	43.14	42.57	42.29	40.12	40.95	39.69	41.83	41.33	39.69	46.77	47.66	48.08	46.77	46.77	46.77	48.99	44.45
SPP South - Energy Price - 1H2023	7262	11/18/2042	11/18/2042	44.45	42.48	43.76	42.48	44.45	44.45	44.79	45.16	43.93	44.15	41.8	43.05	43.09	43.09	43.37	43.23	42.25	44.39	44.58	44.39	44.13	44.39	44.1	39.8
SPP South - Energy Price - 1H2023	7263	11/19/2042	11/19/2042	42.57	42.69	42.4	42.55	43.05	43.05	41.83	42.47	42.47	42.47	42.47	41.1	40.18	40.71	41.1	41.14	42.47	42.47	43.34	42.47	42.47	41.42	40.72	39.5
SPP South - Energy Price - 1H2023	7264	11/20/2042	11/20/2042	36.29	36.42	36.29	36.32	36.96	36.74	35.21	35.21	33.21	33.21	33.21	30.56	31.84	30.56	30.56	32.12	33.21	33.21	33.21	33.21	33.21	33.21	28.34	30.81
SPP South - Energy Price - 1H2023	7265	11/21/2042	11/21/2042	27.68	28.34	27.68	27.68	27.68	27.68	32.6	29.67	6.14	5.82	4.22	4.22	4.22	0	0	4.22	4.22	32.6	32.6	32.6	32.6	32.6	27.68	27.68
SPP South - Energy Price - 1H2023	7266	11/22/2042	11/22/2042	27.68	27.68	27.68	27.68	27.68	27.68	37.05	37.05	37.05	36.39	36.39	37.05	36.39	37.05	37.05	37.05	37.05	37.05	39.55	37.05	37.05	37.05	27.68	27.68
SPP South - Energy Price - 1H2023	7267	11/23/2042	11/23/2042	27.68	27.68	28.97	27.68	27.68	27.68	37.05	37.05	37.05	37.05	36.39	37.05	36.39	36.39	36.39	34.13	37.05	37.94	37.05	37.05	37.05	37.05	29.55	28.34
SPP South - Energy Price - 1H2023	7268	11/24/2042	11/24/2042	27.18	27.18	27.18	27.18	27.18	27.18	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	29.26	28.17	28.17
SPP South - Energy Price - 1H2023	7269	11/25/2042	11/25/2042	28.17	28.17	28.17	28.17	28.17	28.17	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	30.16	28.17	28.17
SPP South - Energy Price - 1H2023	7270	11/26/2042	11/26/2042	28.3	28.3	28.3	28.3	28.3	28.3	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	28.3	28.3
SPP South - Energy Price - 1H2023	7271	11/27/2042	11/27/2042	28.3	28.3	28.3	28.3	28.3	28.3	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.3	30.28	30.28	33.15	31.21
SPP South - Energy Price - 1H2023	7272	11/28/2042	11/28/2042	31.21	31.21	31.21	31.54	31.2	31.2	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	33.18	33.4	33.12	33.12	33.12	37.11	37.11
SPP South - Energy Price - 1H2023	7273	11/29/2042	11/29/2042	33.76	33.76	33.76	33.76	36.7	33.76	49.13	49.13	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	45.4	43.92	42.95	41.76	41.76	31.2	31.2
SPP South - Energy Price - 1H2023	7274	11/30/2042	11/30/2042	31.2	31.2	31.2	31.2	31.2	31.2	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	31.2	31.2
SPP South - Energy Price - 1H2023	7275	12/1/2042	12/1/2042	46.29	46.29	46.29	46.29	46.29	46.29	50.84	50.84	50.84	46.77	50.84	46.77	50.84	50.84	50.84	50.84	50.84	50.84	50.84	50.84	50.84	50.84	46.29	46.29
SPP South - Energy Price - 1H2023	7276	12/2/2042	12/2/2042	46.92	46.92	46.92	46.92	46.92	46.92	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	51.47	46.92	46.92
SPP South - Energy Price - 1H2023	7277	12/3/2042	12/3/2042	48.17	48.17	48.17	48.17	48.17	48.17	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	48.17	48.17
SPP South - Energy Price - 1H2023	7278	12/4/2042	12/4/2042	50.25	50.25	50.25	50.25	50.25	50.25	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	54.77	50.25	50.25
SPP South - Energy Price - 1H2023	7279	12/5/2042	12/5/2042	45.83	45.83	45.83	45.83	45.83	45.83	50.39	50.39	50.39	50.39	50.39	46.35	46.35	46.35	50.27	50.39	50.39	50.39	50.39	50.39	50.39	50.39	45.83	45.83
SPP South - Energy Price - 1H2023	7280	12/6/2042	12/6/2042	45.83	45.83	45.83	45.83	45.83	45.83	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	45.83	45.83
SPP South - Energy Price - 1H2023	7281	12/7/2042	12/7/2042	45.83	45.83	45.83	45.83	45.83	45.83	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	56.41	45.83	45.83
SPP South - Energy Price - 1H2023	7282	12/8/2042	12/8/2042	45.5	45.5	45.5	45.5	45.5	45.5	50.05	50.05	50.05	50.05	50.05	50.05	46.05	50.05	47.86	50.05	50.05	50.05	50.05	50.05	50.05	50.05	45.5	45.5
SPP South - Energy Price - 1H2023	7283	12/9/2042	12/9/2042	44.53	44.53	44.53	44.53	44.53	44.53	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	49.09	44.53	44.53
SPP South - Energy Price - 1H2023	7284	12/10/2042	12/10/2042	43.54	43.54	43.54	43.54	43.54	43.54	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	48.11	43.54	43.54
SPP South - Energy Price - 1H2023	7285	12/11/2042	12/11/2042	42.23	42.23	42.23	42.23	42.23	42.23	46.81	46.81	46.81	46.81	46.81	43.07	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	46.81	42.23	42.23
SPP South - Energy Price - 1H2023	7286	12/12/2042	12/12/2042	39.13	39.13	39.13	39.13	39.13	39.13	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	43.73	39.13	39.13
SPP South - Energy Price - 1H2023	7287	12/13/2042	12/13/2042	39.13	39.13	39.13	39.13	39.13	39.13	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	50.18	48.57	48.31	48.16	48.16	39.13	39.13
SPP South - Energy Price - 1H2023	7288	12/14/2042	12/14/2042	39.13	39.13	39.13	39.13	39.13	39.13	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	48.16	39.13	39.13
SPP South - Energy Price - 1H2023	7289	12/15/2042	12/15/2042	39.62	39.62	39.62	39.62	39.62	39.62	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	44.22	39.92	39.62
SPP South - Energy Price - 1H2023	7290	12/16/2042	12/16/2042	39.92	39.92	39.92	39.92	39.92	39.92	44.51	44.51	44.51	42.34	38.96	38.96	7.37	7.1	38.96	44.51	44.51	44.52	44.52	44.52	44.52	44.52	39.92	39.92
SPP South - Energy Price - 1H2023	7291	12/17/2042	12/17/2042	37.54	37.54	37.54	37.54	37.54	37.54	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	42.15	37.54	37.54
SPP South - Energy Price - 1H2023	7292	12/18/2042	12/18/2042	39.32	39.32	39.32	39.32	39.32	39.32	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	43.92	39.32	39.32
SPP South - Energy Price - 1H2023	7293	12/19/2042	12/19/2042	39.28	39.28	39.28	39.28	39.28	39.28	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	43.88	39.28	39.28
SPP South - Energy Price - 1H2023	7294	12/20/2042	12/20/2042	39.28	39.28	39.28	39.28	39.28	39.28	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	39.28	39.28
SPP South - Energy Price - 1H2023	7295	12/21/2042	12/21/2042	39.28	39.28	39.28	39.28	39.28	39.28	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	39.28	39.28
SPP South - Energy Price - 1H2023	7296	12/22/2042	12/22/2042	43.19	43.19	43.19	43.19	43.19	43.19	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	47.76	43.19	43.19
SPP South - Energy Price - 1H2023	7297	12/23/2042	12/23/2042	42.43	42.43	42.43	42.43	42.43	42.43	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	47.01	42.43	42.43
SPP South - Energy Price - 1H2023	7298	12/24/2042	12/24/2042	36.2	36.2	36.2	36.2	36.2	36.2	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	36.2	36.2
SPP South - Energy Price - 1H2023	7299	12/25/2042	12/25/2042	36.2	36.2	36.2	36.2	36.2	36.2	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	40.82	36.2	36.2
SPP South - Energy Price - 1H2023	7300	12/26/2042	12/26/2042	43.72	43.72	43.72	43.72	43.72	43.72	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	48.28	43.72	43.72
SPP South - Energy Price - 1H2023	7301	12/27/2042	12/27/2042	43.72	43.72	43.72	43.72	43.72	43.72	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	43.72	43.71
SPP South - Energy Price - 1H2023	7302	12/28/2042	12/28/2042	43.71	43.71	43.71	43.71	43.71	43.71	53.8	53.8	53.8	53.8	53.8	53.8	53.8	52.7	53.8	53.8	52.7	53.8	53.8	53.8	53.8	53.8	43.72	43.72
SPP South - Energy Price - 1H2023	7303	12/29/2042	12/29/2042	42.82	42.82	42.82	42.82	42.82	42.82	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	47.39	42.82	42.82

SPP South - Energy Price - 1H2023	7304	12/30/2042	12/30/2042	40.35	40.35	40.35	40.35	40.35	40.35	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	44.94	40.35	40.35
SPP South - Energy Price - 1H2023	7305	12/31/2042	12/31/2042	37.98	37.98	37.98	37.98	37.98	37.98	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	42.58	37.98	37.98
SPP South - Energy Price - 1H2023	7306	1/1/2043	1/1/2043	42.07	42.07	42.07	42.07	42.07	42.07	42.46	42.46	42.46	42.27	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.46	42.07	42.07
SPP South - Energy Price - 1H2023	7307	1/2/2043	1/2/2043	51.68	51.68	51.68	51.68	51.68	51.68	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.68	51.68
SPP South - Energy Price - 1H2023	7308	1/3/2043	1/3/2043	51.68	51.68	51.68	51.68	51.68	51.68	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	51.68	51.68
SPP South - Energy Price - 1H2023	7309	1/4/2043	1/4/2043	51.68	51.68	51.68	51.68	51.68	51.68	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	51.68	51.68
SPP South - Energy Price - 1H2023	7310	1/5/2043	1/5/2043	46.48	46.48	46.48	46.48	46.48	46.48	46.43	46.43	46.42	46.42	46.42	46.42	42.71	41.55	42.71	42.71	42.71	46.42	46.43	46.42	46.42	46.43	46.48	46.48
SPP South - Energy Price - 1H2023	7311	1/6/2043	1/6/2043	45.59	45.59	45.59	45.59	45.59	45.59	45.62	45.62	45.62	45.62	43.88	45.62	45.62	45.62	45.62	45.62	45.62	45.62	45.62	45.62	45.62	45.62	45.59	45.59
SPP South - Energy Price - 1H2023	7312	1/7/2043	1/7/2043	44.42	44.42	44.42	44.42	44.42	44.42	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.57	44.42	44.42
SPP South - Energy Price - 1H2023	7313	1/8/2043	1/8/2043	44.06	44.06	44.06	44.06	44.06	44.06	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.25	44.06	44.06
SPP South - Energy Price - 1H2023	7314	1/9/2043	1/9/2043	40.46	40.46	40.46	40.46	40.46	40.46	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	41.02	40.46	40.46
SPP South - Energy Price - 1H2023	7315	1/10/2043	1/10/2043	40.46	40.46	40.46	40.46	40.46	40.46	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	48.07	40.46	40.46
SPP South - Energy Price - 1H2023	7316	1/11/2043	1/11/2043	40.46	40.46	40.46	40.46	40.46	40.46	48.07	48.07	48.07	48.07	48.07	48.07	46.08	43.54	47.83	48.07	48.07	48.07	48.07	48.07	48.07	48.07	40.46	40.46
SPP South - Energy Price - 1H2023	7317	1/12/2043	1/12/2043	45.71	45.71	45.71	45.71	45.71	45.71	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.71	45.71
SPP South - Energy Price - 1H2023	7318	1/13/2043	1/13/2043	48.78	48.78	48.78	48.78	48.78	48.78	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.64	48.78	48.78
SPP South - Energy Price - 1H2023	7319	1/14/2043	1/14/2043	48.43	48.43	48.43	48.43	48.43	48.43	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.33	48.43	48.43
SPP South - Energy Price - 1H2023	7320	1/15/2043	1/15/2043	46.13	46.13	46.13	46.13	46.13	46.13	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.26	46.13	46.13
SPP South - Energy Price - 1H2023	7321	1/16/2043	1/16/2043	48.2	48.2	48.2	48.2	48.2	48.2	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.12	48.2	48.2
SPP South - Energy Price - 1H2023	7322	1/17/2043	1/17/2043	48.2	48.2	48.2	48.2	48.2	48.2	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	48.2	48.2
SPP South - Energy Price - 1H2023	7323	1/18/2043	1/18/2043	48.2	48.2	48.2	48.2	48.2	48.2	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	57.27	48.2	48.2
SPP South - Energy Price - 1H2023	7324	1/19/2043	1/19/2043	47.42	47.42	47.42	47.42	47.42	47.42	47.42	47.42	47.42	47.42	47.42	43.63	43.63	47.42	6.24	44.79	45.19	47.42	47.42	47.42	47.42	47.42	47.42	47.42
SPP South - Energy Price - 1H2023	7325	1/20/2043	1/20/2043	55.64	55.64	55.64	55.64	55.64	55.64	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	56.79	58.22	57.93
SPP South - Energy Price - 1H2023	7326	1/21/2043	1/21/2043	58.47	58.47	58.47	58.47	58.47	58.47	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	59.35	58.47	58.47
SPP South - Energy Price - 1H2023	7327	1/22/2043	1/22/2043	52.39	52.39	52.39	52.39	52.39	52.39	53.85	53.85	53.85	53.85	53.85	53.85	49.54	49.54	49.54	49.54	53.85	53.85	53.85	53.85	53.85	53.85	52.39	52.39
SPP South - Energy Price - 1H2023	7328	1/23/2043	1/23/2043	52.01	52.01	52.01	52.01	52.01	52.01	53.51	53.51	49.88	8.65	8.65	8.65	7.62	6.61	9.4	8.65	8.65	53.51	53.51	53.51	53.51	53.51	52.01	52.01
SPP South - Energy Price - 1H2023	7329	1/24/2043	1/24/2043	52.01	52.01	52.01	52.01	52.01	52.01	61.8	61.8	61.8	61.8	22.24	22.24	22.24	8.9	22.24	22.24	61.8	61.8	61.8	61.8	61.8	61.8	52.01	52.01
SPP South - Energy Price - 1H2023	7330	1/25/2043	1/25/2043	52.01	52.01	52.01	52.01	52.01	52.01	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	52.01	52.01
SPP South - Energy Price - 1H2023	7331	1/26/2043	1/26/2043	44.86	44.86	44.86	44.86	44.86	44.86	47.04	47.04	47.04	47.04	47.04	47.04	43.28	43.28	47.04	47.04	47.04	47.04	47.04	47.04	47.04	47.04	44.86	44.86
SPP South - Energy Price - 1H2023	7332	1/27/2043	1/27/2043	43.45	43.45	43.45	43.45	43.45	43.45	45.77	45.77	45.77	45.77	45.77	45.77	45.76	45.76	45.76	45.76	45.76	45.77	45.77	45.77	45.76	45.76	43.45	43.45
SPP South - Energy Price - 1H2023	7333	1/28/2043	1/28/2043	40.78	40.78	40.78	40.78	40.78	40.78	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	43.35	40.78	40.78
SPP South - Energy Price - 1H2023	7334	1/29/2043	1/29/2043	46.1	46.1	46.1	46.1	46.1	46.1	47.51	48.07	47.51	47.51	47.51	47.51	47.51	47.51	47.51	47.51	47.51	47.51	48.07	48.07	48.07	48.07	50.12	50.12
SPP South - Energy Price - 1H2023	7335	1/30/2043	1/30/2043	50.12	50.12	50.12	50.12	50.12	50.12	51.8	51.8	51.8	51.8	51.8	51.8	47.65	47.65	47.65	47.65	47.65	51.8	51.8	51.8	51.8	51.8	50.12	50.12
SPP South - Energy Price - 1H2023	7336	1/31/2043	1/31/2043	50.12	50.12	50.12	50.12	50.12	50.12	59.55	59.55	59.55	45.23	8.77	8.77	7.99	8.77	7.83	8.77	8.77	59.55	59.55	59.55	59.55	59.55	50.12	50.12
SPP South - Energy Price - 1H2023	7337	2/1/2043	2/1/2043	30.96	30.96	30.96	30.96	30.96	30.96	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	34.87	30.96	30.96
SPP South - Energy Price - 1H2023	7338	2/2/2043	2/2/2043	31.11	31.11	31.11	31.11	31.11	31.11	38.22	38.22	38.22	38.22	38.22	35.16	35.16	35.16	31.96	4.17	35.16	38.22	38.22	38.22	38.22	38.22	31.11	31.11
SPP South - Energy Price - 1H2023	7339	2/3/2043	2/3/2043	29.24	29.24	29.24	29.24	29.24	29.24	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	29.24	29.24
SPP South - Energy Price - 1H2023	7340	2/4/2043	2/4/2043	27.34	27.34	27.34	27.34	27.34	27.34	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	34.13	27.34	27.34
SPP South - Energy Price - 1H2023	7341	2/5/2043	2/5/2043	28.83	28.83	28.83	28.83	28.83	28.83	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	28.83	28.83
SPP South - Energy Price - 1H2023	7342	2/6/2043	2/6/2043	28.65	28.65	28.65	28.65	28.65	28.65	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	29.5	28.65
SPP South - Energy Price - 1H2023	7343	2/7/2043	2/7/2043	28.65	28.65	28.65	28.65	28.65	28.65	32.26	32.26	32.26	32.26	29.95	29.95	29.95	29.95	29.95	27.28	29.95	32.26	32.26	32.26	32.26	32.26	28.65	28.65
SPP South - Energy Price - 1H2023	7344	2/8/2043	2/8/2043	28.65	28.65	28.65	28.65	28.65	28.65	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26	28.65	28.65
SPP South - Energy Price - 1H2023	7345	2/9/2043	2/9/2043	26.59	26.59	26.59	26.59	26.59	26.59	33.32	33.32	33.32	33.32	33.22	30.65	30.65	30.65	28.67	30.65	33.32	33.32	33.32	33.32	33.32	33.32	26.59	26.59
SPP South - Energy Price - 1H2023	7346	2/10/2043	2/10/2043	26.69	26.69	26.69	26.69	26.69	26.69	32.13	32.13	32.13	32.13	32.13	32.13	29.56	9.69	4.17	28.76	29.56	32.13	32.13	32.13	32.13	32.13	26.69	26.69
SPP South - Energy Price - 1H2023	7347	2/11/2043	2/11/2043	27.45	27.45	27.45	27.45	27.45	27.45	32.95	32.95	32.95	5.27	4.17	4.17	4.17	4.17	4.17	4.17	4.01	32.95	32.95	32.95	32.95	32.95	27.45	27.45
SPP South - Energy Price - 1H2023	7348	2/12/2043	2/12/2043	27.21	27.21	27.21	27.21	27.21	27.21	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.34	30.1	30.08	32.34	32.7	32.7	32.7	32.7	32.7	27.21	27.21
SPP South - Energy Price - 1H2023	7349	2/13/2043	2/13/2043	26.33	26.33	26.33	26.33	26.33	26.33	31.75	31.75	31.75	30.32	28.42	27.89	27.89	4.21	27.89	4.17	27.89	31.75	31.75	31.75	31.75	31.75	26.33	26.33
SPP South - Energy Price - 1H2023	7350	2/14/2043	2/14/2043	26.33	26.33	26.33	26.33	26.33	26.33	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	26.33	26.33
SPP South - Energy Price - 1H2023	7351	2/15/2043	2/15/2043	26.33	26.33	26.33	26.33	26.33	26.33	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	29.66	26.33	26.33
SPP South - Energy Price - 1H2023	7352	2/16/2043	2/16/2043	31.05	31.05	31.05	31.05	31.05	31.05	38.38	38.47	38.55	38.47	38.47	38.38	38.38	38.38	38.38	38.38	38.38	38.47	38.38	38.47	38.41	38.38	31.05	31.05
SPP South - Energy Price - 1H2023	7353	2/17/2043	2/17/2043	30.26	30.26	30.26	30.26	30.26	30.26	37.52	37.52	37.52	37.52	37.52	34.52	34.52	34.52	26.18	32.43	34.52	37.52	37.52	37.52	37.52	37.52	30.26	30.26
SPP South - Energy Price - 1H2023	7354	2/18/2043	2/18/2043	40.72	40.72	40.72	40.72	40.72	40.72	48.89	48.89	6.19	1.01	0.87	0.87	0.87	0.87	0.76	0.87	0.87	3.71	48.89	48.89	48.89	48.89	40.72	40.72
SPP South - Energy Price - 1H2023	7355	2/19/2043	2/19/2043	32.69	32.69	32.69	32.69	32.69	32.69	40.17	40.17	34.55	5.27	5.73	0.87	0.87	0.8	0.87	0.87	0.87	39.8	40.17	40.17	40.17	40.17	32.69	32.69
SPP South - Energy Price - 1H2023	7356	2/20/2043	2/20/2043	29.78	29.78	29.78	29.78	29.78	29.78	37	37	37	36.44	4.67	4.37	4.26	4.21	4.67	4.67	37	37	37	37	37	37	29.78	29.78
SPP South - Energy Price - 1H2023	7357	2/21/2043	2/21/2043	29.78	29.78	29.78	29.78	29.78	29.78	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	33.54	29.78	29.78
SPP South - Energy Price - 1H2023	7358	2/22/2043	2/22/2043	29.78	29.78	29.78	29.78	29.78	29.78	33.54	33.54	33.54	33.54	33.54	33.54	33.54	11.2	31.9	31.9	31.9	33.54	33.54	33.54	33.54	33.54	29.78	29.78
SPP South - Energy Price - 1H2023	7359	2/23/2043	2/23/2043	28.11	28.33	28.27	28.33	28.33	30.68	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.52	37.58	37.52	37.52	32.59	32.59
SPP South - Energy Price - 1H2023	7360	2/24/2043	2/24/2043	32.59	32.59	32.59	32.59	32.59	34.27	39.67	39.67	39.66	39.66	36.49	36.49	36.49	36.49	36.49	36.49	38.02	39.66	39.66	39.66	39.66	39.66	29.55	29.55
SPP South - Energy Price - 1H2023	7361	2/25/2043	2/25/2043	27.76	27.76	27.76	27.76	27.76	29.91	36.8	36.8	36.8	31.96	5.01	5.01	4.48	4.69	4.82	5.01	5.01	36.8	36.8	36.8	36.8	36.8	26.94	26.94
SPP South - Energy Price - 1H2023	7362	2/26/2043	2/26/2043	28.52	28.52	28.52	28.52	28.52	28.52	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	38.54	32.65	32.1
SPP South - Energy Price - 1H2023	7363	2/27/2043	2/27/2043	32.1	32.1	32.1	32.1	31.98	32.1	37.76	39.43	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	37.76	27.82	27.82
SPP South - Energy Price - 1H2023	7364	2/28/2043	2/28/2043	27.82	27.82	27.82	27.82	27.82	27.82	31.33	31.32	0	0	0	0	0	0	0	0	0	5.02	31.33	31.33	31.33	31.32	27.82	27.82
SPP South - Energy Price - 1H2023	7365	3/1/2043	3/1/2043	13.51	13.59	13.59	13.51	13.51	13.51	18.8	18.52	3.19	3.08	2.79	2.8	2.87	3.01	3.08	3.21	3.14	3.08	18.52	18.52	18.52	18.52	13.51	13.51
SPP South - Energy Price - 1H2023	7366	3/2/2043	3/2/2043	17.28	17.28	17.28	17.28	17.28	17.28	27.38	22.22	2.99	2.9	16.62	16.58	16.46	17.89	16.46	3.62	2.95	22.04	26.18	27.38	27.38	27.38	17.28	17.28
SPP South - Energy Price - 1H2023	7367	3/3/2043	3/3/2043	14.62	14.62	14.62	14.62	14.62	14.62	23.82	23.82	20.43	11.25	2.62	2.63	2.69	2.82	2.82	2.82	2.82	2.84	23.82	23.82	23.82	23.82	16.26	16.19
SPP South - Energy Price - 1H2023	7368	3/4/2043	3/4/2043	16.26	16.26	16.26	16.26	16.26	17.39	25.62	25.62	25.62	25.62	23.57	23.57	24.66	23.57	23.57	23.57	24.91	25.62	25.62	25.62	25.62	25.62	17.74	15.97
SPP South - Energy Price - 1H2023	7369	3/5/2043	3/5/2043	17.79	17.75	17.53	17.75	17.71	17.75	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	3.01	23.07	25.07	25.07	25.07	25.07	25.07	17.29	17.22
SPP South - Energy Price - 1H2023	7370	3/6/2043	3/6/2043	16.07	16.4	16.4	16.4	16.4	16.4	23.88	23.17	22.91	22.22	21.93	19.81	19.81	5.19	2.89	16.95	19.81	22.91	22.91	22.91	22.91	22.91	13.94	13.94
SPP South - Energy Price - 1H2023	7371	3/7/2043	3/7/2043	13.94	13.94	13.94	13.94	13.94	13.94	19.11	19.11	18.09	18.09	2.79	17.83	18.09	18.09	19.11	19.11	19.11	19.28	21.11	21.17	21.11	19.47	13.94	13.94
SPP South - Energy Price - 1H2023	7372	3/8/2043	3/8/2043	13.94	13.94	14.1	13.94	14.1	14.31	19.67	19.33	19.11	19.11	19.11	19.11	19.11	18.09	18.09	19.11	19.11	19.33	19.67	19.67	19.11	19.11	13.94	13.94
SPP South - Energy Price - 1H2023	7373	3/9/2043	3/9/2043	12.98	12.98	12.98	12.98	12.98	12.98	19.78	19.78	18.57	2.9	2.9	2.9	2.69	2.82	2.9	3.01	2.95	2.9	19.78	19.78	19.78	19.78	12.98	12.98
SPP South - Energy Price - 1H2023	7374	3/10/2043	3/10/2043	13.25	13.25	13.25	13.25	13.25	13.25	20.13	20.13	20.13	20.13	19.74	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	13.25	13.31
SPP South - Energy Price - 1H2023	7375	3/11/2043	3/11/2043	13.66	13.66	13.66	13.66	13.66	13.66	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	13.66	13.66
SPP South - Energy Price - 1H2023	7376	3/12/2043	3/12/2043	14.27	14.27	14.55	14.27	14.55	14.55	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	14.27	14.27
SPP South - Energy Price - 1H2023	7377	3/13/2043	3/13/2043	13.57	13.57	13.57	13.57	13.57	13.57	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	20.55	13.57	13.57
SPP South - Energy Price - 1H2023	7378	3/14/2043	3/14/2043	13.57	13.57	13.57	13.57	13.57	13.57	18.6	18.6	18.6	3.1	2.79	2.79	0.49	0.44	2.79	2.79	2.79	3.03	18.6	18.6	18.6	18.6	13.57	13.57
SPP South - Energy Price - 1H2023	7379	3/15/2043	3/15/2043	13.57	13.57	13.57	13.57	13.57	13.57	18.6	18.6	18.91	18.74	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	13.57	13.57
SPP South - Energy Price - 1H2023	7380	3/16/2043	3/16/2043	14.17	14.17	14.17	14.17	14.17	14.17	20.56	20.56	20.56	20.56	20.56	20.56	20.34	20.56	20.56	20.56	20.56	20.56	20.56	20.56	20.56	20.56	14.17	14.17
SPP South - Energy Price - 1H2023	7381	3/17/2043	3/17/2043	13.98	13.98	13.98	13.98	13.98	13.98	20.3	20.3	20.3	20.3	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	20.3	20.3	20.3	20.3	13.98	13.98
SPP South - Energy Price - 1H2023	7382	3/18/2043	3/18/2043	14.07	14.07	14.07	14.07	14.07	14.08	20.43	20.43	20.43	2.9	2.89	2.63	2.69	2.82	2.89	2.89	3.59	8.86	20.43	20.43	20.43	20.43	14.08	14.08
SPP South - Energy Price - 1H2023	7383	3/19/2043	3/19/2043	14.96	14.96	14.96	14.96	14.96	14.96	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	14.96	14.96
SPP South - Energy Price - 1H2023	7384	3/20/2043	3/20/2043	14.54	14.54	14.54	14.54	14.54	14.54	21.04	18.83	0.06	0.06	0	0	0	0.06	1.18	1.29	4.35	21.04	21.04	21.04	21.04	21.04	14.54	14.54
SPP South - Energy Price - 1H2023	7385	3/21/2043	3/21/2043	14.54	14.54	14.54	14.54	14.54	14.54	19.93	19.93	19.93	19.93	19.93	19.93	18.33	18.42	18.45	18.33	18.33	19.93	19.93	19.93	19.93	19.93	14.54	14.54
SPP South - Energy Price - 1H2023	7386	3/22/2043	3/22/2043	14.54	14.54	14.54	14.54	14.54	14.54	19.93	19.93	19.93	19.93	18.38	18.33	18.33	3.01	18.33	3.83	18.33	19.93	19.93	19.93	19.93	19.93	14.54	14.54

SPP South - Energy Price - 1H2023	7387	3/23/2043	3/23/2043	14.85	14.85	14.85	14.85	14.85	14.85	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	21.45	14.85	14.85
SPP South - Energy Price - 1H2023	7388	3/24/2043	3/24/2043	14.33	14.33	14.33	14.33	14.33	14.33	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	20.77	14.33	14.33
SPP South - Energy Price - 1H2023	7389	3/25/2043	3/25/2043	13.81	13.81	13.81	13.81	13.81	13.81	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	13.81	13.81
SPP South - Energy Price - 1H2023	7390	3/26/2043	3/26/2043	13.04	13.04	13.04	13.04	13.04	13.04	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	19.09	13.04	13.04
SPP South - Energy Price - 1H2023	7391	3/27/2043	3/27/2043	12.2	12.2	12.2	12.2	12.2	12.2	17.99	17.99	16.1	16.1	16.1	16.1	16.1	16.1	16.1	17.99	17.99	17.99	17.99	17.99	17.99	17.99	12.2	12.2
SPP South - Energy Price - 1H2023	7392	3/28/2043	3/28/2043	12.2	12.2	12.2	12.2	12.2	12.2	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	12.2	12.2
SPP South - Energy Price - 1H2023	7393	3/29/2043	3/29/2043	12.2	12.2	12.2	12.2	12.2	12.2	16.73	16.73	16.73	4	0	0	0	0	0	0	0	4.49	16.73	16.73	16.73	16.73	12.2	12.2
SPP South - Energy Price - 1H2023	7394	3/30/2043	3/30/2043	12.57	12.57	12.57	12.57	12.57	12.57	16.53	5.28	3.89	3.75	4.73	5.28	5.68	5.74	5.63	5.28	18.47	18.47	18.47	18.47	18.47	18.47	12.57	12.57
SPP South - Energy Price - 1H2023	7395	3/31/2043	3/31/2043	13.21	13.21	13.21	13.21	13.21	13.21	19.3	19.3	18.46	18.46	16.37	3.76	3.9	16.37	16.37	4.24	19.3	19.3	19.3	19.3	19.3	19.3	13.21	13.21
SPP South - Energy Price - 1H2023	7396	4/1/2043	4/1/2043	4.28	4.28	4.28	4.28	4.28	4.28	0.88	0.88	0.82	0.76	0.76	0.16	0.76	0.76	0.76	0.82	0.82	0.82	0.82	0.84	0.82	0.82	4.28	4.28
SPP South - Energy Price - 1H2023	7397	4/2/2043	4/2/2043	4.38	4.38	4.38	4.38	4.38	4.38	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.83	0.9	0.9	0.9	0.9	0.9	0.9	4.38	4.38
SPP South - Energy Price - 1H2023	7398	4/3/2043	4/3/2043	4.09	4.09	4.09	4.09	4.09	4.09	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	4.09	4.09
SPP South - Energy Price - 1H2023	7399	4/4/2043	4/4/2043	4.09	4.09	4.09	4.09	4.09	4.09	5.28	5.28	5.28	5.28	5.28	1.6	1.6	1.2	1.2	1.29	1.6	5.28	5.28	5.28	5.28	5.28	4.09	4.09
SPP South - Energy Price - 1H2023	7400	4/5/2043	4/5/2043	4.09	4.09	4.09	4.09	4.09	4.09	5.28	5.28	5.04	4.86	5.28	5	5.28	5.28	5.25	5.28	5.28	5.28	5.28	5.28	5.28	5.28	4.09	4.09
SPP South - Energy Price - 1H2023	7401	4/6/2043	4/6/2043	4.01	4.01	4.01	4.01	4.01	4.01	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	4.01	4.01
SPP South - Energy Price - 1H2023	7402	4/7/2043	4/7/2043	4.14	4.14	4.14	4.14	4.14	4.14	0.86	0.79	0.27	0.16	0.16	0.16	0.27	0.29	0.27	0.27	0.27	0.86	0.86	0.86	0.86	0.86	4.14	4.14
SPP South - Energy Price - 1H2023	7403	4/8/2043	4/8/2043	4.24	4.24	4.24	4.24	4.25	4.25	0.88	0.88	0.72	0.72	0.72	0.7	0.72	0.6	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	4.24	4.24
SPP South - Energy Price - 1H2023	7404	4/9/2043	4/9/2043	4.19	4.19	4.19	4.19	4.19	4.19	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	4.19	4.19
SPP South - Energy Price - 1H2023	7405	4/10/2043	4/10/2043	4.15	4.15	4.15	4.15	4.15	4.15	0.86	0.86	0.21	0.05	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.18	0.75	0.86	0.86	0.86	4.15	4.15
SPP South - Energy Price - 1H2023	7406	4/11/2043	4/11/2043	4.15	4.15	4.15	4.15	4.15	4.15	5.36	5.36	0.18	0	0	0	0	0	0	0	0.14	1.28	5.36	5.36	5.36	5.36	4.15	4.15
SPP South - Energy Price - 1H2023	7407	4/12/2043	4/12/2043	4.15	4.15	4.15	4.15	4.15	4.15	5.36	5.36	5.36	4.93	5.21	4.93	4.93	4.93	4.93	5.2	5.36	5.36	5.36	5.36	5.36	5.36	4.15	4.15
SPP South - Energy Price - 1H2023	7408	4/13/2043	4/13/2043	4.13	4.13	4.13	4.13	4.13	4.13	0.85	0.85	0.85	0.85	0.84	0.85	0.75	0.25	0.73	0.79	0.79	0.85	0.85	0.85	0.85	0.85	4.13	4.13
SPP South - Energy Price - 1H2023	7409	4/14/2043	4/14/2043	4.17	4.17	4.17	4.17	4.17	4.17	0.86	0.86	0.86	0.82	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.86	0.86	0.86	0.86	4.17	4.17
SPP South - Energy Price - 1H2023	7410	4/15/2043	4/15/2043	4.22	4.22	4.22	4.22	4.22	4.22	0.87	0.82	0.03	0.02	0	0.02	0	0.02	0.02	0.02	0.22	0.87	0.87	0.87	0.87	0.87	4.22	4.22
SPP South - Energy Price - 1H2023	7411	4/16/2043	4/16/2043	4.16	4.16	4.16	4.16	4.16	4.16	0.86	0.82	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.19	0.75	0.8	0.86	0.86	0.86	4.16	4.16
SPP South - Energy Price - 1H2023	7412	4/17/2043	4/17/2043	4.07	4.07	4.07	4.07	4.07	4.07	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	4.07	4.07
SPP South - Energy Price - 1H2023	7413	4/18/2043	4/18/2043	4.07	4.07	4.07	4.07	4.07	4.07	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	4.07	4.07
SPP South - Energy Price - 1H2023	7414	4/19/2043	4/19/2043	4.07	4.07	4.07	4.07	4.07	4.07	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	4.07	4.07
SPP South - Energy Price - 1H2023	7415	4/20/2043	4/20/2043	3.98	3.98	3.98	3.98	3.98	3.98	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	3.98	3.98
SPP South - Energy Price - 1H2023	7416	4/21/2043	4/21/2043	4.05	4.05	4.05	4.05	4.05	4.05	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	4.05	4.05
SPP South - Energy Price - 1H2023	7417	4/22/2043	4/22/2043	3.94	3.94	3.94	3.94	3.94	3.94	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	3.94	3.94
SPP South - Energy Price - 1H2023	7418	4/23/2043	4/23/2043	3.91	3.91	3.91	3.91	3.91	3.91	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	3.91	3.91
SPP South - Energy Price - 1H2023	7419	4/24/2043	4/24/2043	3.87	3.87	3.87	3.87	3.87	3.87	0.81	0.81	0.81	0.81	0.81	0.81	0.74	0.74	0.74	0.74	0.74	0.81	0.81	0.81	0.81	0.81	3.87	3.87
SPP South - Energy Price - 1H2023	7420	4/25/2043	4/25/2043	3.87	3.87	3.87	3.87	3.87	3.87	5	5	5	5	1.13	1.14	1.18	1.2	1.2	1.2	1.33	1.63	1.5	5	5	5	3.87	3.87
SPP South - Energy Price - 1H2023	7421	4/26/2043	4/26/2043	3.87	3.87	3.87	3.87	3.87	3.87	5	5	1.2	1.14	1.13	1.2	1.2	1.2	1.2	1.29	1.33	5	5	5	5	5	3.87	3.87
SPP South - Energy Price - 1H2023	7422	4/27/2043	4/27/2043	4.02	4.02	4.02	4.02	4.02	4.02	0.83	0.73	0.67	0.08	0.1	0.11	0.73	0.67	0.73	0.67	0.67	0.67	0.83	0.83	0.83	0.83	4.02	4.02
SPP South - Energy Price - 1H2023	7423	4/28/2043	4/28/2043	4.11	4.11	4.11	4.11	4.11	4.11	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	4.11	4.11
SPP South - Energy Price - 1H2023	7424	4/29/2043	4/29/2043	4.1	4.1	4.1	4.1	4.1	4.1	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	4.1	4.1
SPP South - Energy Price - 1H2023	7425	4/30/2043	4/30/2043	3.93	3.93	3.93	3.93	3.93	3.93	0.82	0.82	0.82	0.8	0.71	0.75	0.79	0.82	0.82	0.71	0.75	0.82	0.82	0.82	0.82	0.82	3.93	3.93
SPP South - Energy Price - 1H2023	7426	5/1/2043	5/1/2043	9.16	9.16	9.16	9.16	9.16	9.16	-0.71	-0.62	-0.08	-0.11	-0.09	-0.11	-0.11	-0.11	-0.11	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	9.16	9.16
SPP South - Energy Price - 1H2023	7427	5/2/2043	5/2/2043	9.16	9.16	9.16	9.16	9.16	9.16	10.58	10.58	9.99	9.73	9.73	9.73	3.31	9.73	9.73	9.73	9.73	10.58	10.58	10.58	10.58	10.58	9.16	9.16
SPP South - Energy Price - 1H2023	7428	5/3/2043	5/3/2043	9.16	9.16	9.16	9.16	9.16	9.16	10.58	2.53	1.47	2.53	2.53	2.53	2.53	2.53	2.88	10.58	10.58	10.58	10.58	10.58	10.58	10.58	9.16	9.16
SPP South - Energy Price - 1H2023	7429	5/4/2043	5/4/2043	8.93	8.93	8.93	8.93	8.93	8.93	-0.7	-0.64	-0.56	-0.56	-0.56	-0.56	-0.56	-0.56	-0.56	-0.56	-0.61	-0.7	-0.7	-0.7	-0.7	-0.7	8.93	8.93
SPP South - Energy Price - 1H2023	7430	5/5/2043	5/5/2043	9.21	9.21	9.21	9.21	9.21	9.21	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	9.21	9.21
SPP South - Energy Price - 1H2023	7431	5/6/2043	5/6/2043	9.69	9.69	9.69	9.69	9.69	9.69	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	9.69	9.69
SPP South - Energy Price - 1H2023	7432	5/7/2043	5/7/2043	9.83	9.83	9.83	9.83	9.83	9.83	-0.76	-0.76	-0.76	-0.76	-0.7	-0.76	-0.7	-0.71	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	9.83	9.83
SPP South - Energy Price - 1H2023	7433	5/8/2043	5/8/2043	9.73	9.73	9.73	9.73	9.73	9.73	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	9.73	9.73
SPP South - Energy Price - 1H2023	7434	5/9/2043	5/9/2043	9.73	9.73	9.73	9.73	9.73	9.73	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.26	11.3	11.24	9.73	9.73
SPP South - Energy Price - 1H2023	7435	5/10/2043	5/10/2043	9.73	9.73	9.73	9.73	9.73	9.73	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	9.73	9.73
SPP South - Energy Price - 1H2023	7436	5/11/2043	5/11/2043	9.86	9.86	9.86	9.86	9.86	9.86	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	-0.76	9.86	9.86
SPP South - Energy Price - 1H2023	7437	5/12/2043	5/12/2043	9.91	9.91	9.91	9.91	9.91	9.91	-0.77	-0.77	-0.77	-0.77	-0.7	-0.7	-0.7	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	9.91	9.91
SPP South - Energy Price - 1H2023	7438	5/13/2043	5/13/2043	10.11	10.11	10.11	10.11	10.11	10.11	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	10.11	10.11
SPP South - Energy Price - 1H2023	7439	5/14/2043	5/14/2043	10.23	10.23	10.23	10.23	10.23	10.23	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	10.23	10.23
SPP South - Energy Price - 1H2023	7440	5/15/2043	5/15/2043	10.19	10.19	10.19	10.19	10.19	10.19	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	-0.78	10.19	10.19
SPP South - Energy Price - 1H2023	7441	5/16/2043	5/16/2043	10.19	10.19	10.19	10.19	10.19	10.19	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	10.18	10.19
SPP South - Energy Price - 1H2023	7442	5/17/2043	5/17/2043	10.19	10.19	10.18	10.18	10.18	10.18	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	11.76	10.19	10.19
SPP South - Energy Price - 1H2023	7443	5/18/2043	5/18/2043	10.49	10.49	10.49	10.49	10.49	10.49	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	10.49	10.49
SPP South - Energy Price - 1H2023	7444	5/19/2043	5/19/2043	10.54	10.54	10.54	10.54	10.54	10.54	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	10.54	10.54
SPP South - Energy Price - 1H2023	7445	5/20/2043	5/20/2043	10.46	10.46	10.46	10.46	10.46	10.46	-0.8	-0.76	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	10.46	10.46
SPP South - Energy Price - 1H2023	7446	5/21/2043	5/21/2043	10.35	10.35	10.35	10.35	10.35	10.35	-0.79	-0.75	-0.69	-0.69	-0.69	-0.69	-0.69	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	10.35	10.35
SPP South - Energy Price - 1H2023	7447	5/22/2043	5/22/2043	10	10	10	10	10	10	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	10	10
SPP South - Energy Price - 1H2023	7448	5/23/2043	5/23/2043	10	10	10	10	10	10	11.55	11.55	11.55	11.52	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	10	10
SPP South - Energy Price - 1H2023	7449	5/24/2043	5/24/2043	10	10	10	10	10	10	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	10	10
SPP South - Energy Price - 1H2023	7450	5/25/2043	5/25/2043	10	10	10	10	10	10	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	-0.77	10	10
SPP South - Energy Price - 1H2023	7451	5/26/2043	5/26/2043	10.31	10.31	10.31	10.31	10.31	10.31	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	10.42	10.31
SPP South - Energy Price - 1H2023	7452	5/27/2043	5/27/2043	10.55	10.55	10.55	10.55	10.55	10.55	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	10.55	10.55
SPP South - Energy Price - 1H2023	7453	5/28/2043	5/28/2043	10.62	10.62	10.62	10.62	10.62	10.62	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	-0.81	10.62	10.62
SPP South - Energy Price - 1H2023	7454	5/29/2043	5/29/2043	10.8	10.8	10.8	10.8	10.8	10.8	-0.83	-0.83	-0.83	-0.14	-0.83	-0.76	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	10.8	10.8
SPP South - Energy Price - 1H2023	7455	5/30/2043	5/30/2043	10.8	10.8	10.8	10.8	10.8	10.8	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	10.8	10.8
SPP South - Energy Price - 1H2023	7456	5/31/2043	5/31/2043	10.8	10.8	10.8	10.8	10.8	10.8	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	12.47	10.8	10.8
SPP South - Energy Price - 1H2023	7457	6/1/2043	6/1/2043	21.16	21.16	21.16	21.16	21.16	21.16	21.49	21.49	19.77	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.49	21.16	21.16
SPP South - Energy Price - 1H2023	7458	6/2/2043	6/2/2043	20.6	20.6	20.6	20.6	20.6	20.6	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.72	20.85
SPP South - Energy Price - 1H2023	7459	6/3/2043	6/3/2043	20.85	20.85	20.85	20.85	20.85	20.85	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	20.85	20.85
SPP South - Energy Price - 1H2023	7460	6/4/2043	6/4/2043	19.65	19.65	19.65	19.65	19.65	19.65	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	20.14	19.65	19.65
SPP South - Energy Price - 1H2023	7461	6/5/2043	6/5/2043	19.49	19.49	19.49	19.49	19.49	19.49	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19.49	19.49
SPP South - Energy Price - 1H2023	7462	6/6/2043	6/6/2043	19.49	19.49	19.49	19.49	19.49	19.49	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	19.49	19.49
SPP South - Energy Price - 1H2023	7463	6/7/2043	6/7/2043	19.49	19.49	19.49	19.49	19.49	19.49	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	20.13	19.49	19.49
SPP South - Energy Price - 1H2023	7464	6/8/2043	6/8/2043	21.37	21.37	21.37	21.37	21.37	21.37	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.68	21.37	21.37
SPP South - Energy Price - 1H2023	7465	6/9/2043	6/9/2043	23.19	23.19	23.19	23.19	23.19	23.19	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.22	23.19
SPP South - Energy Price - 1H2023	7466	6/10/2043	6/10/2043	23.75	23.75	23.75	23.75	23.75	23.75	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.75	23.75
SPP South - Energy Price - 1H2023	7467	6/11/2043	6/11/2043	23.34	23.34	23.34	23.34	23.34	23.34	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.44	23.34	23.34
SPP South - Energy Price - 1H2023	7468	6/12/2043	6/12/2043	21.42	21.42	21.42	21.42	21.42	21.42	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.72	21.42	21.42
SPP South - Energy Price - 1H2023	7469	6/13/2043	6/13/2043	21.42	21.42	21.42	21.42	21.42	21.42	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	21.42	21.42

SPP South - Energy Price - 1H2023	7470	6/14/2043	6/14/2043	21.42	21.42	21.42	21.42	21.42	21.42	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	22.13	21.42	21.42
SPP South - Energy Price - 1H2023	7471	6/15/2043	6/15/2043	23.26	23.26	23.26	23.26	23.26	23.26	23.36	23.36	23.36	23.36	23.36	21.49	23.36	23.36	23.36	23.36	23.36	23.36	23.36	23.36	23.36	23.36	23.26	23.26
SPP South - Energy Price - 1H2023	7472	6/16/2043	6/16/2043	22.57	22.57	22.57	22.57	22.57	22.57	22.74	22.74	20.92	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.74	22.57	22.57
SPP South - Energy Price - 1H2023	7473	6/17/2043	6/17/2043	22.41	22.41	22.41	22.41	22.41	22.41	22.6	22.6	22.6	22.61	22.6	22.61	22.61	22.61	22.61	22.61	22.61	22.61	22.61	22.61	22.63	22.61	24.69	22.41
SPP South - Energy Price - 1H2023	7474	6/18/2043	6/18/2043	22.74	22.74	22.74	22.74	22.74	22.74	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	23.17	23.05
SPP South - Energy Price - 1H2023	7475	6/19/2043	6/19/2043	23.17	23.17	23.17	23.17	23.17	23.17	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.28	23.77	23.28	23.28	23.28	23.27
SPP South - Energy Price - 1H2023	7476	6/20/2043	6/20/2043	23.17	23.17	23.17	23.17	23.17	23.17	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.17	23.17
SPP South - Energy Price - 1H2023	7477	6/21/2043	6/21/2043	23.17	23.17	23.17	23.17	23.17	23.17	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.17	23.17
SPP South - Energy Price - 1H2023	7478	6/22/2043	6/22/2043	23.83	23.83	23.83	23.83	23.83	23.83	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.87	23.83	23.83
SPP South - Energy Price - 1H2023	7479	6/23/2043	6/23/2043	24.1	24.1	24.1	24.1	24.1	24.1	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.11	24.1	24.1
SPP South - Energy Price - 1H2023	7480	6/24/2043	6/24/2043	24.54	24.54	24.54	24.54	24.54	24.54	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.51	24.54	24.54
SPP South - Energy Price - 1H2023	7481	6/25/2043	6/25/2043	24.79	24.79	24.79	24.79	24.79	24.79	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.79	24.79
SPP South - Energy Price - 1H2023	7482	6/26/2043	6/26/2043	23.9	23.9	23.9	23.9	23.9	23.9	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.93	23.9	23.9
SPP South - Energy Price - 1H2023	7483	6/27/2043	6/27/2043	23.9	23.9	23.9	23.9	23.9	23.9	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	23.9	23.9
SPP South - Energy Price - 1H2023	7484	6/28/2043	6/28/2043	23.9	23.9	23.9	23.9	23.9	23.9	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	24.68	23.9	23.9
SPP South - Energy Price - 1H2023	7485	6/29/2043	6/29/2043	22.6	22.6	22.6	22.6	22.6	22.6	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.78	22.6	22.6
SPP South - Energy Price - 1H2023	7486	6/30/2043	6/30/2043	23.1	23.1	23.1	23.1	23.1	23.1	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.22	23.57	23.57	23.57	23.57	23.22	23.83	24.25	24.48	24.12	23.88
SPP South - Energy Price - 1H2023	7487	7/1/2043	7/1/2043	48.6	48.41	47.94	48.6	48.6	48.6	49.49	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	52.06	49.49	52.85	51.46	47.37	45.11
SPP South - Energy Price - 1H2023	7488	7/2/2043	7/2/2043	38.25	37.97	36.82	35.89	38.18	37.84	39.95	39.95	39.95	39.95	39.95	39.95	39.95	39.95	40.28	41.7	39.95	42.59	45.54	45.54	45.54	45.54	42.37	35.89
SPP South - Energy Price - 1H2023	7489	7/3/2043	7/3/2043	46.81	46.14	44.82	44.82	44.82	46.4	52.54	51.05	53.64	53.23	49.34	49.9	54.74	54.54	56.52	56.52	52	57.99	62.76	60.14	59.96	56.41	46.71	50.78
SPP South - Energy Price - 1H2023	7490	7/4/2043	7/4/2043	48	46.53	46.14	44.82	46.75	46.4	46.5	46.96	47.55	45.17	45.17	45.17	45.17	48.77	49.1	49.1	45.17	49.1	48.3	45.17	49.1	45.59	45.66	46.62
SPP South - Energy Price - 1H2023	7491	7/5/2043	7/5/2043	46.81	46.53	44.82	44.82	44.82	44.82	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	45.17	44.82	44.82
SPP South - Energy Price - 1H2023	7492	7/6/2043	7/6/2043	47.78	47.78	47.78	47.78	47.78	47.78	51.31	51.31	51.3	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	51.31	47.78	47.78
SPP South - Energy Price - 1H2023	7493	7/7/2043	7/7/2043	48.5	48.5	48.5	48.5	48.5	48.5	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	48.5	48.5
SPP South - Energy Price - 1H2023	7494	7/8/2043	7/8/2043	48.13	48.13	48.01	48.01	48.13	48.13	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	48.01	48.01
SPP South - Energy Price - 1H2023	7495	7/9/2043	7/9/2043	46.71	46.71	46.71	46.71	46.71	46.71	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	50.28	52.06	46.71
SPP South - Energy Price - 1H2023	7496	7/10/2043	7/10/2043	45.93	45.93	45.93	45.93	45.93	45.93	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	49.54	45.93	45.93
SPP South - Energy Price - 1H2023	7497	7/11/2043	7/11/2043	45.93	45.93	45.93	45.93	45.93	45.93	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	49.76	46.54	46.28	46.28	45.93	45.93
SPP South - Energy Price - 1H2023	7498	7/12/2043	7/12/2043	45.93	45.93	45.93	45.93	45.93	45.93	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	46.28	50.22	51.27	51.27	51.11	46.8	46.8
SPP South - Energy Price - 1H2023	7499	7/13/2043	7/13/2043	47.59	47.59	47.59	47.59	47.59	47.59	51.13	51.13	51.13	51.13	51.13	51.13	51.13	51.13	51.13	51.13	51.13	51.13	54.8	51.13	51.13	51.13	48.25	48.25
SPP South - Energy Price - 1H2023	7500	7/14/2043	7/14/2043	48.25	48.25	48.25	48.25	48.25	48.25	51.76	51.76	51.76	51.76	51.76	55.41	56.13	55.74	61.47	63.27	63.17	63.24	63.17	63.54	63.17	57.87	50.86	50.74
SPP South - Energy Price - 1H2023	7501	7/15/2043	7/15/2043	50.74	50.66	50.56	50.61	50.74	50.52	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	52.14	56.16	53.43	52.14	52.14	48.66	48.66
SPP South - Energy Price - 1H2023	7502	7/16/2043	7/16/2043	50.62	50.62	50.62	50.62	50.62	50.62	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	53.66	55.77	53.66	53.66	50.25	50.25
SPP South - Energy Price - 1H2023	7503	7/17/2043	7/17/2043	48.78	48.78	48.78	48.78	48.78	48.78	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	52.26	49.91	48.78
SPP South - Energy Price - 1H2023	7504	7/18/2043	7/18/2043	48.78	48.78	48.78	48.78	48.78	48.78	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.7	49.15	49.26	49.15	48.78	48.78
SPP South - Energy Price - 1H2023	7505	7/19/2043	7/19/2043	48.78	48.78	48.78	48.78	48.78	48.78	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.15	49.26	49.88	49.07	48.78
SPP South - Energy Price - 1H2023	7506	7/20/2043	7/20/2043	48.37	47.94	47.65	47.65	47.65	47.94	50.48	50.48	50.48	50.48	50.48	50.48	50.48	50.48	50.48	50.48	50.48	52.29	53.6	53.82	55.32	53.03	53.65	52.84
SPP South - Energy Price - 1H2023	7507	7/21/2043	7/21/2043	49.45	49.45	49.45	49.12	49.45	49.04	50.83	50.83	50.83	50.83	50.83	50.83	50.83	50.83	50.83	50.83	50.83	50.83	55.66	52.7	50.83	53.38	51.59	47.97
SPP South - Energy Price - 1H2023	7508	7/22/2043	7/22/2043	47.65	47.65	47.55	47.59	47.65	47.15	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.19	50.23	50.19	50.19	46.61	46.61
SPP South - Energy Price - 1H2023	7509	7/23/2043	7/23/2043	45.69	47.32	47.32	47.32	47.32	47.32	49.31	49.31	49.31	49.31	49.31	50.39	49.31	50.7	52.66	51.65	49.31	52.52	52.99	53.44	53.54	54.03	51.53	47.32
SPP South - Energy Price - 1H2023	7510	7/24/2043	7/24/2043	46.92	46.92	46.88	46.92	46.92	46.84	48.88	49.19	50.56	54.34	54.34	54.34	51.07	49.99	50.88	53.73	51.49	54.34	61.85	54.39	54.34	54.34	50.31	49.11
SPP South - Energy Price - 1H2023	7511	7/25/2043	7/25/2043	47.26	46.98	46.88	46.92	47.19	46.84	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	50.07	49.55	49.55	47.72	46.1	47.05
SPP South - Energy Price - 1H2023	7512	7/26/2043	7/26/2043	46.87	46.27	45.24	45.24	45.98	45.24	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	45.58	50.01	49.1	48.15	50.01	46.1	46.49
SPP South - Energy Price - 1H2023	7513	7/27/2043	7/27/2043	46.69	45.08	45.66	46.01	46.49	46.67	48.72	48.72	48.72	48.72	48.72	48.72	50.01	48.72	48.72	48.72	49	50.01	59.5	57.86	53.56	51.13	51.64	45.41
SPP South - Energy Price - 1H2023	7514	7/28/2043	7/28/2043	45.41	45.41	45.41	45.41	45.41	45.41	49.05	49.05	49.05	49.05	49.05	49.05	50.2	50.38	50.17	49.96	50.02	52.47	55.19	52.56	52.71	52.58	47.06	46.71
SPP South - Energy Price - 1H2023	7515	7/29/2043	7/29/2043	45.86	45.86	45.86	45.86	45.86	45.86	49.47	49.47	49.47	49.47	49.47	49.47	49.47	50.6	50.6	49.47	49.65	50.34	52.5	53.03	52.91	49.47	47.48	46.15
SPP South - Energy Price - 1H2023	7516	7/30/2043	7/30/2043	46.33	46.33	46.33	46.33	46.33	46.33	51.41	49.92	49.92	49.92	49.92	51.33	56.67	56.75	56.75	56.75	56.75	56.75	56.75	56.75	56.75	56.75	46.63	46.56
SPP South - Energy Price - 1H2023	7517	7/31/2043	7/31/2043	46.4	46.4	46.22	46.4	46.4	46.4	49.82	49.82	49.82	49.82	49.82	49.82	49.82	50.43	50.98	50.43	50.43	50	50.43	51.1	50.43	50.43	46.22	46.22
SPP South - Energy Price - 1H2023	7518	8/1/2043	8/1/2043	51.94	51.94	51.94	51.94	51.94	51.94	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.5	51.26	51.26	51.26	51.94	51.94
SPP South - Energy Price - 1H2023	7519	8/2/2043	8/2/2043	51.94	51.94	51.94	51.94	51.94	51.94	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	51.26	52.99	53.62	53.92	51.26	51.94	51.94
SPP South - Energy Price - 1H2023	7520	8/3/2043	8/3/2043	50.59	50.59	50.59	50.59	50.59	50.59	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	51.53	52.7	53.12	54.41	55.35	53.12	53.12	54.06	54.47
SPP South - Energy Price - 1H2023	7521	8/4/2043	8/4/2043	54.06	54.06	54.06	54.06	54.06	54.06	54.66	54.66	54.66	54.66	54.66	54.66	54.66	54.66	54.66	55.92	55.72	56.7	58.01	56.7	56.9	56.7	55.42	55.17
SPP South - Energy Price - 1H2023	7522	8/5/2043	8/5/2043	55.17	55.17	55.17	55.17	55.17	55.17	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.66	55.17	55.17
SPP South - Energy Price - 1H2023	7523	8/6/2043	8/6/2043	55.65	55.65	55.65	55.65	55.65	55.65	56.09	56.09	56.09	56.09	56.09	56.09	56.09	56.09	56.09	56.09	56.09	56.09	57.14	56.09	56.09	56.09	55.65	55.65
SPP South - Energy Price - 1H2023	7524	8/7/2043	8/7/2043	55.34	55.34	55.34	55.34	55.34	55.34	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	55.81	56.66	55.81	55.81	55.34	55.34
SPP South - Energy Price - 1H2023	7525	8/8/2043	8/8/2043	55.34	55.34	55.34	55.34	55.34	55.34	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.62	55.34	55.34
SPP South - Energy Price - 1H2023	7526	8/9/2043	8/9/2043	55.34	55.34	55.34	55.34	55.34	55.34	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	54.61	55.1	55.93	56.04	54.62	55.34	55.34
SPP South - Energy Price - 1H2023	7527	8/10/2043	8/10/2043	55.85	55.85	55.85	55.85	55.85	55.85	56.27	56.27	56.27	56.27	56.27	56.27	56.27	56.27	57.57	56.37	57.57	57.98	59.09	57.57	58.65	56.27	55.85	55.85
SPP South - Energy Price - 1H2023	7528	8/11/2043	8/11/2043	54.75	54.75	54.75	54.75	54.75	54.75	55.28	55.28	55.28	55.28	55.28	58.57	58.42	58.82	58.82	58.82	58.01	58.62	58.82	58.82	58.82	58.82	55.28	54.75
SPP South - Energy Price - 1H2023	7529	8/12/2043	8/12/2043	47.11	47.11	47.11	47.11	47.11	47.11	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	48.41	53.67	55.09	48.92	48.41	47.11	47.11
SPP South - Energy Price - 1H2023	7530	8/13/2043	8/13/2043	42.14	42.14	42.14	42.14	42.14	42.23	43.94	43.94	43.94	43.94	43.94	43.94	43.94	43.94	43.94	43.94	44.3	46.25	48.85	50.5	49.17	47.23	42.96	42.88
SPP South - Energy Price - 1H2023	7531	8/14/2043	8/14/2043	41.49	41.49	41.49	41.49	41.49	41.49	43.36	43.36	43.36	43.36	43.36	43.36	43.36	43.36	43.36	44.48	44.48	44.48	49.91	49.82	44.48	44.48	43.15	41.49
SPP South - Energy Price - 1H2023	7532	8/15/2043	8/15/2043	41.49	41.49	41.49	41.49	41.49	41.75	42.28	40.95	41.72	41.18	42.39	48.93	45.97	50.01	49.53	49.53	49.33	49.68	49.53	49.72	44.55	42.91	42.24	41.49
SPP South - Energy Price - 1H2023	7533	8/16/2043	8/16/2043	41.49	41.49	41.49	41.49	41.49	41.49	40.95	40.95	40.95	40.95	40.95	40.95	40.95	40.95	40.95	40.95	40.95	40.95	50.59	51.87	51.73	49.38	48.35	48.35
SPP South - Energy Price - 1H2023	7534	8/17/2043	8/17/2043	51.36	51.36	51.36	51.36	51.36	51.36	52.23	52.23	52.23	52.23	52.23	52.23	52.23	52.23	52.23	52.23	52.76	52.23	55.4	55.97	56.21	54.71	55.01	51.94
SPP South - Energy Price - 1H2023	7535	8/18/2043	8/18/2043	55.01	55.01	55.01	55.01	55.01	55.01	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	59.47	59.65	55.52	55.52	55.56	55.49
SPP South - Energy Price - 1H2023	7536	8/19/2043	8/19/2043	56.64	56.64	56.64	56.64	56.64	56.64	56.98	56.98	56.98	56.98	56.98	56.98	56.98	56.98	56.98	56.98	56.98	56.98	63.88	65.59	60.68	56.98	56.64	56.64
SPP South - Energy Price - 1H2023	7537	8/20/2043	8/20/2043	56.36	56.91	56.15	56.15	56.5	56.91	56.54	56.54	56.54	56.54	56.54	56.54	56.54	57.34	56.54	59.08	67.74	68.31	73.72	73.72	70.36	69.29	67.42	61.89
SPP South - Energy Price - 1H2023	7538	8/21/2043	8/21/2043	61.89	61.89	61.89	61.89	61.89	61.89	57.92	55.13	55.13	55.13	55.13	55.13	56.17	57.02	68.39	68.66	68.66	68.66	71.75	70.35	68.66	68.66	60.25	57.96
SPP South - Energy Price - 1H2023	7539	8/22/2043	8/22/2043	54.9	54.59	54.59	54.59	54.59	54.62	53.87	53.87	53.87	53.87	53.87	53.87	53.87	55.63	60.02	66.66	72.46	74.57	74.93	72.46	72.46	72.46	57.96	56.74
SPP South - Energy Price - 1H2023	7540	8/23/2043	8/23/2043	54.59	54.59	54.59	54.59	54.59	54.59	53.87	53.87	53.87	53.87	53.87	53.87	53.87	53.87	53.87	53.87	53.87	56.79	58.56	58.56	57.74	56.28	55.11	55.03
SPP South - Energy Price - 1H2023	7541	8/24/2043	8/24/2043	54.32	54.32	54.32	54.32	54.32	54.32	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	54.89	55.09	58.07	58.25	56.92	55.09	56.89	56.89
SPP South - Energy Price - 1H2023	7542	8/25/2043	8/25/2043	56.89	56.89	56.89	56.89	56.89	56.89	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	64.15	60.48	57.2	57.2	57.07	57.07
SPP South - Energy Price - 1H2023	7543	8/26/2043	8/26/2043	57.07	57.07	57.07	57.07	57.07	57.07	57.37	57.37	57.37	57.37	57.37	57.37	57.37	59.98	71.34	74.88	74.88	74.88	74.88	74.88	74.88	71.33	65.27	57.7
SPP South - Energy Price - 1H2023	7544	8/27/2043	8/27/2043	58.05	57.78	57.78	57.78	57.78	58.05	58.75	58.01	58.01	58.01	58.01	58.01	58.01	58.01	59.65	59.57	60.57	61.91	60.57	66.78	60.57	60.57	58.54	58.47
SPP South - Energy Price - 1H2023	7545	8/28/2043	8/28/2043	57.59	58.21	58.54	58.53	58.54	58.54	62.36	62.15	62.1	62.66	62.63	63.57	60	57.65	58.22	62.66	62.66	63.15	63.27	62.66	62.66	61.92	57.38	57.38
SPP South - Energy Price - 1H2023	7546	8/29/2043	8/29/2043	57.38	57.38	57.38	57.38	57.38	57.38	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	63.67	61.56	60.96	56.63	57.38	57.38
SPP South - Energy Price - 1H2023	7547	8/30/2043	8/30/2043	57.38	57.38	57.38	57.38	57.38	57.38	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	56.63	61.32	60.95	60.96	58.32	57.38	57.38
SPP South - Energy Price - 1H2023	7548	8/31/2043	8/31/2043	47.31	47.63	47.63	46.84	47.63	47.63	47.88	47.88	47.88	47.88	47.88	47.88	47.88	47.88	47.88	47.88	47.88	50.93	56.24	57.64	56.85	54.47	56.8	56.09
SPP South - Energy Price - 1H2023	7549	9/1/2043	9/1/2043	39.42	39.85	40.19	40.03	39.85	40.25	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	36.79	38.85	39.18	36.79	39.8	39.61
SPP South - Energy Price - 1H2023	7550	9/2/2043	9/2/2043	38.73	39.16	39.39	39.39	39.39	39.39	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	36.58	38.6	38.6
SPP South - Energy Price - 1H2023	7551	9/3/2043	9/3/2043	38.56	38.99	39.33	39.22	39.33	39.33	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	39.07	39.07
SPP South - Energy Price - 1H2023	7552	9/4/2043	9/4/2043	38.64	39.07	39.03	39.07	39.07	39.09	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	38.15	38.15

SPP South - Energy Price - 1H2023	7553	9/5/2043	9/5/2043	38.15	38.15	38.15	38.15	38.15	38.15	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.96	55.44	55.48	38.15	38.15
SPP South - Energy Price - 1H2023	7554	9/6/2043	9/6/2043	38.15	38.15	38.15	38.15	38.15	38.15	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	55.37	56.64	57.27	55.96	55.37	38.15	38.15
SPP South - Energy Price - 1H2023	7555	9/7/2043	9/7/2043	38.15	38.15	38.15	38.15	38.15	38.15	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	36.21	38.15	38.15
SPP South - Energy Price - 1H2023	7556	9/8/2043	9/8/2043	39.24	39.24	39.24	39.24	39.24	39.24	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	37.12	39.24	39.24
SPP South - Energy Price - 1H2023	7557	9/9/2043	9/9/2043	39.72	39.72	39.72	39.72	39.72	39.72	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	37.53	39.72	39.72
SPP South - Energy Price - 1H2023	7558	9/10/2043	9/10/2043	40.04	39.65	39.99	39.99	40.04	40.04	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	36.97	39.05	39.05
SPP South - Energy Price - 1H2023	7559	9/11/2043	9/11/2043	38.02	38.02	38.02	38.02	38.02	38.02	36.1	36.1	36.1	36.1	36.1	33.21	36.1	33.21	33.21	36.1	36.1	36.1	36.1	36.1	36.1	36.1	38.02	38.02
SPP South - Energy Price - 1H2023	7560	9/12/2043	9/12/2043	38.02	38.02	38.02	38.02	38.02	38.02	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	38.02	38.02
SPP South - Energy Price - 1H2023	7561	9/13/2043	9/13/2043	38.02	38.02	38.02	38.02	38.02	38.02	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	55.18	38.02	38.02
SPP South - Energy Price - 1H2023	7562	9/14/2043	9/14/2043	37.62	37.62	37.62	37.62	37.62	37.62	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	35.76	37.62	37.62
SPP South - Energy Price - 1H2023	7563	9/15/2043	9/15/2043	37.15	37.15	37.15	37.15	37.15	37.15	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	35.36	37.15	37.15
SPP South - Energy Price - 1H2023	7564	9/16/2043	9/16/2043	37.2	37.2	37.2	37.2	37.2	37.2	35.4	35.4	35.4	35.4	35.4	35.4	32.57	32.57	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	37.2	37.2
SPP South - Energy Price - 1H2023	7565	9/17/2043	9/17/2043	37.91	37.91	37.91	37.91	37.91	37.91	36	36	36	33.12	36	36	36	36	36	36	36	36	37.6	36	36	36	37.91	37.91
SPP South - Energy Price - 1H2023	7566	9/18/2043	9/18/2043	37.06	37.06	37.06	37.06	37.06	37.06	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	35.28	37.06	37.06
SPP South - Energy Price - 1H2023	7567	9/19/2043	9/19/2043	37.06	37.06	37.06	37.06	37.05	37.05	53.78	25.39	8.47	13.72	9.01	9.91	13.72	13.72	15.73	17.42	25.39	53.78	53.78	53.78	53.78	53.78	37.06	37.06
SPP South - Energy Price - 1H2023	7568	9/20/2043	9/20/2043	37.06	37.05	37.06	37.05	37.05	37.05	53.78	12.12	8.47	7.85	9.01	9.91	12.12	13.72	15.73	52.97	53.78	53.78	53.78	53.78	53.78	53.78	37.05	37.05
SPP South - Energy Price - 1H2023	7569	9/21/2043	9/21/2043	31.82	31.82	31.82	31.82	31.82	31.82	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	30.86	31.82	31.82
SPP South - Energy Price - 1H2023	7570	9/22/2043	9/22/2043	34.92	34.92	34.92	34.92	34.92	34.92	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	35.13	35.47	35.63	35.76	35.63	35.63	35.63	33.52	34.92	34.92
SPP South - Energy Price - 1H2023	7571	9/23/2043	9/23/2043	34.85	34.85	34.85	34.85	34.85	34.85	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	34.85	34.85
SPP South - Energy Price - 1H2023	7572	9/24/2043	9/24/2043	36.91	36.91	36.91	36.91	36.91	36.91	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	35.16	36.91	36.91
SPP South - Energy Price - 1H2023	7573	9/25/2043	9/25/2043	34.7	34.7	34.7	34.7	34.7	34.7	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	34.7	34.7
SPP South - Energy Price - 1H2023	7574	9/26/2043	9/26/2043	34.7	34.7	34.7	34.7	34.7	34.7	50.36	50.36	13.72	13.72	13.72	9.91	12.12	13.72	15.73	17.42	18.06	50.36	50.36	50.36	50.36	50.36	34.7	34.7
SPP South - Energy Price - 1H2023	7575	9/27/2043	9/27/2043	34.7	34.7	34.7	34.7	34.7	34.7	50.36	10.35	0.31	0.08	0.01	0.27	0.31	0.34	0.31	1.93	15.91	50.36	50.36	50.36	50.36	50.36	34.7	34.7
SPP South - Energy Price - 1H2023	7576	9/28/2043	9/28/2043	32.44	32.44	32.44	32.44	32.44	32.44	31.38	28.75	26.54	26.45	26.45	26.45	26.45	26.54	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	32.44	32.44
SPP South - Energy Price - 1H2023	7577	9/29/2043	9/29/2043	36.96	36.96	36.96	36.96	36.96	36.96	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	36.96	36.96
SPP South - Energy Price - 1H2023	7578	9/30/2043	9/30/2043	37.13	37.13	37.13	37.13	37.13	37.13	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	37.13	37.13
SPP South - Energy Price - 1H2023	7579	10/1/2043	10/1/2043	22.82	22.82	22.82	22.82	22.82	22.82	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47	22.82	22.82
SPP South - Energy Price - 1H2023	7580	10/2/2043	10/2/2043	23.1	23.1	23.1	23.1	23.1	23.1	21.71	21.71	21.71	21.71	21.71	21.71	19.97	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	23.1	23.1
SPP South - Energy Price - 1H2023	7581	10/3/2043	10/3/2043	23.1	23.1	23.1	23.1	23.1	23.1	27.72	27.72	1.77	1.77	1.15	1.39	1.77	1.77	1.77	2.13	8.88	27.72	27.72	27.72	27.72	27.72	23.1	23.1
SPP South - Energy Price - 1H2023	7582	10/4/2043	10/4/2043	23.1	23.1	23.1	23.1	23.1	23.1	27.72	27.72	7.07	5.01	5.45	6.07	7.07	7.07	7.07	7.07	27.72	27.72	27.72	27.72	27.72	27.72	23.1	23.1
SPP South - Energy Price - 1H2023	7583	10/5/2043	10/5/2043	22.06	22.06	22.06	22.06	22.06	22.06	21.73	21.73	21.48	20.4	19.99	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	22.06	22.06
SPP South - Energy Price - 1H2023	7584	10/6/2043	10/6/2043	20.81	20.81	20.81	20.81	20.81	20.81	20.67	20.67	20.67	20.67	20.67	20.16	20.42	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.81	20.81
SPP South - Energy Price - 1H2023	7585	10/7/2043	10/7/2043	20.75	20.75	20.75	20.75	20.75	20.75	20.62	20.62	20.62	20.62	17.67	8.96	18.97	10.1	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.75	20.75
SPP South - Energy Price - 1H2023	7586	10/8/2043	10/8/2043	21.37	21.37	21.37	21.37	21.37	21.37	21.14	8.68	3.41	3.41	3.41	3.41	3.41	3.41	3.41	6.35	21.14	21.14	21.14	21.14	21.14	21.14	21.37	21.37
SPP South - Energy Price - 1H2023	7587	10/9/2043	10/9/2043	21.38	21.38	21.38	21.38	21.38	21.38	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.15	21.38	21.38
SPP South - Energy Price - 1H2023	7588	10/10/2043	10/10/2043	21.38	21.38	21.38	21.38	21.38	23.24	27.9	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	27.36	27.9	26.29	25.67	25.67	21.38	21.38
SPP South - Energy Price - 1H2023	7589	10/11/2043	10/11/2043	21.38	21.38	21.38	21.38	21.38	21.9	25.67	25.67	25.67	25.67	25.67	25.67	25.66	25.67	25.66	25.66	25.66	25.67	25.67	25.67	25.67	25.67	21.38	21.38
SPP South - Energy Price - 1H2023	7590	10/12/2043	10/12/2043	21.01	21.01	21.01	21.01	21.01	21.01	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	20.84	23.15	23.15
SPP South - Energy Price - 1H2023	7591	10/13/2043	10/13/2043	23.15	23.15	23.15	23.15	23.15	25.64	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.24	21.48	21.48
SPP South - Energy Price - 1H2023	7592	10/14/2043	10/14/2043	21.15	21.15	21.15	21.15	21.15	21.15	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	21.15	21.15
SPP South - Energy Price - 1H2023	7593	10/15/2043	10/15/2043	24.83	24.83	24.67	24.83	24.83	24.91	22.36	22.36	21.03	21.03	20.57	20.57	20.57	20.57	21	20.57	21.02	22.36	24.27	22.36	22.36	22.36	21.23	21.23
SPP South - Energy Price - 1H2023	7594	10/16/2043	10/16/2043	21.23	21.23	21.23	21.23	21.23	21.23	19.79	19.79	19.79	19.79	19.79	19.79	19.79	19.79	19.79	19.79	19.79	19.79	20.13	19.79	19.79	19.79	21.49	19.77
SPP South - Energy Price - 1H2023	7595	10/17/2043	10/17/2043	19.77	19.77	19.77	19.77	19.77	19.77	24.95	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	25.8	25.8	23.73	23.73	19.77	19.77
SPP South - Energy Price - 1H2023	7596	10/18/2043	10/18/2043	19.77	19.77	19.77	19.77	19.77	19.77	25.8	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	23.73	25.8	25.8	23.73	23.73	19.77	19.77
SPP South - Energy Price - 1H2023	7597	10/19/2043	10/19/2043	22.14	21.29	21.29	21.29	23.09	23.81	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	24.32	21.08	21.08	21.08	23.17	23.17
SPP South - Energy Price - 1H2023	7598	10/20/2043	10/20/2043	23.17	23.17	23.17	23.17	23.17	23.17	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.61	21.61
SPP South - Energy Price - 1H2023	7599	10/21/2043	10/21/2043	21.88	21.88	21.88	21.88	21.88	21.88	21.58	21.58	18.72	18.72	18.72	17.99	19.88	18.72	19.4	20.15	21.58	21.58	21.58	21.58	21.58	21.58	21.88	21.88
SPP South - Energy Price - 1H2023	7600	10/22/2043	10/22/2043	22.21	22.21	22.21	22.21	22.21	22.21	21.86	21.86	21.86	21.86	20.11	20.11	21.86	20.11	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	22.21	22.21
SPP South - Energy Price - 1H2023	7601	10/23/2043	10/23/2043	21.94	21.94	21.94	21.94	21.94	21.94	21.63	21.63	21.63	21.63	19.9	21.63	19.9	21.63	21.63	20.45	21.63	21.63	21.63	21.63	21.63	21.63	21.94	21.94
SPP South - Energy Price - 1H2023	7602	10/24/2043	10/24/2043	21.94	22	21.94	21.94	21.94	21.94	26.34	26.34	26.34	25.32	26.34	26.34	26.34	26.34	26.34	26.34	26.34	27.04	27.3	27.52	26.9	27.52	22.41	21.94
SPP South - Energy Price - 1H2023	7603	10/25/2043	10/25/2043	21.94	21.94	21.94	21.94	21.94	21.94	26.34	26.34	7.2	2.13	2.13	2.13	0.66	0.2	1.98	2.13	26.34	26.34	27.3	27.58	27.64	26.9	21.94	21.94
SPP South - Energy Price - 1H2023	7604	10/26/2043	10/26/2043	22.12	22.12	22.12	22.12	22.12	22.12	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	22.12	22.12
SPP South - Energy Price - 1H2023	7605	10/27/2043	10/27/2043	22.5	22.5	22.5	22.5	22.5	22.5	21.2	20.86	4.88	4.88	3.76	4.19	4.88	4.88	4.88	6.35	18.98	21.2	21.2	21.2	21.2	21.2	22.5	22.5
SPP South - Energy Price - 1H2023	7606	10/28/2043	10/28/2043	22.38	22.38	22.38	22.38	22.38	22.38	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	22.38	22.38
SPP South - Energy Price - 1H2023	7607	10/29/2043	10/29/2043	21.65	21.65	21.65	21.65	21.65	21.65	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	20.49	21.65	21.65
SPP South - Energy Price - 1H2023	7608	10/30/2043	10/30/2043	20.7	20.7	20.7	20.7	20.7	20.7	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	19.69	20.7	20.7
SPP South - Energy Price - 1H2023	7609	10/31/2043	10/31/2043	20.7	20.7	20.7	20.7	20.7	20.7	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	24.85	20.7	20.7
SPP South - Energy Price - 1H2023	7610	11/1/2043	11/1/2043	33.03	33.03	33.03	33.03	33.03	33.03	45.27	45.27	9.9	0	0	0	0	0	0	0	8.56	45.27	45.27	45.27	45.27	45.27	33.03	33.03
SPP South - Energy Price - 1H2023	7611	11/2/2043	11/2/2043	30.61	30.61	30.61	30.61	30.61	30.61	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	32.32	30.61	30.61
SPP South - Energy Price - 1H2023	7612	11/3/2043	11/3/2043	31.08	31.08	31.08	31.08	31.08	31.08	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	32.75	31.08	31.08
SPP South - Energy Price - 1H2023	7613	11/4/2043	11/4/2043	29.52	29.52	29.52	29.52	29.52	29.52	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	31.34	29.52	29.52
SPP South - Energy Price - 1H2023	7614	11/5/2043	11/5/2043	30.4	30.4	30.4	30.4	30.4	30.4	32.14	32.14	32.14	32.14	32.14	29.56	29.56	29.56	29.56	32.14	32.14	32.14	32.14	32.14	32.14	32.14	30.81	30.81
SPP South - Energy Price - 1H2023	7615	11/6/2043	11/6/2043	30.81	30.81	30.81	30.81	30.81	30.81	32.5	32.5	32.5	14.85	14.85	14.85	14.85	14.85	14.85	14.85	32.5	32.5	32.5	32.5	32.5	32.5	30.81	30.81
SPP South - Energy Price - 1H2023	7616	11/7/2043	11/7/2043	30.81	30.81	30.81	30.81	30.81	30.81	42.22	42.22	9.9	9.19	8.11	7.31	9.19	9.19	9.19	42.21	42.22	42.22	42.22	42.22	42.22	42.22	30.81	30.81
SPP South - Energy Price - 1H2023	7617	11/8/2043	11/8/2043	30.81	30.81	30.81	30.81	30.81	30.81	42.22	42.22	19.79	7.79	7.79	7.31	7.31	7.79	7.79	7.79	42.22	42.22	42.22	42.22	42.22	42.22	30.81	30.81
SPP South - Energy Price - 1H2023	7618	11/9/2043	11/9/2043	32.24	32.24	32.24	32.24	32.24	32.24	37.37	28.26	6.34	2.74	2.74	1.18	0	2.74	2.74	4.98	5.48	37.37	37.37	37.37	37.37	37.37	32.24	32.24
SPP South - Energy Price - 1H2023	7619	11/10/2043	11/10/2043	35.62	35.62	35.62	35.62	35.62	35.62	40.45	40.45	40.45	38.73	37.21	40.45	40.45	40.45	37.21	40.45	40.45	40.45	40.45	40.45	40.45	40.45	36.83	35.62
SPP South - Energy Price - 1H2023	7620	11/11/2043	11/11/2043	38.15	38.35	38.15	38.15	38.7	38.72	41.48	41.48	41.48	41.48	41.48	41.48	41.48	41.48	41.48	41.48	41.48	43.23	44.05	41.48	41.48	41.48	41.5	41.94
SPP South - Energy Price - 1H2023	7621	11/12/2043	11/12/2043	41.42	41.42	41.42	41.42	41.42	41.42	41.15	41.15	41.15	39.47	36.31	36.31	24.26	36.31	36.31	36.31	41.15	41.15	41.15	41.15	41.15	41.15	36.39	36.39
SPP South - Energy Price - 1H2023	7622	11/13/2043	11/13/2043	34.81	35.02	34.62	34.78	35.37	35.39	38.44	38.44	38.44	38.44	35.36	35.36	35.36	35.36	35.36	38.44	38.44	38.44	40.17	38.44	38.44	38.44	37.38	37.53
SPP South - Energy Price - 1H2023	7623	11/14/2043	11/14/2043	34.81	35.02	34.62	34.79	35.37	35.39	51.57	45.78	45.78	45.67	44.72	43.28	43.28	45.78	43.28	43.28	45.78	45.78	45.78	45.78	45.78	45.78	33.41	33.41
SPP South - Energy Price - 1H2023	7624	11/15/2043	11/15/2043	33.41	33.41	33.41	33.41	33.41	33.41	45.78	45.78	43.28	45.78	45.78	45.78	45.78	45.78	43.28	45.78	45.78	47.04	45.78	45.78	45.78	45.78	33.41	34.33
SPP South - Energy Price - 1H2023	7625	11/16/2043	11/16/2043	31.58	31.58	31.58	31.58	32.21	32.23	35.56	35.56	30.38	30.38	30.38	30.38	30.38	35.56	35.56	35.56	35.56	35.56	35.56	35.56	35.56	35.56	31.46	33.87
SPP South - Energy Price - 1H2023	7626	11/17/2043	11/17/2043	35.01	37.32	37.32	37.32	37.71	39.37	39.26	39.3	38.67	38.62	38.62	38.61	38.61	38.61	38.61	38.62	38.62	39.28	40.34	39.28	39.28	39.28	40.5	40.5
SPP South - Energy Price - 1H2023	7627	11/18/2043	11/18/2043	40.5	40.43	40.5	40.5	40.5	40.5	40.63	43.04	39.59	39.59	39.59	39.59	39.59	39.59	39.59	39.59	39.59	43.88	43.93	43.88	44.28	43.88	46.24	39.87
SPP South - Energy Price - 1H2023	7628	11/19/2043	11/19/2043	39.78	39.78	39.38	39.55	40.05	40.15	40.1	40.1	37.9	9.68	5.19	5.09	4.68	5.03	5.09	5.09	16.67	40.1	40.1	40.1	40.1	40.1	36.44	37.77
SPP South - Energy Price - 1H2023	7629	11/20/2043	11/20/2043	37.77	37.77	37.77	37.77	38.35	38.37	38.62	39.2	38.62	38.62	38.62	36.97	36.97	35.53	31.82	35.53	38.62	38.62	38.62	38.62	38.62	38.62	33.61	34.57
SPP South - Energy Price - 1H2023	7630	11/21/2043	11/21/2043	33.85	33.61	33.61	34.99	35.57	35.59	50.07	48.32	46.06	46.06	46.06	46.06	46.06	46.06	46.06	46.06	46.06	50.19	52.01	50.19	50.19	50.41	36.63	36.63
SPP South - Energy Price - 1H2023	7631	11/22/2043	11/22/2043	36.3	36.3	34.82	34.99	33.61	33.61	46.06	48.32	48.82	49.58	46.06	46.06	46.06	7.86	7.95	7.79	46.06	50.07	50.07	46.06	46.06	46.06	33.61	34.28
SPP South - Energy Price - 1H2023	7632	11/23/2043	11/23/2043	38.29	38.29	38.29	38.29	38.29	38.29	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	39.48	38.29	38.29
SPP South - Energy Price - 1H2023	7633	11/24/2043	11/24/2043	37.55	37.55	37.55	37.55	37.55	37.55	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	38.82	37.55	37.55
SPP South - Energy Price - 1H2023	7634	11/25/2043	11/25/2043	37	37	37	37	37	37	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	37	37
SPP South - Energy Price - 1H2023	7635	11/26/2043	11/26/2043	37	37	37	37	37	37	38.32	38.32	38.32	38.32	38.32	35.57	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	38.32	37	37

SPP South - Energy Price - 1H2023	7636	11/27/2043	11/27/2043	34.29	34.29	34.29	34.29	34.29	34.29	35.88	35.88	32.67	29.93	29.43	29.43	29.43	5.13	5.4	27.09	35.72	35.88	35.88	35.88	35.88	35.88	34.29	34.29
SPP South - Energy Price - 1H2023	7637	11/28/2043	11/28/2043	34.29	34.29	34.29	34.29	34.29	34.29	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	51.08	47.3	46.99	46.99	34.29	34.29
SPP South - Energy Price - 1H2023	7638	11/29/2043	11/29/2043	34.29	34.29	34.29	34.29	34.29	34.29	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.99	46.19	46.99	46.99	46.99	46.99	46.99	46.99	34.29	34.29
SPP South - Energy Price - 1H2023	7639	11/30/2043	11/30/2043	33.71	33.71	33.71	33.71	33.71	33.71	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.71	33.71
SPP South - Energy Price - 1H2023	7640	12/1/2043	12/1/2043	41.07	41.07	41.07	41.07	41.07	41.07	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	42.61	41.07	41.69
SPP South - Energy Price - 1H2023	7641	12/2/2043	12/2/2043	43.53	43.53	43.53	43.53	43.53	43.53	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	44.86	43.53	43.53
SPP South - Energy Price - 1H2023	7642	12/3/2043	12/3/2043	45.38	45.38	45.38	45.38	45.38	45.38	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	46.55	45.38	45.38
SPP South - Energy Price - 1H2023	7643	12/4/2043	12/4/2043	49.66	49.66	49.66	49.66	49.66	49.66	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	50.45	49.66	49.66
SPP South - Energy Price - 1H2023	7644	12/5/2043	12/5/2043	49.66	49.66	49.66	49.66	49.66	49.66	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	49.66	49.66
SPP South - Energy Price - 1H2023	7645	12/6/2043	12/6/2043	49.66	49.66	49.66	49.66	49.66	49.66	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	56.19	49.65	49.65
SPP South - Energy Price - 1H2023	7646	12/7/2043	12/7/2043	53.68	53.68	53.68	53.68	53.68	53.68	54.13	54.13	12.48	9.38	12.48	7.95	12.48	12.48	12.48	51.23	54.14	54.14	54.14	54.14	54.14	54.14	53.69	53.69
SPP South - Energy Price - 1H2023	7647	12/8/2043	12/8/2043	54.42	54.42	54.42	54.42	54.42	54.42	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.81	54.42	54.42
SPP South - Energy Price - 1H2023	7648	12/9/2043	12/9/2043	58.28	58.28	58.28	58.28	58.28	58.28	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.33	58.28	58.28
SPP South - Energy Price - 1H2023	7649	12/10/2043	12/10/2043	55.87	55.87	55.87	55.87	55.87	55.87	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	56.13	55.87	55.87
SPP South - Energy Price - 1H2023	7650	12/11/2043	12/11/2043	53.16	53.16	53.16	53.16	53.16	53.16	53.65	53.65	53.65	53.65	49.36	49.36	49.36	49.36	53.65	53.65	53.65	53.65	53.65	53.65	53.65	53.65	53.16	53.16
SPP South - Energy Price - 1H2023	7651	12/12/2043	12/12/2043	53.16	53.16	53.16	53.16	53.16	53.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	53.16	53.16
SPP South - Energy Price - 1H2023	7652	12/13/2043	12/13/2043	53.16	53.16	53.16	53.16	53.16	53.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	60.16	53.16	53.16
SPP South - Energy Price - 1H2023	7653	12/14/2043	12/14/2043	52.77	52.77	52.77	52.77	52.77	52.77	53.3	53.3	53.3	53.3	53.3	52.96	53.19	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	52.77	52.77
SPP South - Energy Price - 1H2023	7654	12/15/2043	12/15/2043	51.65	51.65	51.65	51.65	51.65	51.65	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	52.27	51.65	51.65
SPP South - Energy Price - 1H2023	7655	12/16/2043	12/16/2043	50.7	50.7	50.7	50.7	50.7	50.7	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	51.41	50.7	50.7
SPP South - Energy Price - 1H2023	7656	12/17/2043	12/17/2043	48.09	48.09	48.09	48.09	48.09	48.09	49.02	49.02	49.02	49.02	48.19	45.1	49.02	48.55	49.02	49.02	49.02	49.02	49.02	49.02	49.02	49.02	48.09	48.09
SPP South - Energy Price - 1H2023	7657	12/18/2043	12/18/2043	45.15	45.15	45.15	45.15	45.15	45.15	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	46.34	45.15	45.15
SPP South - Energy Price - 1H2023	7658	12/19/2043	12/19/2043	45.15	45.15	45.15	45.15	45.15	45.15	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	45.15	45.15
SPP South - Energy Price - 1H2023	7659	12/20/2043	12/20/2043	45.15	45.15	45.15	45.15	45.15	45.15	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	51.09	45.15	45.15
SPP South - Energy Price - 1H2023	7660	12/21/2043	12/21/2043	45.6	45.6	45.6	45.6	45.6	45.6	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	46.75	45.6	45.6
SPP South - Energy Price - 1H2023	7661	12/22/2043	12/22/2043	46.3	46.3	46.3	46.3	46.3	46.3	47.39	47.39	45.14	45.14	41.53	41.53	7.58	7.31	41.53	42.69	47.39	47.39	47.39	47.39	47.39	47.39	46.3	46.3
SPP South - Energy Price - 1H2023	7662	12/23/2043	12/23/2043	44.04	44.04	44.04	44.04	44.04	44.04	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	45.33	44.04	44.04
SPP South - Energy Price - 1H2023	7663	12/24/2043	12/24/2043	45.95	45.95	45.95	45.95	45.95	45.95	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	45.95	45.95
SPP South - Energy Price - 1H2023	7664	12/25/2043	12/25/2043	45.95	45.95	45.95	45.95	45.95	45.95	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	47.07	45.95	45.95
SPP South - Energy Price - 1H2023	7665	12/26/2043	12/26/2043	45.95	45.95	45.95	45.95	45.95	45.95	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	45.95	45.95
SPP South - Energy Price - 1H2023	7666	12/27/2043	12/27/2043	45.95	45.95	45.95	45.95	45.95	45.95	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	45.95	45.95
SPP South - Energy Price - 1H2023	7667	12/28/2043	12/28/2043	49.21	49.21	49.21	49.21	49.21	49.21	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	50.05	49.21	49.21
SPP South - Energy Price - 1H2023	7668	12/29/2043	12/29/2043	48.98	48.98	48.98	48.98	48.98	48.98	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	49.84	48.98	48.98
SPP South - Energy Price - 1H2023	7669	12/30/2043	12/30/2043	41.98	41.98	41.98	41.98	41.98	41.98	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	43.44	41.98	41.98
SPP South - Energy Price - 1H2023	7670	12/31/2043	12/31/2043	52.41	52.41	52.41	52.41	52.41	52.41	52.97	52.97	52.97	49.23	52.97	52.97	48.73	52.97	52.97	52.97	52.97	52.97	52.97	52.97	52.97	52.97	52.41	52.41

SPS IRP Modeling Request

SPS respectively asks stakeholders submit their modeling scenario requests ahead of the meeting on July 6, 2023, preferably by June 30th. This will allow time for discussion and development of any inputs and assumptions necessary.

* Required

1. Resource Adequacy Requirements *

- ◯ Existing PRM (15%)
- ◯ Increased PRM (18%/20%)

2. Level 3 Options *

- ◯ Existing Technology Only - Wind, Solar, Battery (4hr, 6hr, 8hr)
- ◯ Long Duration Storage (100 hr)
- ◯ Hydrogen Conversion

3. Load Selection *

- ◯ Financial Load (50%)
- ◯ Planning Load (85%)
- ◯ Electrification & Emerging Technologies Load

4. Gas & Market Price Forecast *

- ◯ Base
- ◯ Low
- ◯ High

5. Transmission Network Upgrade *

- ◯ Base Upgrade Costs ($400/kW)
- ◯ High Upgrade Costs ($600/kW)

6. Stakeholder Requested Change - Please be as quantitative and specific as possible. *

7. Please provide your name and contact information. *

MODELING WORKING GROUP REPORT

June 13-14, 2023

SPS IRP Stakeholder Workshop

Presentation summary

#1 - System Resources

- Big 5 commercially available technologies
  - o CC,CT
  - o Wind, Solar, BESS
- Long duration energy storage
  - o Xcel has 10 MW/100MWhr pilot with Form Energy
- Future CTG, CC – hydrogen, CCS capable
- Types of hydrogen
- Small modular reactors
- Linear turbine generators

#2 - Natural gas and market forecast methods

#3 – Future demand projections

Questions/Topics raised for discussion in Modeling Working Group

1. Modeling of paired solar and storage
2. Further explain modeling of investment tax credit vs. production tax credit
3. Capacity accreditation of hybrid sources – SPP "sum of the parts" method
4. Modeling of long duration energy storage (LDES) discharge
5. Cost assumptions for LDES
6. Timeline for data from Xcel pilots with LDES
7. Water usage for small modular nuclear reactors?
8. Benefits of linear generators?
9. Availability of geothermal, biomass, and hydro in SPS territory
10. Water availability for electrolysis to create hydrogen
11. Availability of water from oil and gas extraction for power generation
12. Possibility of converting coal to nuclear
13. Rate of cost decrease to recycle water from oil and gas extraction
14. Modeling of full supply chains for different resource types – renewable, hydrogen
15. Challenge of modeling uncertainty of future hydrogen supply
16. Commercial attractiveness vs. technical feasibility of hydrogen supply
17. Possibilities to model adjustments to EE, DR
18. Do loads/customers ask for green fuels?
    a. SPS is proposing renewable connect program
19. Uncertainty in oil and gas industry load forecasts

Feedback topics

1. Developing group consensus on resource characteristics for existing technologies
2. Developing group consensus on emerging technologies to model
3. Confirmation of NG forecast methods
    a. SPS provides Hi, Lo, and Base pricing
    b. Group confirms method/assumptions
4. Confirmation of SPP market pricing
    a. SPS provides pricing information
    b. Group confirms methods/assumptions
5. Deeper dive on components of demand forecasts and alternative scenario(s) with demand-side resources - Demand-side resource modeling subgroup formed to address this

Workplan

Post-workshop homework

- SPS provides Natural Gas (NG) and SPP market price information
- SPS sends scenario request form to stakeholders
    - Requests should be submitted as soon as feasible

June 30

- Sub-group discussion on demand-side resource modeling and developing scenario(s)
- Stakeholder scenario modeling requests are due
- Stakeholder requests to model emerging technologies are due
- Group feedback to SPS on NG and market pricing methods
- Group feedback to SPS on assumptions for existing commercial generation technologies
    - CT, CC
    - Wind, Solar, and BESS

July 6 – Stakeholder meeting scheduled

- SPS presents results from base model runs
- Review and discussion of scenario requests
- Further discussion on modeling assumptions, as needed

August 1-2 - Stakeholder meeting scheduled

- SPS presents modeling results from requested runs

Statement of Need – SPS IRP STAKEHOLDER Input

June 13, 2023

Bulleted elements from working group brainstorming session.

[Statement of Need ELEMENTS June 13.docx - Google Docs]

SUMMARY

- SPS/Xcel Energy has capacity need of ___MWs by _____, under:
  - Description of level 1-3 modeling process, with details regarding the following:
    - Level 1 - Base case
    - Level 2 - Scenario X, modeled by increased Planning Reserve Margin
    - Level 3 (e.g. higher load)
- Based on generic pricing, Recommended/Preferred Portfolio has potential for:
  - ___ MW new clean energy
  - ___ MW from dispatchable (resource that can be called upon at anytime that is needed)
  - ___ MW storage
  - Etc.
- Ultimate portfolio depends on bids submitted/received
- Rule/state law compliance
  - “technical characteristics of proposed new resources”
- Timeline considerations
  - 2028-2030 need identified
  - it takes time to get new large capacity resources on line. Near term resource needs are being met by 2021 action plan
  - timeline for transmission interconnection to SPP is a consideration (FERC jurisdiction), recognizing that certain resources may be interconnected more quickly than others
  - interconnection of distributed resources to the SPS system (NM PRC jurisdiction) is also a consideration
  - note that it takes less time to get smaller resources on line

RELIABILITY

- Timeframe to come on line
- PRM requirements are expected to increase in the future
- More Infrastructure - will need investment in distribution and transmission assets to support new generation and meet resource needs. Note that hosting capacity of existing circuits could be a consideration for distributed resources.
- Location considerations -
  - generation closer to the load makes the resource more valuable.
  - Larger facilities could encounter land use conflicts or other local government permitting challenges.

  - RFP results will also consider location
- Address transmission infrastructure needed to integrate more renewables
- Should be planning for increased resource adequacy requirements
- System analysis for inadequate load supply (blackout/brownout) and designation of critical infrastructure?

MORE GENERATION

- Make individual solar affordable (as a way to decrease load)
- No regret (new resources & pathway). ATHENA - please elaborate
- Most economical and reliable portfolio to meet SPS's capacity needs
- Lifecycle environmental cost considerations, including decomissioning cost, (SEEK CLARIFICATION from ATHENA, and Mr. Barber)
- Incorporate evolving technologies
  - batteries
  - carbon free or low emissions, dispatchable technologies
  - technologies that may have previously been considered non dispatchable
- Maximize investment opportunities (how to measure the benefits of these investments is challenging)
  - can the investment facilitate economic development in the state?
  - to meet needs over the long term
  - support a diversity of businesses that support NM's economy
- Cost effective including fuel

ENVIRONMENTAL

- Climate Crisis
- Carbon-free ASAP

- In recognition of climate change concerns, make steady progress toward meeting requirements of renewable energy act

  - consider modeling of accelerated RPS goal achievements (prior to 2045)

TRANSITION – HUMAN IMPACT

- Affected workforce support
- Reinvestment in impacted communities
- Involve individuals – both homeowners and renters (community solar?)

- Consider community reinvestment, workforce transitions, training support

LOAD GROWTH

- Electric supply/infrastructure growth rate to include industrial electrification projects in addition to projected business growth
- Changing load (increased electrification)
  - Environmental regulations driving combustion equipment to electric
- Evaluate probability of new load becoming a reality
  - High side/low side and the potential lag in grid buildout to meet demand

- Demand Response - increased role of DR….specifics TBD (AUSTIN - add)
- Partial Requirement Tariff (standby tariff), Case 22-00285-UT

OTHER RATEMAKING PROPOSALS

- Real-time day ahead pricing tariff
- Interruptible load tariff
- Future possible regulatory scenarios

Gridworks-provided Chat Log from Meeting

13:12:42 From iPhone : Agata Malek, NMPRC
13:13:05 From Steve Smith : Steve Smith, Devon Energy
13:13:11 From Conference Room : Replying to "Agata Malek, NMPRC"

Thank You Agata
13:13:13 From Michael McMillin : Michael McMillin, Occidental Permian Limited, excited to have a voice in the process
13:13:30 From Sonja : Sonja Jenko, Xcel Energy
13:13:33 From Tim Hauck : Tim Hauck, Devon Energy
13:13:36 From Austin Jensen : Austin Jensen, New Mexico Large Customer Group
13:13:39 From EDCLC : Madyson Zamora, EDC of Lea County
13:13:43 From Chris Kelly : Chris Kelly, NGL Water Solutions, excited to see the big picture plan.
13:13:45 From Jonathan Smith : Jonathan Smith, Crestwood Midstream
13:13:51 From Bailey (they/them) : Bailey Nickoloff, New Mexico Large Customer Group
13:13:53 From Chelsea Canada, NMCC : Chelsea Canada, New Mexico Chamber of Commerce
13:13:55 From Keven Gedko : Keven Gedko, New Mexico Office of the Attorney General. I'm excited for the openness and good will being displayed in the new process.
13:13:59 From John Goodenough : John Goodenough, Xcel. Excited to work with stakeholders through the IRP process.
13:14:03 From Michael Kenney, SWEEP : Michael Kenney, Southwest Energy Efficiency Project. I am excited to work with all of you to unlock as much energy efficiency and demand response as possible in the SPS IRP.
13:14:19 From Chris Leger (Interwest) : Chris Leger, Interwest Energy Alliance.
13:14:20 From EDCLC : Excited to listen to stakeholders opinions.
13:14:36 From Marc Tupler, NM PRC : Marc Tupler, NM PRC, Santa Fe, Excited to learn about the components of the 20-year crystal ball!
13:15:21 From Edison Jimenez : Edison Jimenez, NM-PRC. Excited to know all about this 20 years plan and IRP process itself.
13:19:58 From John Goodenough : Ben is a little hard to hear on Zoom
13:19:59 From Bailey Nickoloff : I don't know about others, but it's difficult to hear the presenter
13:20:02 From Thomas Singer WELC (he/him) : Very difficult to hear
13:20:21 From Thomas Singer WELC (he/him) : lots of distortion
13:20:30 From iPhone : Also having difficulty over zoom
13:20:44 From Steve Smith : Difficult to hear the audio
13:20:54 From Chelsea Canada, NMCC : Cant hear
13:21:01 From John Goodenough : where Zoe was standing seemed to have better audio
13:21:18 From Conference Room : any better?
13:21:27 From John Goodenough : no
13:21:28 From Edison Jimenez : No audio
13:21:29 From Bailey Nickoloff : No
13:22:13 From Conference Room : improvement?
13:22:16 From Naomi Velasquez, PRC : No, it sounds like the speaker is under water.
13:22:16 From Edison Jimenez : no
13:22:30 From John Goodenough : still distorted
13:23:37 From Vincent DiCosimo : very distorted

13:24:36 From iPhone : Distorted unfortunately
13:25:00 From Chelsea Canada, NMCC : It is better but can barely make out what is being said
13:26:22 From Bailey Nickoloff : I can hear now
13:26:29 From Conference Room : Reacted to "I can hear now" with
13:26:32 From John Goodenough : much better
13:26:32 From Chris Kelly : Much better
13:26:33 From Deborah Shields - Gridworks : Is that better?
13:26:38 From iPhone : Replying to "It is better but can…"
The sound quality is a bit better now. Thank you.
13:26:41 From Edison Jimenez : yes
13:26:45 From Chris Leger (Interwest) : Much better now.
13:27:07 From Conference Room : Thank you, sorry for the technical difficulties.
13:27:44 From Chelsea Canada, NMCC : Much better!
13:28:00 From Chelsea Canada, NMCC : Reacted to "Thank you, sorry for..." with
13:34:33 From Deborah Shields - Gridworks To 234841(privately) : Hi Deborah from Gridworks here - may I ask your name and organization so I can send you meeting notes?
13:34:50 From Deborah Shields - Gridworks To iPhone(privately) : Hi Deborah from Gridworks here - may I ask your name and organization so I can send you meeting notes?
13:43:31 From Michael Kenney, SWEEP : Will demand response be a selectable resource in the existing technology model?
13:46:57 From Marc Tupler, NM PRC : What are the pros and cons of the current Enncompass modeling software? and maybe a confidences level in its capabilities?
13:51:26 From Deborah Shields - Gridworks To lewisc(privately) : Hi Deborah from Gridworks here - may I ask your name and organization so I can send you meeting notes?
13:53:15 From iPhone To Deborah Shields - Gridworks(privately) : Hi Deborah, this is Agata Malek from NM PRC
13:54:19 From Thomas Singer WELC (he/him) : logical approach
13:56:55 From Deborah Shields - Gridworks To iPhone(privately) : Thank you!
13:58:32 From Michael McMillin : RE: Mr. Elsey's Modeling Hierarchy slide, why is hydrogen conversion called out in the model, but other technologies like carbon capture on gas turbines and/or nuclear are not included?
14:04:15 From Athena Christodoulou : Or, for that matter, thermal energy storage or pumped hydro.
14:48:05 From Michael McMillin : i'm having a really hard time hearing Mr. Elsey
14:48:08 From Thomas Singer WELC (he/him) : super hard to hear out here on zoom
14:48:16 From Steve Smith : Same here
14:48:23 From Athena Christodoulou : Yes, hard to understand
14:48:56 From Steve Smith : We can hear the questions but not the answers
14:49:41 From Keven Gedko : It would be worth restating these last two answers, with better audio. These are interesting and central questions. I would love to hear and understand the answers.

14:51:24 From Athena Christodoulou : Reacted to "It would be worth re..." with 👍
14:53:46 From Thomas Singer WELC (he/him) : What are your thoughts going into the modelling about the implications of considering electrification and emerging technologies (hydrogen, CCS) for the action plan and the mid-term planning horizon? Will they affect near-term decision-making, such as content in the next RFP? Thomas Singer, Western Environmental Law Center
14:55:28 From Bailey Nickoloff : It sounds like everyone is underwater again.
14:55:38 From Chelsea Canada, NMCC : Reacted to "It sounds like every..." with 👍
14:55:55 From Athena Christodoulou : Please get closer to microphone
14:56:22 From Marc Tupler, NM PRC : Audio is again garbled...
14:57:19 From Marc Tupler, NM PRC : Reacted to "It would be worth re..." with 👍
14:58:02 From Naomi Velasquez, PRC : I agree Marc, its hard to understand.
15:00:50 From Deborah Shields - Gridworks : Apoligies - working to fix the sound
15:05:34 From Sonja : Michael Kenny, I believe the gist of Ben's response to the demand response questions is that any existing demand response programs are included as a reduction of demand load. Future Demand Response programs can be included in the modeling but Xcel's team would like feedback from the modeling working group to define those programs (how large, how often can they be called upon, etc.).
15:05:57 From Michael Kenney, SWEEP : Reacted to "Michael Kenny, I bel..." with 👍
15:05:59 From EDCLC : better
15:06:01 From Sonja : Better!
15:06:05 From Keven Gedko : great right now
15:06:06 From Thomas Singer WELC (he/him) : super bueno
15:15:04 From Athena Christodoulou : What about reaching national climate policy goal of 100%carbon free by 2035?
15:16:14 From JOSH SMITH (Sierra Club) : Question about sensitivity analysis: Is it possible to run a sensitivity analysis for high and low environmental compliance costs under good neighbor plan, 111(d) regulations, etc?

09:00:33 From Athena Christodoulou to Everyone:
Is there any sound?
09:00:59 From K-Bob Stanley to Everyone:
No audio on the Zoom call
09:08:08 From Chris Leger (Interwest) to Everyone:
What is the basis for prices for modeled resources, and is there a differentiation for owned vs. PPA resources?
09:09:41 From Chris Leger (Interwest) to Everyone:
Just to confirm, SPP places a 100% capacity value for thermal resources? Or is this an SPS decision?
09:32:42 From Deborah Shields - Gridworks to 234841(Direct Message):
Hi - this is Deborah from Gridworks - may I have your name and organization so I can send you meeting updates?
09:33:35 From Deborah Shields - Gridworks to K-Bob Stanley, Targa(Direct Message):
Hi - this is Deborah from Gridworks - may I have your name, email and organization so I can send you meeting updates?
09:34:50 From K-Bob Stanley, Targa to Deborah Shields - Gridworks(Direct Message):
Kerry Stanley
KStanley@TargaResources.com
Targa Resources
I&E Engineering Director
09:35:50 From Deborah Shields - Gridworks to K-Bob Stanley, Targa(Direct Message):
Thank you!
09:36:43 From K-Bob Stanley, Targa to Deborah Shields - Gridworks(Direct Message):
Sorry I couldn't make yesterday's meeting. Will the wrap up include what came out of the working groups?
09:50:36 From Deborah Shields - Gridworks to K-Bob Stanley, Targa(Direct Message):
Yes, we will summarize later today and post a meeting summary on the Gridworks website and email
09:57:34 From K-Bob Stanley, Targa to Deborah Shields - Gridworks(Direct Message):
Thank you!
10:48:10 From Deborah Shields - Gridworks to Everyone:
https://gridworks.org/wp-content/uploads/2023/06/Statement-of-Need-ELEMENTS-June-13.docx.pdf
10:50:03 From Deborah Shields - Gridworks to Everyone:
Please select the break out room you would like to be in
10:54:33 From Bamadou Ouattara to Deborah Shields - Gridworks(Direct Message):
hello Deborah,
10:54:49 From Bamadou Ouattara to Deborah Shields - Gridworks(Direct Message):
I am having trouble entering a breakout room
11:00:02 From Shirin Cupples to Deborah Shields - Gridworks(Direct Message):
Deborah, how can I change rooms? I only have invitation for statement of needs working group now
14:06:04 From Deborah Shields - Gridworks to Everyone:

We will be back at 2:15pm for report outs,next steps and meeting feedback and closing remarks
14:15:02 From Deborah Shields - Gridworks to Everyone:
bit.ly/SPS-IRP-Feedback
14:51:39 From Bailey Nickoloff to Everyone:
Thank you!
14:51:48 From AMalek to Everyone:
Thank you!
14:52:15 From Edison Jimenez to Everyone:
Thank you!

Link to Video Recordings

video1233392156 - YouTube

video1785138280 - YouTube

June 13, 2023 Read Ahead Materials

On Following Pages

SOUTHWESTERN PUBLIC SERVICE COMPANY
2023 NEW MEXICO INTEGRATED RESOURCE PLAN

1st In-Person Facilitated Stakeholder Meeting

June 13 – 14, 2023 – Roswell, New Mexico

SYSTEM OVERVIEW RECAP

Current Summer SPS Loads and Resources Table - Planning Load

LINE NO.	DESCRIPTION	2024	2025	2026	2027	2028	2029	2030
1	TOTAL ACCREDITED CAPACITY (MW)	5,418	5,411	5,158	4,918	4,472	3,178	3,170
2	FIRM LOAD OBLIGATION	4,332	4,580	4,680	4,735	4,881	4,898	5,032
3	TOTAL PLANNING RESERVE MARGIN	650	687	702	710	732	735	755
4	CAPACITY NEED	4,982	5,267	5,383	5,446	5,613	5,633	5,787
5	RESOURCE POSITION (MW): LONG/(SHORT)	436	144	(224)	(527)	(1,141)	(2,455)	(2,618)

- Resource Position is an important factor for determining the need for new generating resources during the planning period - It is ***not*** the only consideration

Existing Generation

Updated slide to include 2024

2024 Capacity Overview by Resource Type

Resource Type	Maximum Capability (MW)	Accredited Capacity (MW)
Coal	1,067	1,067
Coal to Gas	1,018	1,018
Gas – Steam	1,427	1,427
Gas – CT	822	822
Gas – CC	558	558
Wind	2,451	447
Solar	190	78*
Total	**7,533**	**5,418**

*NM Approved portion only

- The maximum capability of a unit is the maximum output of a generator
- Accredited capacity considers a generators production during peak demand

By request

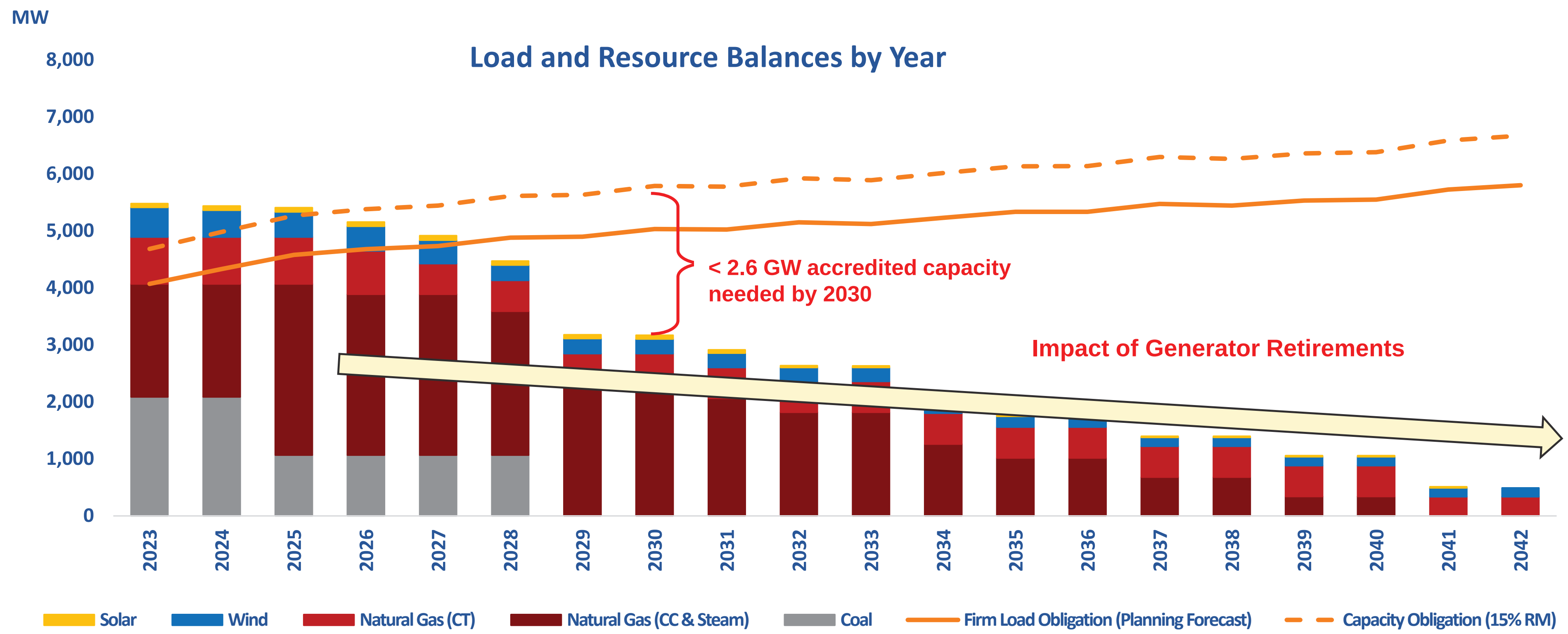
Existing SPS Generating Resources

Plant Name	Fuel	Maximum Capability	COD Year	Retirement / Expire
Cunningham 2	Gas ST	183	1965	2025
Maddox 2	Gas CT	61	1976	2025
Blackhawk (PPA)	Gas CT	220	1999	2026
Nicholas 2	Gas ST	106	1962	2027
Plant X 4	Gas ST	189	1964	2027
Tolk 1	Coal	532	1982	2028
Tolk 2	Coal	535	1985	2028
Nicholas 1	Gas ST	107	1960	2028
Maddox 1	Gas ST	112	1967	2028
Nicholas 3	Gas ST	244	1968	2030
Jones 1	Gas ST	243	1971	2031
Jones 2	Gas ST	243	1974	2034
Hobbs (PPA)	Gas CC	558	2008	2034
Harington 1	Coal-to-Gas	339	1976	2036
Harington 2	Coal-to-Gas	339	1978	2038
Harington 3	Coal-to-Gas	340	1980	2040
Cunningham 3	Gas CT	106	1998	2040
Cunningham 4	Gas CT	101	1998	2040
Jones 3	Gas CT	166	2011	2056
Jones 4	Gas CT	168	2013	2058

Plant Name	Type	Maximum Capability	COD Year	Retirement / Expire
Caprock	Wind	80	2004	2024
San Juan	Wind	120	2005	2025
Wildorado	Wind	161	2007	2026
Spinning Spur	Wind	161	2012	2027
SunEd	Solar	50	2011	2031
Mammoth Wind	Wind	199	2014	2034
Palo Duro Wind	Wind	250	2014	2034
Roosevelt Wind	Wind	250	2015	2035
Chaves	Solar	70	2016	2041
Roswell	Solar	70	2016	2041
Hale	Wind	478	2019	2044
Sagamore	Wind	522	2020	2045
Lorenzo	Wind	80	2018	2048
Wildcat	Wind	150	2018	2048

Within the 20-year planning period:
- All existing thermal generation is scheduled to retire, except Jones 3 & 4 (234 MW)
- All renewable generation is scheduled to expire / retire except Sagamore, Hale, Lorenzo, Wildcat

New Mexico Load vs. Current Resources Balance - Planning Forecast (1),(2)



1. Based on Summer Planning Load Forecast, 1H23
2. Capacity MWs shown on an accredited “firm” basis

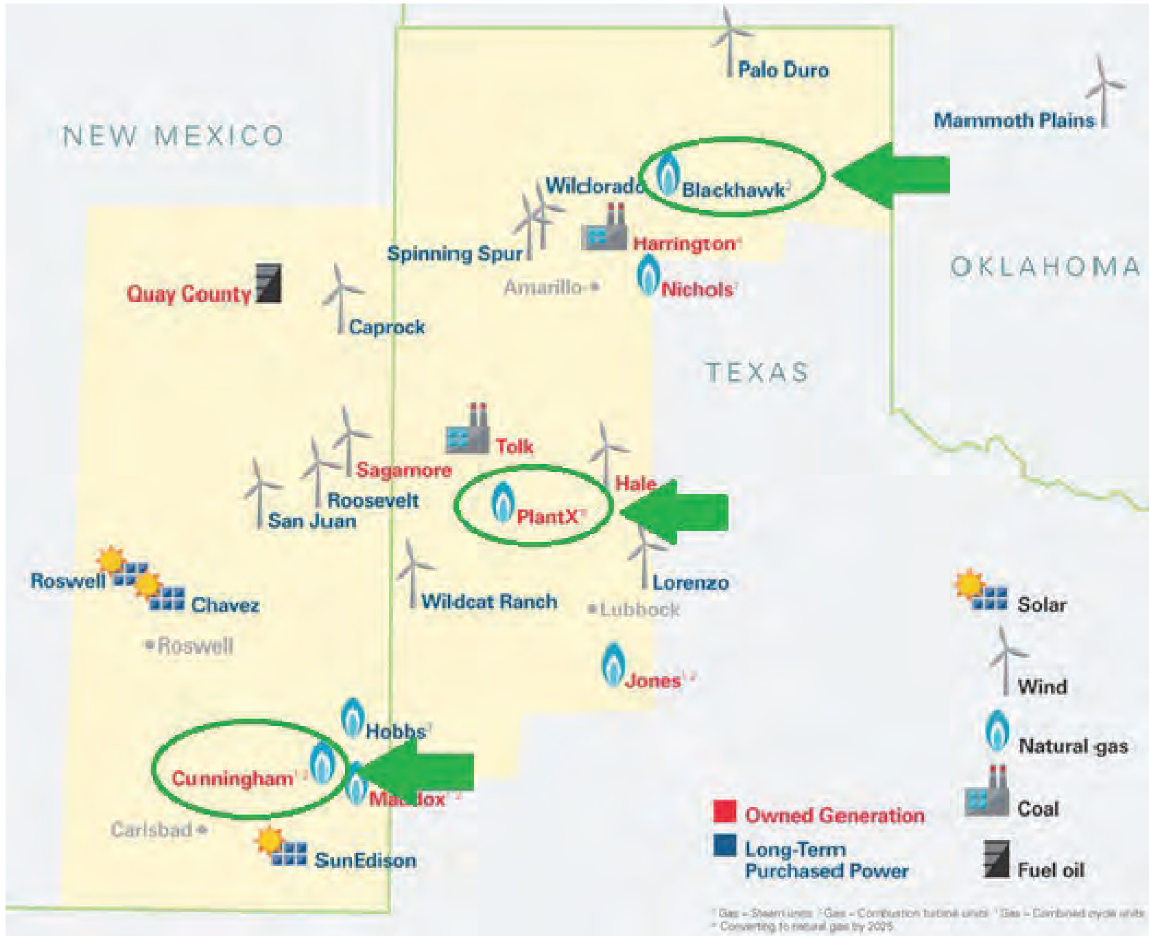
2021 ACTION PLAN UPDATE

2021 IRP – ACTION PLAN UPDATE

- SPS's initial 2021 IRP action plan did not identify the need for any new generating resources
- However, SPS supplemented the action plan to incorporate the following changes:
  - Passage of the Inflation Reduction Act
  - Increase in planning reserve margin requirement from 12% to 15%
  - Implementation of the ELCC methodology for renewable accreditation
  - Increased load growth – particularly in SE New Mexico
- In November 2022, in accordance with the supplemented action plan, SPS filed an all-source solicitation for new generating resources
- In June 2023, SPS announced the successful projects that would be advanced to contract negotiations*

**As negotiations are on-going, SPS cannot share commercially sensitive information at this time*

2022 RFP Bid Selection

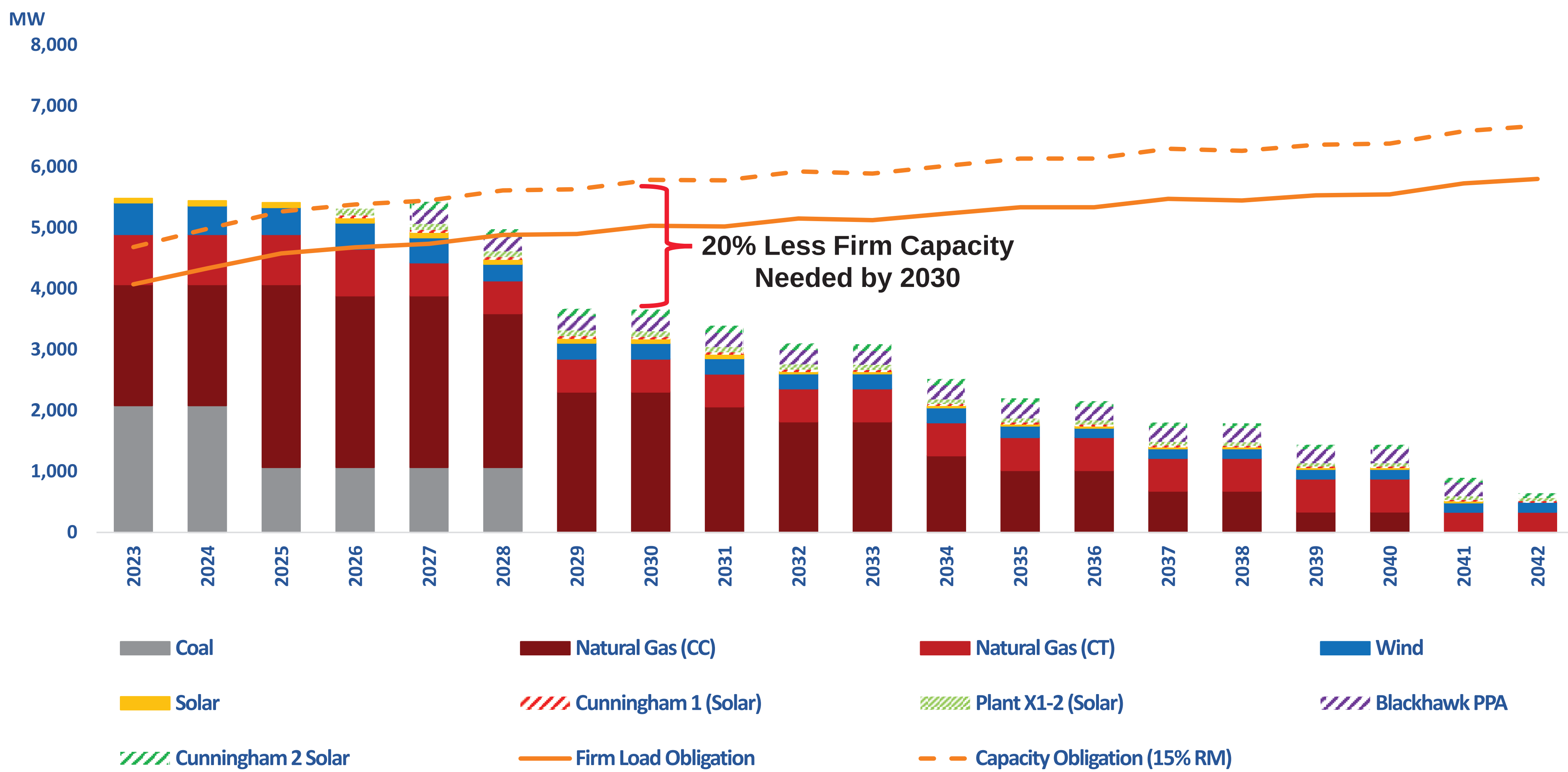


Bidder	Project	Tech	Size(MW)	COD
SPS	Plant X1-2 Solar	Solar	150	4/1//2026
SPS	Cunningham1 Solar	Solar	72	4/1/2026
SPS	Cunningham 2 Solar	Solar	196	4/1/2027
Contour Global	Blackhawk Station	Thermal	230	Existing

Recommend portfolio will more than triple the size of SPS's solar fleet from 190 MW to 608 MW

SPS is also continuing to explore battery energy storage proposals from the November 2022 RFP – More to follow

Load vs. Current and Recommended Future Resources Balance[1]



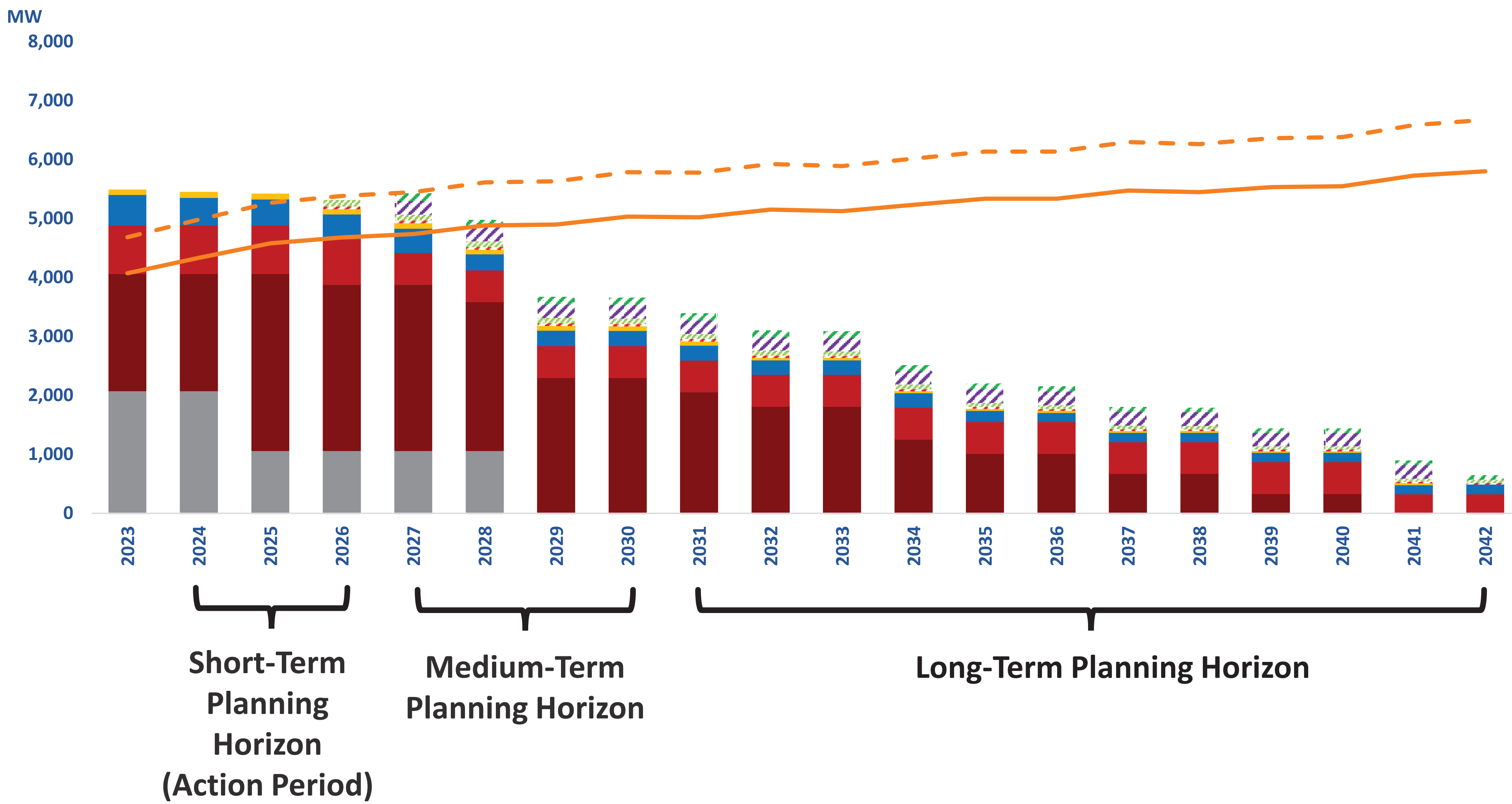
1. Capacity MWs shown on an accredited "firm" basis

2023 IRP - MODELING APPROACH

Determining the cost of resource portfolios

- SPS uses the EnCompass production cost model to determine the most cost-effective portfolio(s) of resources to meet projected future energy demand
- Resource Portfolios must meet predetermined reliability and clean energy requirements (e.g., planning reserve margin requirements)
- System costs are calculated on a present value revenue requirement basis (“PVRR”)
- Results are only as accurate as the modeling inputs - critical inputs are often subject to sensitivity analysis (e.g., load forecasts, gas prices)
- Qualitative factors, often outside the scope of the model, should also be considered
- The lowest cost portfolio of resources *may not* be the optimal portfolio

Load vs. Current and Recommended Future Resources Balance



Multi-Jurisdictional Utilities

Information Only

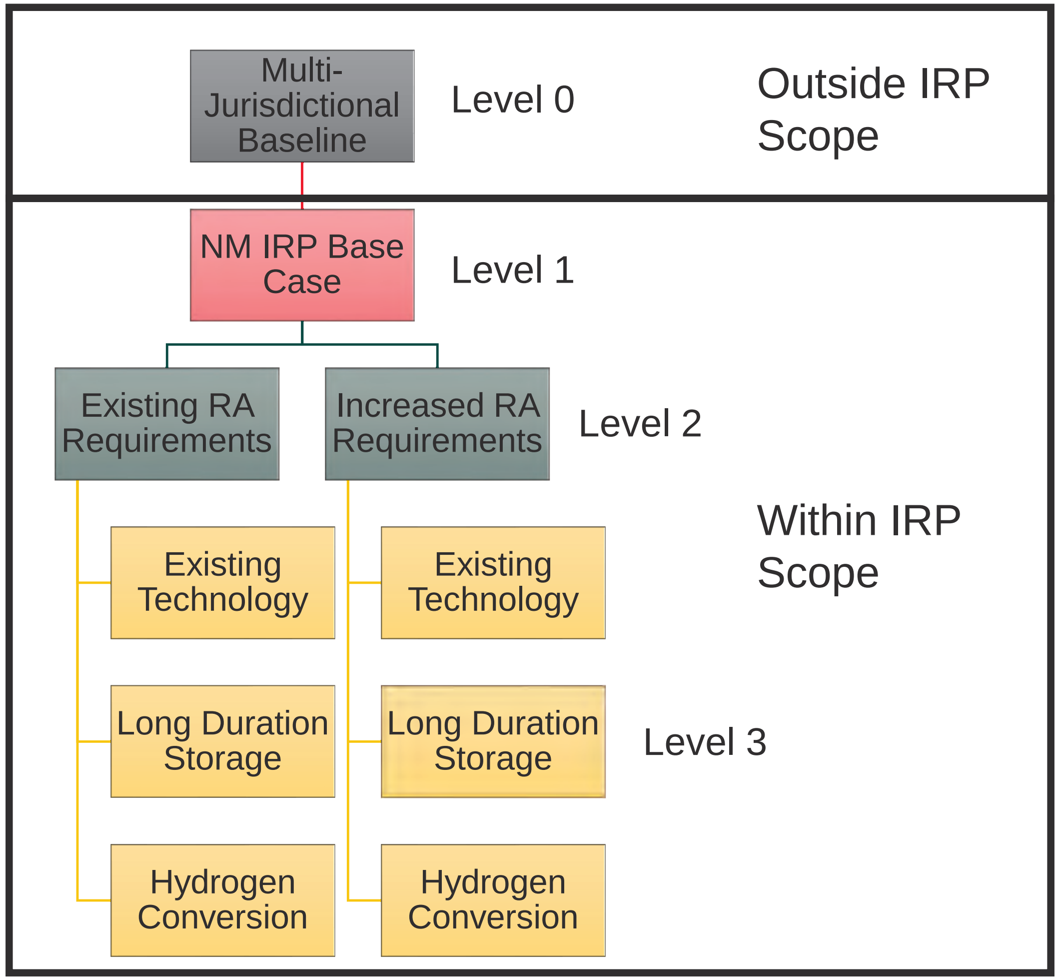
> ***17.7.3.8 D:***
> *A multi-jurisdictional utility shall include in its IRP a description of its resource planning requirements in the other state(s) where it operates, and a description of how it is coordinating the IRP with its out-of-state resource planning requirements.*

SPS
- Is a multi-jurisdictional utility serving retail customers in Texas, and wholesale customers;
- Is not required to file an IRP in Texas;
- Conducts resource planning analyses on a system-wide basis

Before conducting any analysis, SPS will first perform EnCompass modeling excluding any jurisdictional specific requirements (e.g., renewable portfolio standards) to establish a baseline for out-of-state decision-making purposes only.

This analysis ***will not*** form SPS's base case in the 2023 NM IRP. All scenarios included in the 2023 NM IRP ***will be*** compliant with NM jurisdictional rules and requirements

SPS – Modeling Hierarchy



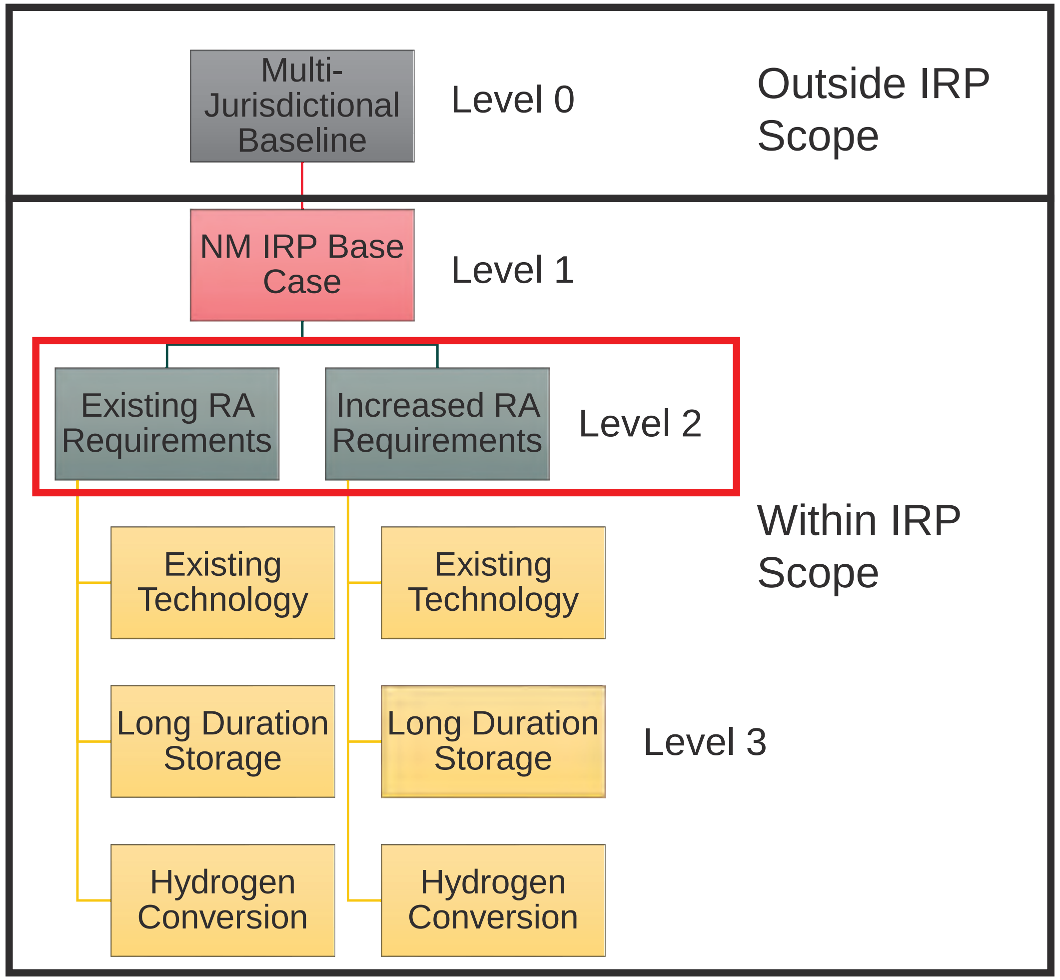
SPS will evaluate the following sensitivities for each of its level 3 analysis:

Load
- Base Load (50% percentile)
- High Load (85% percentile)
- Electrification & Emerging Technologies Load (per key accounts recommendation)

Gas
- Base Gas
- Low Gas
- High Gas

Transmission Network Upgrade Sensitivities
- Base Transmission Network Upgrade Costs
- High Transmission Network Upgrade Costs

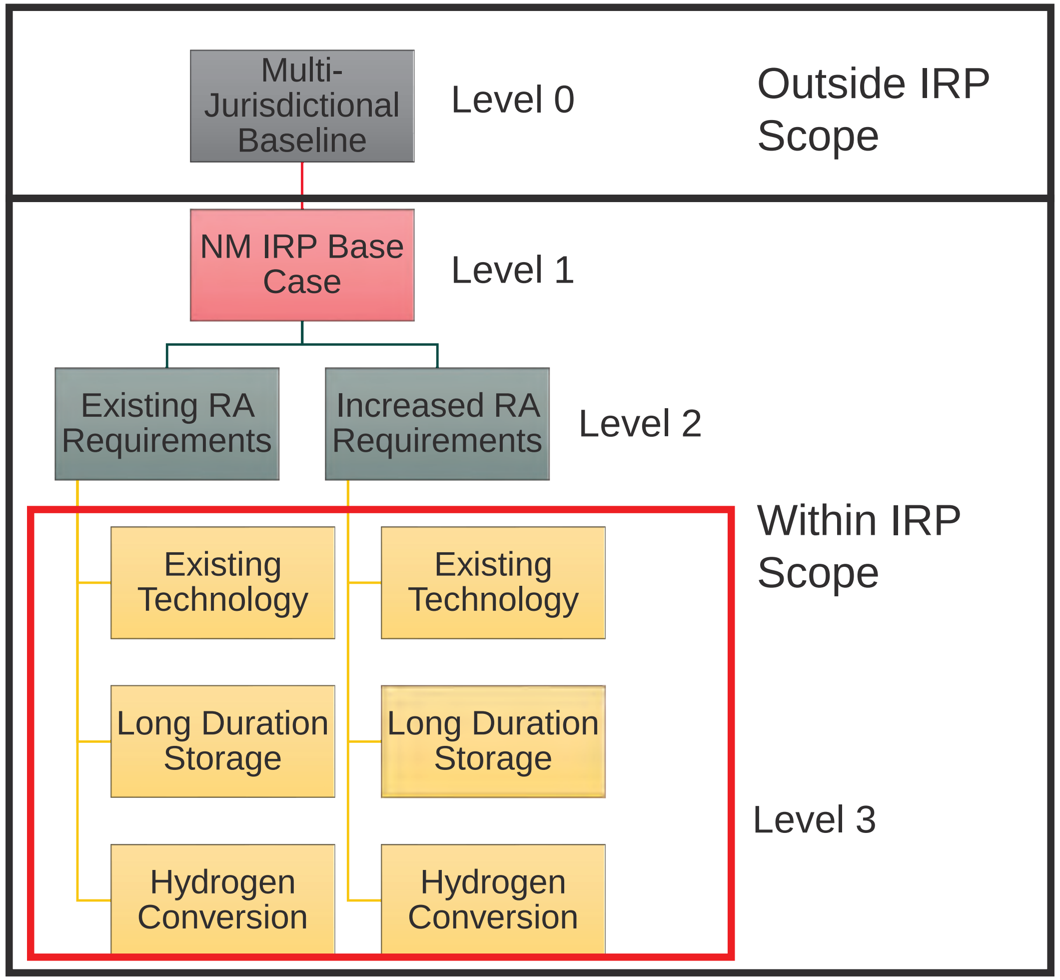
SPS – Modeling Hierarchy



Existing Resource Adequacy Requirements
Modeling will include the Southwest Power Pool's existing 15% planning reserve margin in all months

Increased Resource Adequacy Requirements
Through discussions with the Southwest Power Pool, SPS anticipates the planning reserve margin will increase with a more stringent winter requirement likely. Beginning 2028, Modeling will include a 20% planning reserve margin requirement in the Winter and an 18% PRM in the Summer

SPS – Modeling Hierarchy



Existing Technology
Modeling will not include any new gas generation. The only new supply-side generating resources available for selection will be solar, wind, and 4-, 6-, and 8-hour lithium-ion battery energy storage systems ("BESS")

Long Duration Storage
As existing technology, plus addition of 100-hour long duration BESS

Hydrogen Conversion
Allow new firm and dispatchable gas generation assuming conversion to 100% hydrogen before 2040

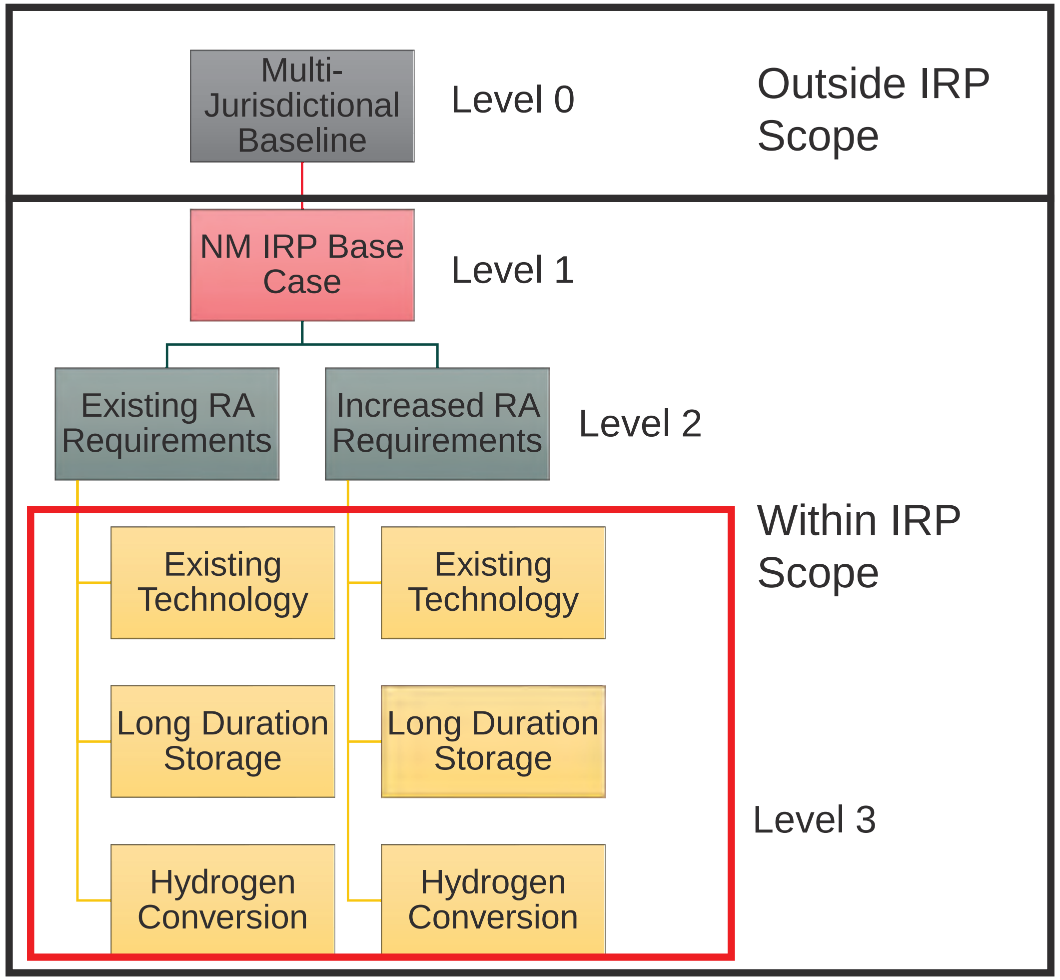
SPS – Modeling Hierarchy

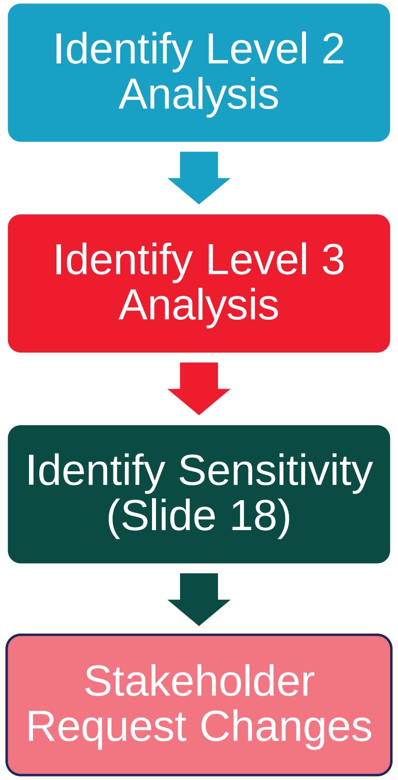
Load	Gas & Market	Transmission Network Upgrades
Financial Forecast (50% Percentile)	Base Case Gas & Market Energy Forecasts	$400/kW*
Planning Forecast (85% Percentile)	High Case Gas & Market Energy Forecasts	$600/kW*
Electrification & Emerging Technologies (Per Key Accounts)	Low Case Gas & Market Energy Forecasts	

Transmission Network Upgrades – The following generation will not incur any network upgrade costs:

- 1,100 MW of accredited capacity interconnected at Tolk (generator replacement)
- 1,000 MW of wind and/or solar at Harrington (surplus interconnection)
- 1:1 for accredited capacity replacement as gas-steam retires
- Battery energy storage (assume it will be co-located at existing or proposed wind or solar facility)
- Simple Cycle gas CT (assume it will be co-located at existing or proposed wind or solar facility)

Stakeholder Modeling Requests





Modeling Timeline

Production Cost Modeling is a time and labor-intensive process, SPS respectively requests the working groups submit modeling runs requests ahead of the meeting on July 6, 2023. This will allow time for discussion and development of any inputs and assumptions

SPS will then review completed modeling with stakeholders during the meeting on August 1, 2023

APPENDIX

IRP PRESENTATION - SPP

Jarred Cooley – Director, Strategic Planning

IRP Stakeholder meeting – Roswell, NM

June 14, 2023

TOPICS TO COVER

- Discuss SPP
- Resource Adequacy efforts at SPP
- Considerations as part of the IRP

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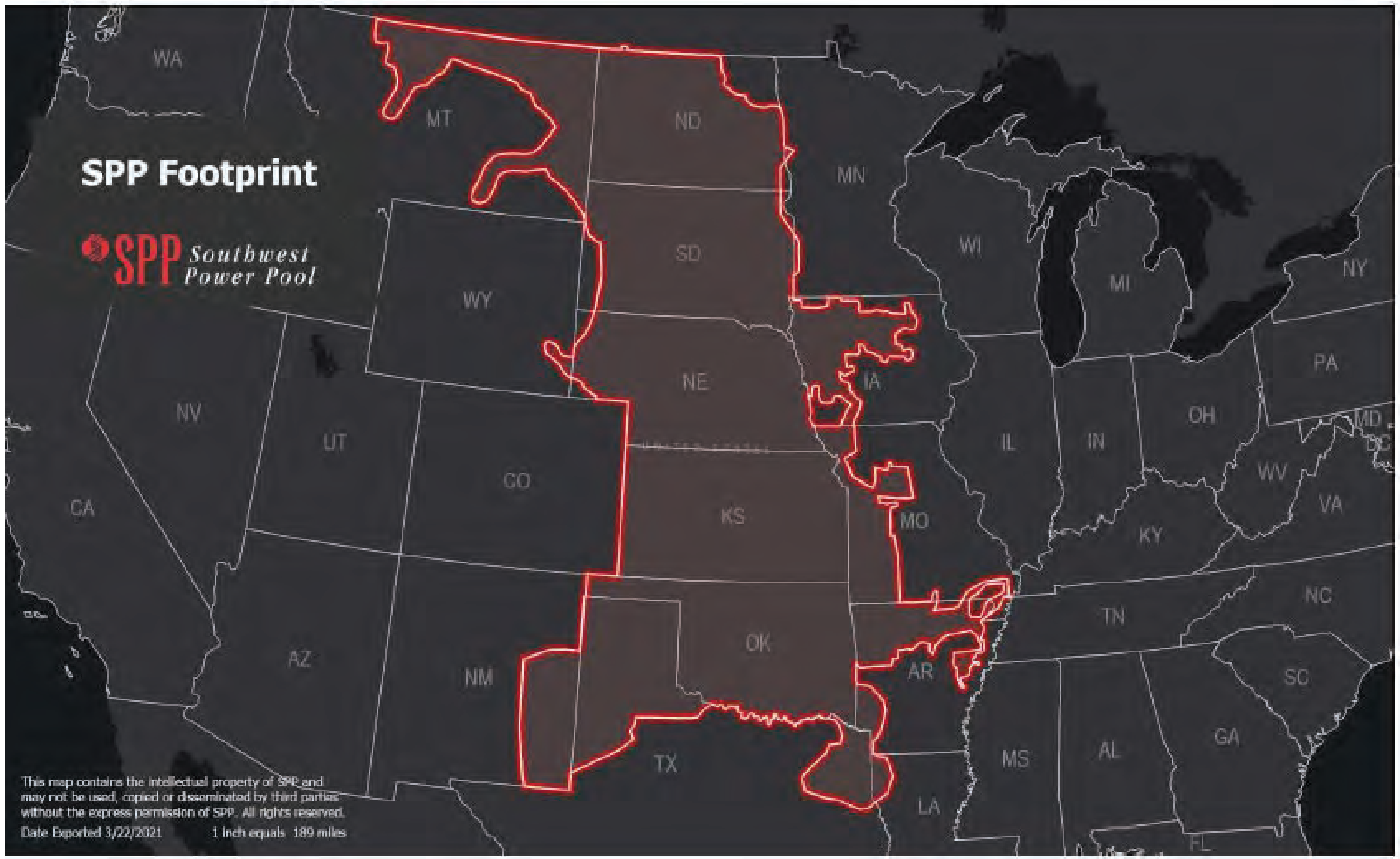
What is the Southwest Power Pool?

The Southwest Power Pool (SPP) is:

- A 501(c)(6) nonprofit corporation, based in Little Rock, AR
- FERC approved Regional Transmission Operator (RTO) since 2004
- 114 members, diverse membership
- Stakeholder driven
- Integrated Marketplace – Day ahead and real time market
- A Tariff Administrator
- Independent Board of Directors (9)


Alberta Electric System Operator
Ontario Independent Electric System Operator
ISO New England
New York ISO
Midcontinent ISO
PJM Interconnection
California ISO
Southwest Power Pool
Electric Reliability Council of Texas



MEMBERS IN 14 STATES

- Arkansas
- Iowa
- Kansas
- Louisiana
- Minnesota
- Missouri
- Montana
- Nebraska
- New Mexico
- North Dakota
- Oklahoma
- South Dakota
- Texas
- Wyoming

Benefits of being part of SPP

- Access to larger pool of generation resources – low cost energy
- Decrease generation reserves
- Collaborative Transmission Planning
- Generation Interconnection Queue
- Load interconnection requests
- Outage coordination
- Cost Allocation
- Training Opportunities
- Compliance

SPP Generation Interconnection Queue

Definitive Interconnection System Impact Study (DISIS)

- Current Queue – 561 projects, 111.5 GW
- 7 cluster studies currently in progress
- DISIS-2023-001 window will remain open

Studies consist of three phases (outlined in Attachment V of the SPP OATT)

- Phase 1 – reliability impact
- Phase 2 – reliability and stability impact
- Phase 3 – reliability and stability, issuance Generation Interconnection Agreement (GIA)
  - Between Phases 1 and 2 and Phases 2 and 3, generators are required to pay or are withdrawn

What SPP does not do

SPP does not do:

- Transmission – Siting, Construction, or Permitting
- Generation – Planning, Siting, Construction, or Permitting
- All the NERC and FERC compliance activities
- Planning for transmission facilities below 100 kV

RESOURCE ADEQUACY AND IMPACTS TO IRP

Resource Adequacy at SPP

Widely viewed as the most critical topic at SPP currently

SPP Open Access Transmission Tariff and bylaws gives authority on Resource Adequacy methodology to the Regional State Committee (RSC)

- RSC is comprised of one Commissioner per state in SPP's footprint (14)
  - Chair O'Connell is on the RSC for NM
- SPP Board of Directors (BOD) can:
  - Approve same proposal as RSC
  - Defer authority to the RSC
  - Approve alternative proposal

Resource Adequacy at SPP

Multiple groups (mix of stakeholders and regulators) have direct input to the RSC and BOD:

- Supply Adequacy Working Group
- Cost Allocation Working Group
- Improved Resource Availability Task Force
  - Created following Winter Storm Uri, likely going away by end of the year
- Resource and Energy Adequacy Leadership (REAL) Team
  - Created January 2023
  - This group will be driving a lot of the Resource Adequacy policy going forward
- Grid of the Future / Strategic Planning

Reliability focus - IRATF

Following Winter Storm Uri – SPP

- Inertia – looking at market solution
- Primary frequency response – looking at market solution
- Ramp – looking at assignment to load serving entities
- Flexibility
- Fuel assurance

REAL TASK PRIORITIZATION

IN-PERSON SESSION		VIRTUAL SESSION		
MAY	• Market Mechanisms • Value of Loss Load • Review SIRs	JUNE	2hr	• Future Grid Study
JULY	• Fuel Assurance • Ramp Flexibility • Incremental Load on RA	AUGUST	4hr	• Regional RTO RA Polices
SEPTEMBER	• RA Methodology/Tools • LRE RA Policies • EUE Methodologies	OCTOBER	4hr	• Generator Interconnection • Transmission Policy & Outages
NOVEMBER	• Future Capacity Accreditation & PRM • RA Accreditation Policy Adjustments • RA Seasonal Application Construct	DECEMBER	3hr	• State Capacity Policies

SPP

What has happened thus far (2022-2023) – Key Items

SPP RSC and/or BOD have:

- Approved change in PRM from 12% to 15% for Summer 2023
- Approved Planning Based Accreditation for conventional units (FERC filing late 2023)
- Approved Sufficiency value curve (FERC approved)
- Approved language for non-tariff violation if pay deficiency payment on PRM (FERC approved)
- Approved Winter deliverability requirement

FERC reject the SPP ELCC filing March 2023 – SPP working on new filing

Planning Reserve Margin

Currently have a Planning Reserve Margin (PRM) of 15% - Set forth by SPP

- Was approved to be moved from 12% to 15% July of 2022
  - Implementation is Summer 2023
  - This is a minimum requirement to meet
- Value driven by the Loss of Load Expectation (LOLE) study
- Failure to meet the PRM will result in Deficiency Payments (outlined in SPP tariff)

ELCC and PBA

Effective Load Carry Capability (ELCC)

- Applies to renewables

Performance Based Accreditation (PBA)

- Applies to conventional resources

SPP and stakeholders working on finalizing ELCC and PBA for RSC and SPP BOD approvals Oct 2023

What is coming up at SPP (not firm dates):

- Winter PRM (Part 1): create a winter PRM for 2023-2024 at 15% (mirror summer's PRM)
  - Expected SPP approvals - July 2023
- Winter PRM (Part 2): create a stand-alone winter PRM for 2025-2026 (separate from summer)
  - Expected SPP approvals - January 2024
- Performance Based Accreditation (PBA) and Effective Load Carry Capability (ELCC)
  - Expected SPP approvals - October 2023
- Summer PRM: looking to increase the existing Summer PRM in next 2 years (LOLE study being worked on currently)

Additional Items at SPP

Expected SPP approvals – October 2023

- Ramping requirements for Summer 2026
- Strengthen firm fuel requirements
- Demand Response policies related to capacity accreditation for interruptible load

Expected SPP Approvals - 2024

- Improve generation maintenance and outage policies
- Creation of Value of Loss of Load (VOLL) and Expected Unserved Energy (EUE) metrics and associated policies

Considerations to include in IRP modeling:

- ELCC and PBA implementation by SPP
- Upcoming changes to implement at Winter PRM by SPP
- Upcoming changes to implement an increased Summer PRM by SPP
- Changes to how demand response resources are accredited by SPP

Other item – Reliability

- Ramping, inertia, frequency response, fuel diversity, etc.
- Not captured in the models but critical to keeping the lights on

QUESTIONS?

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APPENDIX

STAFF recommends the IRATF:

Approve the recommendations summarized below:

- **Inertia**:
  - MWG to design and implement changes to the Market logic to ensure SPP BAA is operating with adequate Inertia response.
  - MWG to determine the Market product needed to ensure adequate headroom for providing Inertia and compensate for lost opportunity costs
  - GIUF to establish inertial response capability requirements applicable to all new resources.
- **Primary Frequency Response**:
  - MWG design and implement changes to the Market logic to ensure SPP BAA is operating with adequate Primary Frequency Response.
  - MWG to determine the Market product needed to ensure adequate headroom for providing Primary Frequency Response and compensate for lost opportunity costs
- **Ramp**:
  - SPP staff develop a Revision Request for allocating a share of the required Ramp attribute quantity to operate SPP BAA reliable, to LREs through Attachment AA
- **Flexibility**:
  - SPP Staff, working with MWG & SAWG to develop a common understanding of what the attribute flexibility means for SPP BAA.
- **Fuel assurance**:
  - SPP Staff, working with MWG & SAWG to develop a common understanding of what the attribute fuel assurance means for SPP BAA
- **RPA1.6 yearly attribute adequacy assessment**:
  - SPP Staff perform a yearly RPA1.6 type of effort based on new ITP scenarios and report results to impacted stakeholder groups.
- **RPA1.7 biennial policy assessment**:
  - SPP Staff perform a biennial RPA1.7 effort to re-assess for all reliability attributes the need for market product, policies or requirements and report results to impacted stakeholder groups and RSC

Western Services (Not Applicable to SPS)

- Markets+
  - Currently in Development, Phase 2 in progress
- RTO West
  - 6 utilities currently investigating
- Western Reliability Coordinator
- Western Energy Imbalance Services Market (WEIS)
  – Launched 2021 – real time market, buy and sell energy
- Western Resource Adequacy Program (WRAP)
- Western Interconnection Unscheduled Flow Mitigation Plan

Sales and Demand Forecast Overview

- Xcel Energy's Sales, Energy, and Demand forecasting team creates multi-year forecasts of class-level customer counts and sales by state and system-level energy and peak demands
  - Forecasts are key inputs to many planning processes, including the Integrated Resource Plan

- Forecasts are developed using:
  - Regression/statistical analysis
  - Trend analysis
  - Contract terms

- Exogenous adjustments include:
  - Demand Side Management
  - Distributed generation solar
  - Electric Vehicles
  - Individual large customer information

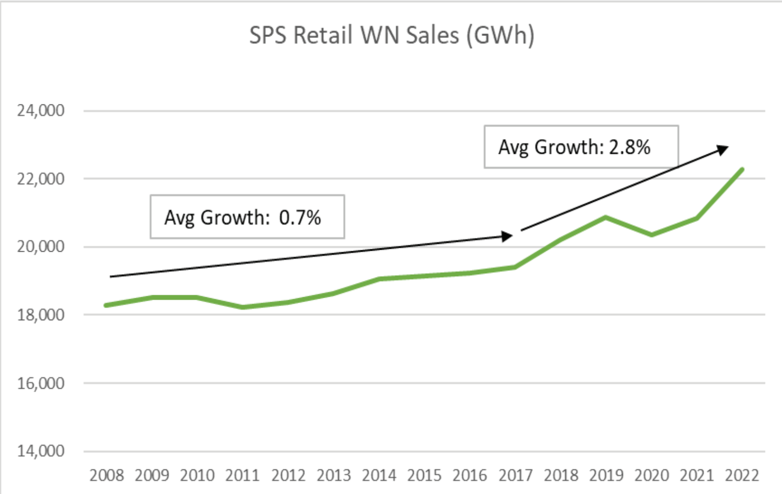
- Forecast scenarios
  - Base Load (50^{th} percentile)
  - High Load (85^{th} percentile)
  - Electrification and Emerging Technologies

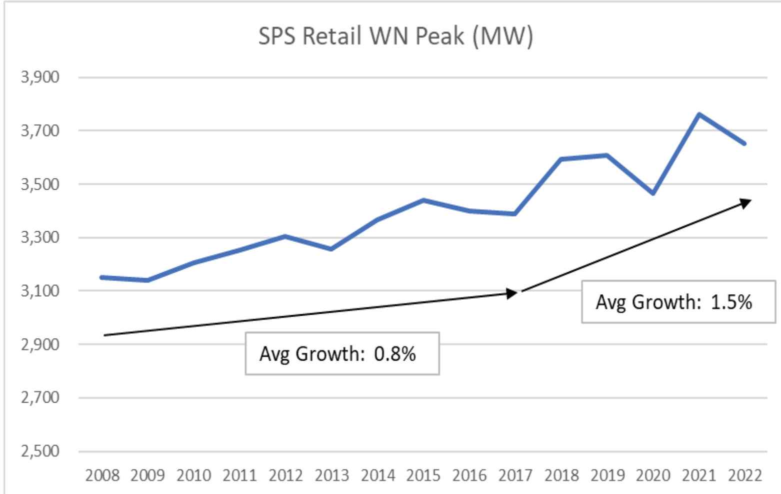
Inputs and Key Drivers

- Key inputs to the models include:
  - Historical sales, customer counts, and weather
  - Historical economic trends – drivers include housing stock, population, personal income, employment, state/metro gross product and oil production

- Key forecast drivers include:
  - Forecasted service territory economics – provided by an external vendor, IHS Markit
  - Weather – 30-year normals used in the forecasts, data from NOAA for select weather stations
  - Demand Side Management
  - Distributed Solar
  - Electric Vehicles
  - Large customer additions and expansions

Sales and Peak Trends

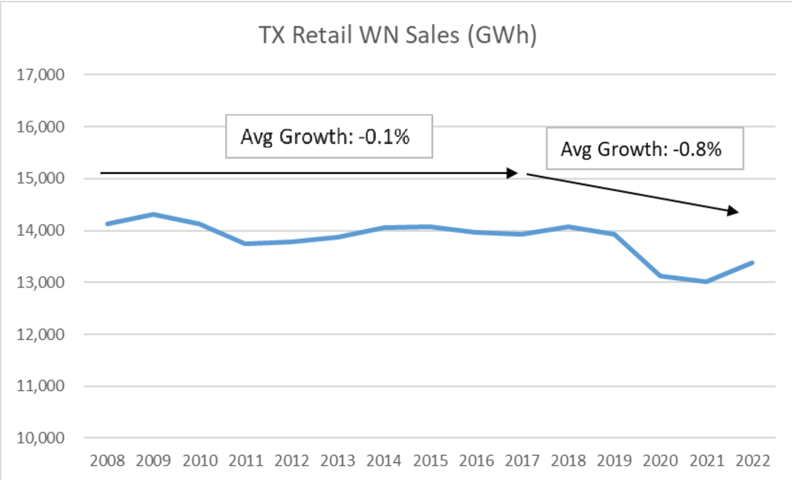


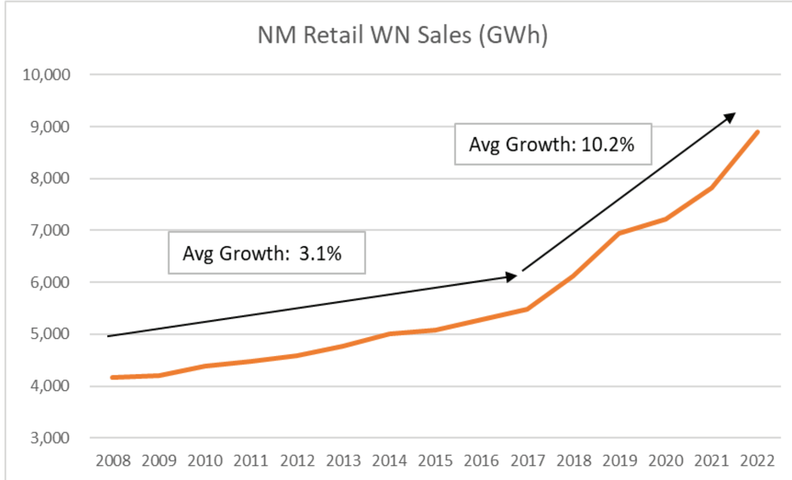


- Retail sales growth has accelerated since 2017, even with a pandemic related decline in 2020
- Driven primarily by expansion of the oil and gas industry in New Mexico
- Growth expected to continue through the forecast period

- Retail peak growth has also accelerated since 2017
- Growth expected to continue with economic growth and the addition of new, large loads

Sales Trends by State





- TX sales flat before a pandemic related decline in 2020
- Customer requests from high usage/high load factor industries expected to drive stronger growth in TX

- NM sales have shown strong growth since 2017
- Driven primarily by increases in sales to the oil and gas sector
- Expansion of oil and gas sector expected to continue, with significant potential for growth from electrification

Glossary of Acronyms and Defined Terms

Acronym/Defined Term	**Meaning**
ADMS	Advanced Distribution Management System
AGIS	Advanced Grid intelligence and Security
ATB	Annual Technology Baseline
BESS	Battery Energy Storage System
BTM	Behind the Meter
C&I	Commercial and Industrial
CC	Combined Cycle
CCN	Certificate of Convenience and Necessity
CCS	Carbon Capture and Storage
CO_2	Carbon Dioxide
COD	Commercial Operations Date
Commission	New Mexico Public Regulation Commission
CSG	Community Solar Garden
CT	Combustion Turbine
CTG	Combustion Turbine Generator
CPCN	Certificate of Public Convenience and Necessity
DER	Distributed Energy Resource
DSM	Demand-Side Management
EE	Energy Efficiency
ELCC	Effective Load Carrying Capability
EOY	End of Year
EPA	Environmental Protection Agency
EUEA	Efficiency Use of Energy Act

Acronym/Defined Term	**Meaning**
FERC	Federal Energy Regulatory Commission
FOM	Fixed Operations and Maintenance
GCP	Combined Real Gross County Product
GWh	gigawatt-hour
H2	Hydrogen
HRSG	Heat Recovery Steam Generator
ICO	Interruptible Credit Option
IM	Independent Monitor
IRP	Integrated Resource Plan
IRP Rule	17.7.3 NMAC
ISO	independent system operator
ITC	Investment Tax Credit
kW	kilowatt
kWh	kilowatt-hour
L&R	Loads and Resources
LCOE	Levelized Cost of Energy
LED	Light Emitting Diode
LM	Load Management
LOLE	Loss of Load Expectation
LRE	Load Responsible Entity
MMBtu	Million British Thermal Unit
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NMBLM	New Mexico Bureau of Land Management
NMED	New Mexico Environment Department

Acronym/Defined Term	**Meaning**
NERC	North American Electric Reliability Corporation
NREL	National Renewable Energy Laboratory
NTC	Notice to Construct
NYMEX	New York Mercantile Exchange
OATT	Open Access Transmission Tariff
O&M	Operations and Maintenance
Planning Reserve	available capacity above the projected peak demand
POI	Point of Interconnection
PPA	Purchased Power Agreement
PRM	Planning Reserve Margin
PUCT	Public Utility Commission of Texas
PTC	Production Tax Credit
PV	Photovoltaic
PVRR	Present Value Revenue Requirements
QF	Qualifying Facility
RFI	Request for Information
RFP	Request for Proposal
RPS	Renewable Portfolio Standard
RTO	Regional Transmission Organization
SMR	Small Modular Reactor
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company, a New Mexico corporation
Staff	Utility Division Staff of the Commission
STG	Steam Turbine Generator

Acronym/Defined Term	**Meaning**
TCEQ	Texas Commission on Environmental Quality
Tolk Analysis	analysis evaluating the economically optimal retirement date of the Tolk Units
TOU	Time of Use
VOM	Variable Operations and Maintenance
Xcel Energy	Xcel Energy Inc.

GRIDWORKS

Stakeholder Workshop to Inform the SPS Integrated Resource Plan

Meeting #3, June 13-14, 2023

Roswell Convention and Civic Center, Roswell, New Mexico

Read ahead materials available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

We strongly encourage attendance in person for this workshop. A virtual participation option is available through ZOOM, but the quality of the stakeholder interaction may be lower via this option

AGENDA

June 13, 2023

Virtual participation via ZOOM, for Session #1: https://us02web.zoom.us/j/8569536132

Meeting ID: 856 953 6132

12:00 - 12:45 PM: Networking lunch (provided)
1:00 - 1:15 PM: SESSION #1, Welcome, purpose of workshop/outcomes, overview of process
1:15 - 2:15 PM: SPS Presentations

- IRP Outline/TOC and 2021 Action Plan Update (results of most recent RFP) - presenter ?
- Modeling process plus post modeling decision process - presenter ?
- Process timeline and how stakeholder deliverables fit in - presenter ?

2:15 - 2:30 PM: Break
2:30 - 3:30 PM: Question and Answer Dialogue Session
3:30 - 3:45 PM: Organize for Working Group Activities

- Statement of Need Working Group
- Modeling Working Group

3:45 - 4:00 PM: Break
4:00 - 5:00 PM: SESSION #2, Facilitated Working Group Discussions in breakout rooms

June 14, 2023

Virtual participation via ZOOM, for Session #3: https://us02web.zoom.us/j/8569536132

Meeting ID: 856 953 6132

8:30 - 9:00 AM: Coffee and networking
9:00 - 9:30 AM: SESSION #3, Plan for the day and stakeholder questions from day 1

9:30 - 10:30 AM: SPS Presentations with Q&A

- Opportunities/challenges of being part of the SPP - Jarred Cooley

10:30 - 10:45 AM: Break

10:45 - 2:15 PM: SESSION #4, Working Group Activities, including working lunch (provided)

2:15 - 3:00 PM: SESSION #5, Working Group Report-outs; Next Steps; Meeting Feedback; Closing

Welcome!

Stakeholder Engagement Workshop
Meeting #3

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

June 13 & 14, 2023
Roswell, New Mexico

Read-ahead materials available at:
https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

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Purpose and Outcomes for the Workshop

- Enable stakeholders to
  - Develop input for the Statement of Need
  - Inform modeling activities, which, in turn, inform the action plan.
- Build appreciation for diverse views of stakeholders
- Key outcomes
  - Outline and initial content for Statement of Need
  - Define modeling working group actions
    - ❑ Develop modeling priorities
    - ❑ Establish timeline to review and provide feedback on SPS assumptions
    - ❑ Prepare working group to define and prioritize additional modeling runs

Note: segments of the workshop are being recorded. Links to the recordings will be included in the meeting summary.

The Workshop Agenda, at a Glance

June 13

- 12:00 - 12:45 PM: networking lunch
- 1:00 – 3:45 PM: learn more about the SPS system, the IRP, and the current action plan; address questions
- 3:45 – 5:00 PM: begin working group activities

June 14

- 8:30 AM: join us for coffee and pastries
- 9:00 – 10:30 AM: learn about the opportunities and challenges associated with membership in the Southwest Power Pool
- 10:45 – 2:00 PM: working groups create Statement of Need outline and framework for modeling activities (working lunch included)
- 2:15 – 3:00 PM: report-outs, feedback survey, next steps

GRIDWORKS' Team Members for New Mexico Stakeholder Engagement


Deborah Shields
Project Administrator


Jay Griffin
Facilitator


Margie Tatro
Facilitator

Gridworks convenes, educates, and empowers stakeholders working to decarbonize our economy.

www.gridworks.org
GRIDWORKS is a non-profit organization.


Amanda Ormond
Strategic Advisor & Facilitator


Matthew Tisdale
Strategic Advisor & Facilitator

Introducing the SPS IRP Team

Zoë Lees| Regional VP, Regulatory Policy

Considerations for an Inclusive Experience

- Stakeholders in the Roswell Convention Center Rooms
  - During recorded segments, please use the microphone, state your name before offering comment or question
  - Place your name tent card for others to see
- Stakeholders in the ZOOM Rooms
  - Raise hand during interactive segments
  - Use the chat to offer input
  - Contact the ZOOM host if you are having any trouble participating
- All participants
  - Define acronyms with first use
  - Remember that many of us are not experts
  - Seek to understand perspectives of others

Stakeholder Introductions

Please take 5 minutes to go around the table, each person offering:

- Your Name
- Your Organization
- One thing that excites you about this process

Those on Zoom, please enter this information in the chat.

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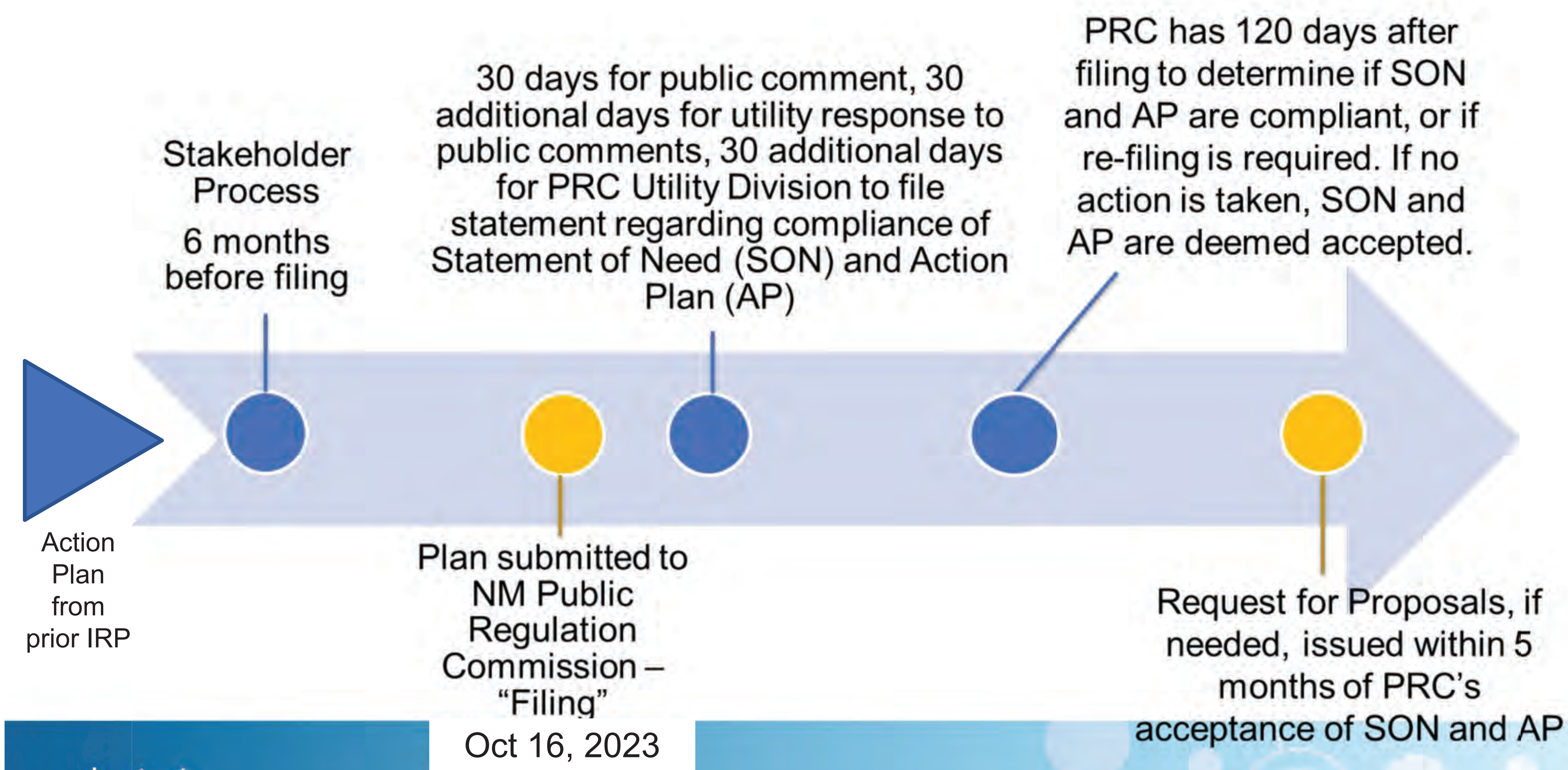
Sequence of Steps in the Integrated Resource Plan Process



Stakeholder Deliverables are Input to Statement of Need and Action Plan

May - June	July – August	September - October
• May 16: 2 – 4:30 PM • June 1: 2 - 4 PM • June 13 & 14: 12–5 & 9–3 workshop in Roswell	• **July 6: 1 – 5 PM** • **August 1 & 2: 12-5 & 9-3 workshop, location TBD** • **August 29: 2 – 3:30 PM**	• **Sept. 21: 1 – 5 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans, Check alignment with Statement of Need

3: IRP Reviews and Process Feedback

Tuesday, June 13 Provides Background and Start of Working Groups

TIME	TOPIC	
1:00	Welcome, purpose of workshop/outcomes, overview of process	Recorded
1:15	SPS Presentations • IRP Outline/TOC and 2021 Action Plan Update (results of most recent RFP) • Modeling process plus post modeling decision process • Process timeline and how stakeholder deliverables fit in	Recorded
2:15	Break	Recorded
2:30	Questions and Answers Panel	Recorded
3:30	Working Groups – Deliverables and Instructions	
3:45	Break	
4:00	Working Groups Begin Work	
5:00	Adjourn until 9:00 AM on Wednesday	

Let's Continue to Build our Foundation of Knowledge

- Presentation by SPS team
- Please write questions on index cards or put in chat (for the host to transcribe onto cards)
- Facilitators will collect and organize questions during the break
- SPS team responds to questions posed by stakeholders when called upon by facilitator

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Objectives of the Working Groups

The Statement of Need Working Group's objective is to develop input to the Statement of Need

The Modeling Working Group has the following objectives:

- Review and provide feedback on SPS modeling inputs and key assumptions;
- Review and provide feedback on SPS model results;
- Identify and prioritize stakeholder-requested modeling runs; and
- Identify and facilitate access to modeling software, if requested.

Time to Roll Up our Sleeves in Working Groups

Statement of Need Working Group	Modeling Working Group
Develop ideas, outline, and initial content for the Statement of Need	Organize for modeling engagement: prioritize discussion topics

- After the break, please choose one working group for these two days
- 4:00 – 5:00: Introductions, overview of deliverables, and plan for working group activities

SEE YOU TOMORROW FOR COFFEE AT 8:30

WORKSHOP RECONVENES AT 9:00 AM ON WEDNESDAY

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Welcome Back!

Stakeholder Engagement Workshop

Meeting #3

Day 2

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

June 13 & 14, 2023

Roswell, New Mexico

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

Wednesday, June 14 Allows for more Learning and Working Group Activities

TIME	TOPIC
9:00 RECORDED	Plan for today, gather additional questions
9:30 RECORDED	Opportunities/challenges of being part of the SPP – Jarred Cooley, SPS
10:30	Break
10:45	Working groups reconvene to continue work from previous day
12:00	Lunch in working groups
2:00	Break
2:15 RECORDED	Working Groups Reports, Feedback, Next Steps
3:00	Adjourn

Today's Focus is the Working Groups' Deliverables

But first,

- What questions arose for you yesterday? Collect on colored post-its and add to the wall

- What are the opportunities and challenges associated with being a member of the Southwest Power Pool?

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Objectives of the Working Groups

The Statement of Need Working Group's objective is to develop input to the Statement of Need

The Modeling Working Group has the following objectives:

- Review and provide feedback on SPS modeling inputs and key assumptions;
- Review and provide feedback on SPS model results;
- Identify and prioritize stakeholder-requested modeling runs; and
- Identify and facilitate access to modeling software, if requested.

Time to Roll Up our Sleeves

Statement of Need Working Group

Develop ideas, outline, and initial content for the Statement of Need

Modeling Working Group

Organize for modeling engagement: prioritize discussion topics

TIMETABLE

10:45 Convene Working Groups
- Select Spokesperson and Notetaker
- Facilitator Manages the Process
- Working Lunch, included

2:00 Break

2:15 Reassemble for Report Out and Closing

REPORT OUT

1. Conclusions
2. Recommended next steps
3. Identify any missing voices

Working Group Reports

REPORT OUT

1. Conclusions
2. Recommended next steps
3. Identify any missing voices

Statement of Need Working Group

Modeling Working Group

Looking Ahead

- July 6: 1 PM- 5 PM, Meeting #4 via Zoom
- Aug. 1-2: noon – 5 PM and 9 AM – 3 PM, LOCATION TBD
- Aug. 29: 2 PM – 3:30 PM, Meeting #6 via Zoom
- Sept. 21: 1 PM – 5 PM, Meeting #7 via Zoom
- Oct. 16 – IRP is filed
- Oct. 26: 2 PM – 3:30 PM, Meeting #8

Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

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Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

If you prefer to complete the form electronically

...please:

Scan the QR Code to the right

OR

Visit this link:
bit.ly/SPS-IRP-Feedback

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Information for use by working groups, if needed

SoN Working Group

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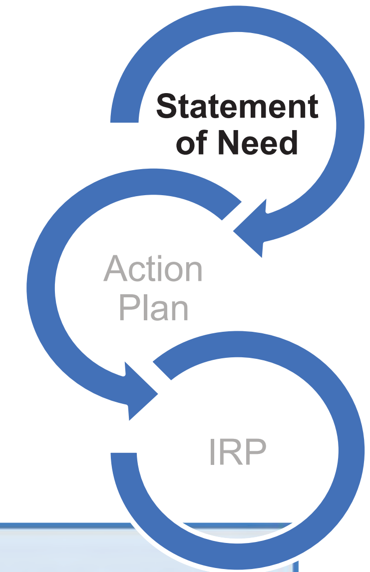
Statement of Need Defined by the IRP Rule



Statement of Need 17.7.3.10

- The statement of need is a description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies.
- The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

From Appendix A in the IRP Rule...

DETERMINATION OF THE RESOURCE PORTFOLIO:

A. To identify the most cost-effective resource portfolio, utilities shall evaluate all supply- side resources, energy storage, and demand-side resource options on a consistent and comparable basis, taking into consideration risk and uncertainty, including but not limited to financial, competitive, operational, fuel supply, price volatility, downstream impacts on transmission and distribution investments, extreme-weather events, and anticipated environmental regulation costs.

B. The utility shall evaluate the cost of each resource through its projected life with a life-cycle or similar analysis.

C. The utility shall consider and describe ways to mitigate ratepayer risk.

D. Each electric utility shall provide a summary of how the following factors were considered in, or affected, the development of resource portfolios:

(1) load management or modification and energy efficiency requirements;
(2) renewable energy portfolio requirements;
(3) existing and anticipated environmental laws and regulations, and, if determined by the commission, the standardized cost of carbon emissions;
(4) fuel diversity;
(5) susceptibility to fuel interdependencies;
(6) transmission or distribution constraints; and
(7) system reliability and planning reserve margin requirements.

E. Alternative portfolios. In addition to the detailed description of what the utility determines to be the most cost-effective resource portfolio, the utility shall develop alternative portfolios by altering risk assumptions and other parameters developed by the utility.

Clarification from NM PRC, Issued June 2, 2023

NM PRC Additional Guidance

Action Plan

- 3-year period following filing: 2024-2026

Statement of Need

- Planning period minimum is 20 years and can be longer; determined by utility in consultation with stakeholders

Investor-Owned-Electric-Utilities-and-Stakeholder-June-2-2023.pdf (gridworks.org)

June 30, 2023 Interim Subgroup - DSM Stakeholder Meeting

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Demand-Side Resource Modeling Subgroup Stakeholder Workshop for SPS Integrated Resource Plan

June 30, 2023

PURPOSE

Review SPS Demand-Side Resource Assumptions and Discuss Potential Modeling Scenario(s)

KEY OUTCOMES

1. Stakeholder review and feedback on SPS demand-side resource assumptions
2. Facilitate stakeholder-requested modeling scenarios

Supporting SPS presentations

- SPS demand-side resource assumptions

Read ahead materials, posted by July 29

- Gridworks intro slides (JPG presents)
- SPS presentation on assumptions (SPS)

DRAFT AGENDA

June 30, 2023 (9-10:30 am MDT)

9:00 – 9:05 AM – Welcome and Meeting Overview (Gridworks) (5 mins)

9:05 – 9:50 AM – SPS Presentation on Demand-Side Resource Modeling Assumptions (SPS) (45 mins)

9:50 – 10:15 AM – Facilitated Q&A on SPS presentation (Group discussion facilitated by Gridworks) (up to 25 mins)

10:15 – 10:30 AM – Discussion of stakeholder-requested modeling scenario(s) (Group discussion facilitated by Gridworks)

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Demand-Side Resource Subgroup Meeting, June 30, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

SUMMARY

Approximately 45 (3 on phone) stakeholder representatives from 14 different organizations attended an online meeting to review SPS modeling assumptions for demand-side resources and discuss potential alternative scenarios to analyze.

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

- **Agenda -Demand-Side Resource Modeling Subgroup Stakeholder Workshop for SPS IRP – 6/30/23**
- **Slide Deck – Demand-Side Resource Modeling Subgroup Meeting – 6/30/23**
- **DSR Modeling**
- **Slide Deck – SPS NM Energy Efficiency and Load Management Programs 6/30/23**
- **Current DM Offerings in SPS-NM**
- **Meeting Recording**
- **Xcel Energy New Mexico – DSM Potential Study 2021**

The SPS team first presented information about the components of their load and demand forecasts (DSR Modeling presentation) and discussed their current programs for energy efficiency and load management. Stakeholders asked questions using the chat feature and a list of the questions is attached to this meeting summary. The discussion then shifted towards modeling of demand-side resources and development of potential alternative scenarios. SPS staff presented the scenario request form that was shared with the modeling subgroup at the Roswell meeting and described the key features of demand-side resources that a scenario request should include. At the conclusion of the meeting, no stakeholders requested further meetings of this subgroup.

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NEXT STEPS

DATE	MODELING	STATEMENT OF NEED
July 6 STAKEHOLDER MEETING	Review of SPS base runs results Review proposals for stakeholder-requested Modeling Runs (Round 1)	Draft SoN input presented, feedback collected.
July 7-24	Modeling	Revisions to SoN input
July 25	Modeling results to date posted on Gridworks website as pre-read	SoN input posted on Gridworks website as pre-read
Aug 1-2 STAKEHOLDER MEETING	First Modeling Review including Stakeholder requested Modeling Runs (Round 2). Action Plan Input.	Assess level of consensus on SoN input. Action Plan Input.
September 21 STAKEHOLDER MEETING	Modeling Concluded – Final Modeling Review	

NEXT MEETING: The next meeting of the group, Meeting #4, is scheduled for July 6 from 1 PM – 5 PM, via Zoom: https://us02web.zoom.us/j/8569536132 (ID: 8569536132)

Join by phone
(US) +1 301-715-8592

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Attachment 1 - Questions/Discussion from Meeting Chat

09:09:14 From Cynthia Mitchell : EV is on peak?

09:19:14 From Hall, James A : Did I hear your base case sales assumption for oil and gas is decreasing sales out to 2030?

09:19:52 From Cynthia Mitchell : Speak more to the economies of scale on your DR offerings; what again is your DR buildout forecast; what is cost per kW/year

09:25:45 From Cynthia Mitchell : When the O&G electrification forecast available; want to discuss with James on on site self gen electrification

09:34:18 From Jay Griffin : Include an increased demand response scenario

How are distributed resources considered in the modeling?

How is distributed generation considered in the load forecast and what costs are assigned?

How are distribution system investments treated in the model?

09:35:35 From Cynthia Mitchell : Good Q and point Jay…James Hall could speak to what being considered self-gen solar+battery

09:39:09 From Jim DesJardins : There is a new interconnection rule in Nm that includes smart inverters and there are TIIR proceedings going on now that SPS is part of.

09:40:20 From Jim DesJardins : What about the 45 MW of Community Solar that is allocated to SPS?

09:42:05 From Jim DesJardins : Why are DERs still considered load reduction?

09:42:24 From Jay Griffin : Jim - you're up next!

09:47:34 From Austin Rueschhoff : Case No. 22-00155-UT

09:50:42 From Jim DesJardins : Thank you Austin that summary of 22-00155-UT. REIA was also an intervenor, but case was mainly for larger users.

09:56:58 From Cynthia Mitchell : Back to Ben's bookend approach to load forecast, what forecast will be used for scenario analysis? I assume medium? Seems there would be value in trying to pencil in estimates of various types of self-gen, community solar, O&G, etc

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09:58:30 From Cynthia Mitchell : Good point JIm

10:20:10 From Jacob Johnson : SPS IRP Modeling Request:https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu

10:20:18 From Cynthia Mitchell : Is your base scenario similar to your Tolk scenario in your rate case? To get to more specification in model sensitivity, could we see your base case?

10:22:01 From Hall, James A : Jay , will the Dshields email for gridworks work to share documents, thx

10:24:52 From Jay Griffin : James - yes that will work. Thank you!

10:24:57 From Gridworks : Hi James, yes , dshields@gridworks.org

10:25:16 From Hall, James A : thx

10:26:49 From Jeffry Pollock : The feedback form only allows 1 selection per item. It is typical that projections use a range of commodity prices (low, medium, high gas prices). So, should we assume that the feedback is for a specific modeling scenario?

10:32:48 From Jim DesJardins : Thank you. This was helpful. hope everyone has a good weekend and a good 4th.

Welcome!

Demand-Side Resource Modeling Subgroup Meeting

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

June 30, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

Purpose and Outcomes for the Meeting

- Review and discuss SPS assumptions for demand-side resources
- Discuss implications for developing alternative scenario(s)
- Decide on next steps for subgroup, if any

This meeting is being recorded for the benefit of those who are unable to attend. A link to the recording will be posted on the GRIDWORKS website under read-ahead materials for the July 6 meeting.

June 30 Meeting Agenda

9:00 – 9:05 AM – Welcome and Meeting Overview (Gridworks)

9:05 – 9:50 AM – SPS Presentation on Demand-Side Resource Modeling Assumptions (SPS)

9:50 – 10:15 AM – Facilitated Q&A on SPS presentation (Group)

10:15 – 10:30 AM – Discussion of stakeholder-requested modeling scenario(s) (Group)

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Thank you for attending.

Questions on this meeting? Please contact Jay Griffin at: jgriffin@gridworks.org

or Deborah Shields at INFO@gridworks.org

GRIDWORKS

Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
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Amanda Ormond
Strategic Advisor & Facilitator

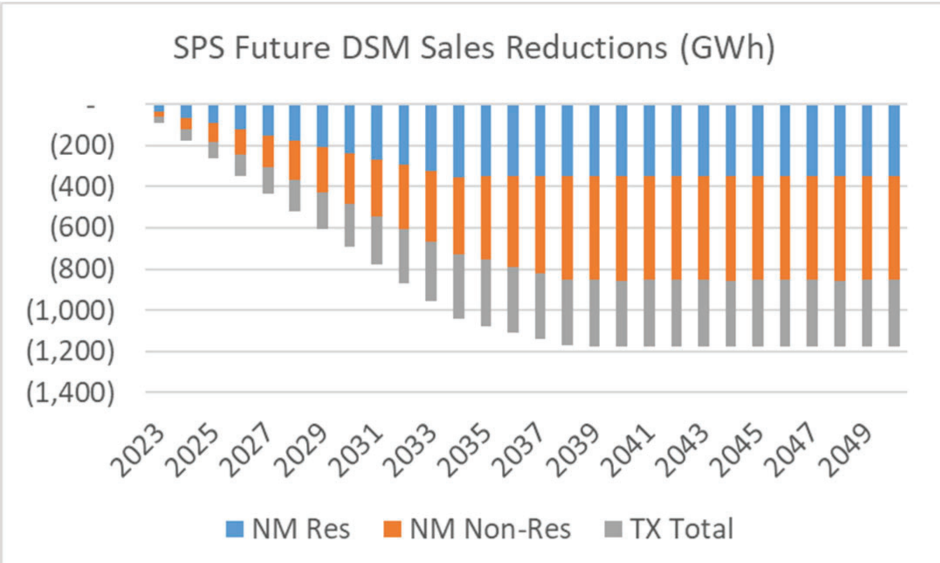
Matthew Tisdale
Strategic Advisor & Facilitator

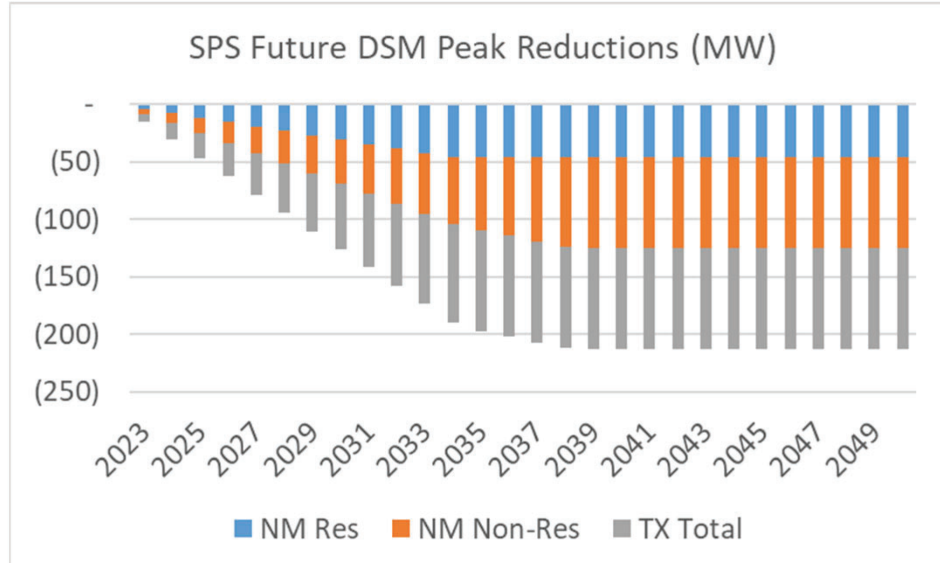
Specific Components of Base Load Forecast

- The Company is currently making forecast adjustments for:
  - Demand Side Management (DSM)
  - Distributed Generation (DG solar) adoption
  - Electric vehicle adoption
  - Demand Response (peak impacts only)

- New load/large customer expansions accounted for in a separate process

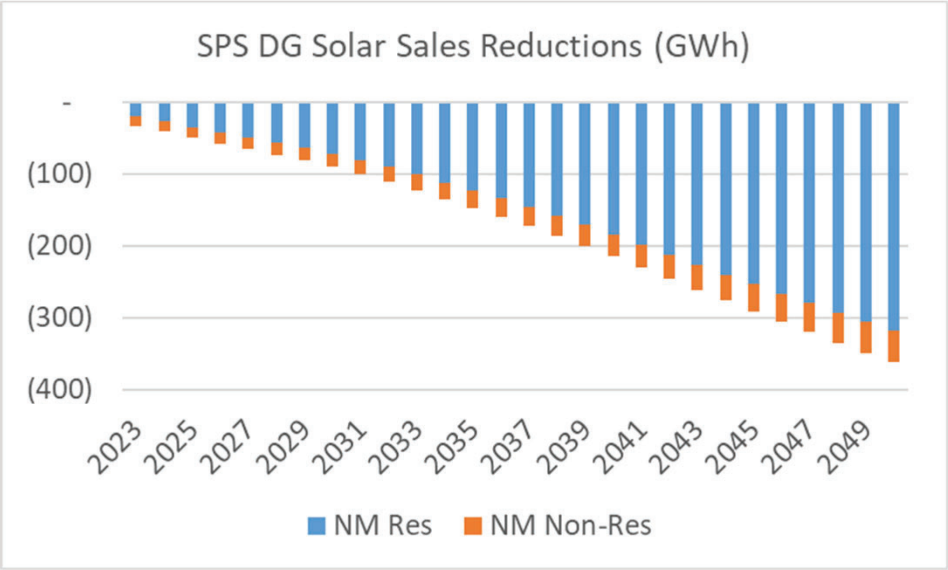
DSM Forecast

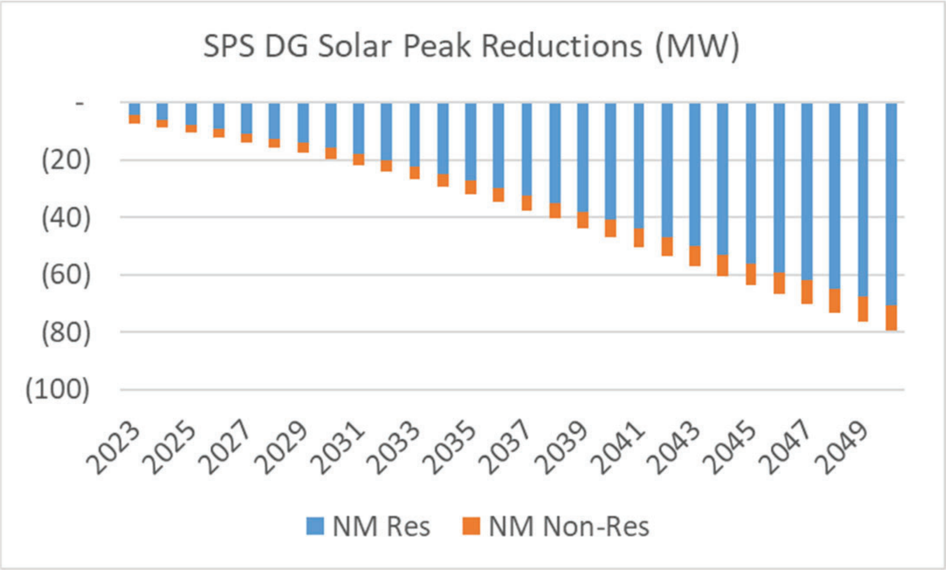




- New Mexico DSM based on filed plans through 2025 and expected achievements 2026 forward
- TX DSM based on filed plans through 2023 and expected achievements 2024 forward
- By late 2030s:
  - DSM reductions to sales approach 1,200 GWh (850 GWh in NM)
  - DSM reductions to peak approach 210 MW (125 MW in NM)

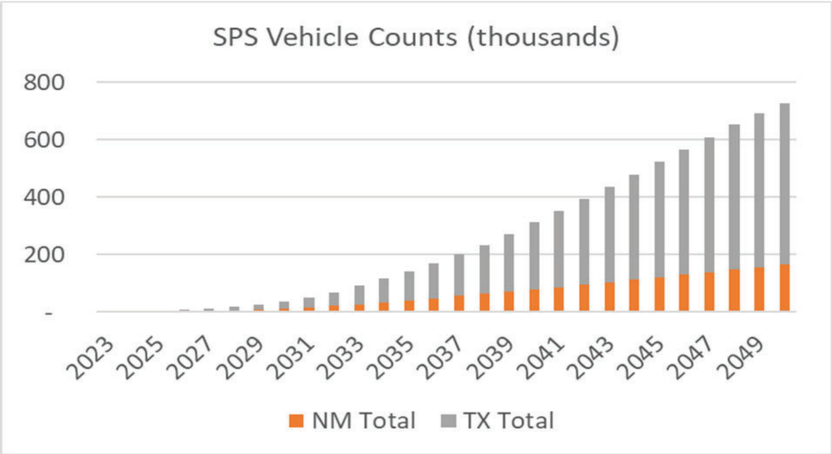
DG Solar Forecast

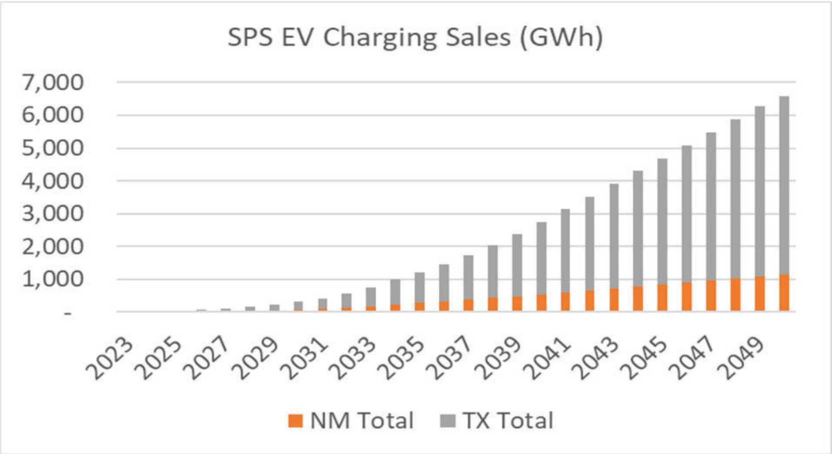


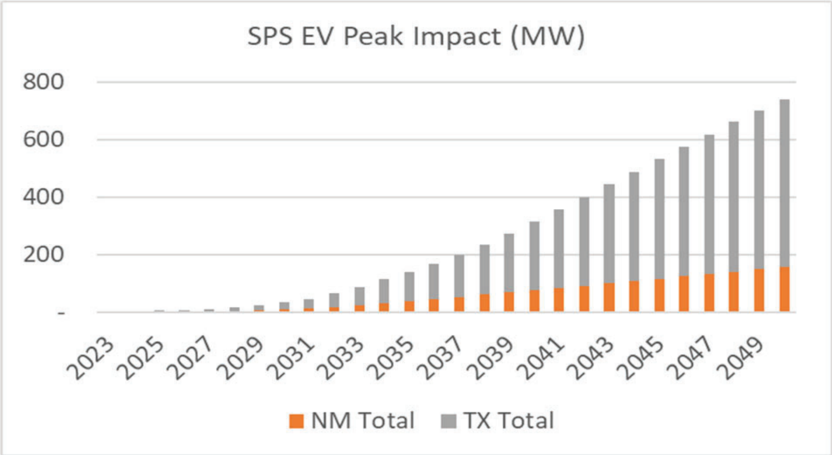


- Adoption forecasts for New Mexico
- Based on Spring 2023 DG adoption forecasts
- By 2050:
  – DG Solar reductions to sales of 360 GWh
  – DSM reductions to peak of 80 MW

Electric Vehicle Adoption Forecast







- Numbers represent the SPS mid-case forecast
  - Higher adoption forecasts to be used in forecast sensitivities
- Includes light, medium, and heavy-duty vehicles
- By 2050:
  - 725k vehicles (165k in NM)
  - 6,500 GWh of charging sales (1,200 GWh in NM)
  - 740 MW peak impact (160 MW in NM)

SPS NM Energy Efficiency and Load Management Programs

Jeremy Lovelady | Regulatory Policy Specalist

June 30, 2023

Overview

- Energy Efficiency & Load Management (EE/LM) Compliance
- Recent EE/LM Plan Filings & Outcomes
- Current DM Offerings in SPS-NMx
- 2023-2025 Approved Program Forecasts
- Upcoming Plan Filings

EE/LM Compliance

- IOUS are required to achieve savings of no less than 5% of 2020 total retail kWh sales to New Mexico customer classes that have the opportunity to participate in calendar year 2025 as a result of energy efficiency and load management programs implemented in years 2021 through 2025.
  - Required Utilities to file Staggered Triennial Plan Filings
  - Required EE/LM funding to be set at 3-5% of customer billing
    - Overage/Underages applied to next Plan Year (PY) Budget (EX: 2023 underspend will increase 2025 approved budget.)
- Programs must be cost effective through the Utility Cost Test.
- Programs must be evaluated every three years by Statewide Evaluator
- Plans and Annual Reports on Xcelenergy.com

Recent EE/LM Plan Filings

- Case No. 19-00140-UT- 1st Triennial Plan Filing
  - Covered PYs 2020-2022
  - Removal of LM offerings
    - Saver's Switch, Thermostats, ICO
  - Addition of Heat Pump Water Heaters
  - Additional Market Research funding for Potential Study
- Case No. 21-00186-UT- 2021 Potential Study
  - Presented Potential Study findings
  - Requested reduced Statutory Goal (246 GWH over 5 years) based on 2020 sales
  - Update PY 2022 program offerings and goals- Inclusion of Residential Thermostat Rewards
- Case No. 22-00142-UT -SPS
  - Covering PYs 2023-2025
  - Program updates- Inclusion of Codes and Standards (Res), Low-Income segment for Res HVAC, Business Thermostat Rewards

Current Demand Management Offerings in SPS-NM

- Residential Thermostat Rewards – The Residential Thermostat Rewards program (previously known as Smart Thermostats) allows customers to enroll their thermostat devices into the cooling and/or heating rewards program and receive demand response incentives in the form of bill credits for doing so. The program also offers a $50 energy efficiency rebate for eligible devices. Customers can participate in the program through the Bring Your Own Thermostat ("BYOT") channel for those who already have a device or through the Direct Install channel, where the Company will provide a device and installation of the device free-of-charge. In exchange for joining the Residential Thermostat Rewards program, customers allow SPS to call cooling and/or heating demand response events and measure the capacity savings of such events. Customers must have electric heat or central AC, an eligible Wi-Fi enabled smart thermostat, and receive electric service from SPS in order to qualify for the program.
- Business Thermostat Rewards – The Business Thermostat Rewards program seeks to reduce system load by using smart thermostats to curtail air conditioning ("AC") unit load during months where air conditioning load is active. The offering is targeted towards the small-to-medium size business customers and will offer to install smart thermostats free of charge through the program contractors for thermostats that control a central AC or rooftop unit. In addition to the direct install channel, the program will have a Bring Your Own Thermostat (BYOT) enrollment channel option for those customers with an eligible smart thermostat already installed and controlling an eligible cooling load. BYOT customers will receive an enrollment incentive in the form of a bill credit upon program eligibility verification and all customers who remain enrolled in the program will receive an annual bill credit for each actively enrolled thermostat.

2022 Performance

Program	2022 Estimated								2022 Reported and Verified							
	Participants	Budget	Peak Demand Savings (Net Customer kW)	Annual Energy Savings (Net Customer kWh)	Peak Demand Savings (Net Generator kW)	Annual Energy Savings (Net Generator kWh)	Utility Avoided Cost	Utility Cost Test	Participants	Expenditures	Peak Demand Savings (Net Customer kW)	Annual Energy Savings (Net Customer kWh)	Peak Demand Savings (Net Generator kW)	Annual Energy Savings (Net Generator kWh)	Utility Avoided Cost	Utility Cost Test
Residential Segment																
Energy Feedback	24,400	$144,485	823	4,586,748	960	5,176,917	$ 191,252	1.32	25,941	$163,714	1,014	3,873,062	1,183	4,371,402	$ 148,552	0.91
Heat Pump Water Heaters	455	$280,000	115	868,585	134	980,344	$ 282,296	1.01	2	$8,180	1	6,074	1	6,856	$ 1,798	0.22
Home Energy Services: Residential and Low Income	3,891	$2,131,716	817	8,004,036	953	9,033,901	$ 4,618,682	2.17	4,045	$2,678,541	706	8,694,037	824	9,812,683	$ 4,787,261	1.79
Home Lighting & Recycling	439,635	$1,534,743	2,577	14,760,530	2,953	16,483,303	$ 7,944,635	5.18	257,161	$1,402,777	1,476	9,164,664	1,722	10,343,865	$ 4,810,153	3.43
Residential Cooling	680	$444,300	319	905,715	372	1,022,252	$ 565,380	1.27	46	$374,601	8	24,225	9	27,342	$ 14,113	0.04
School Education Kits	11,500	$160,046	63	617,300	74	696,727	$ 331,888	2.07	3,205	$187,103	130	613,507	152	692,446	$ 317,975	1.70
Refrigerator Recycling	1,000	$210,208	90	707,753	105	798,818	$ 156,267	0.74	32	$21,328	1	19,099	1	21,556	$ 3,863	0.18
Residential Thermostat Rewards	1,575	$165,625	518	525,125	604	592,692	$ 134,689	0.81	116	$48,674	0	67,119	0	75,755	$ 15,308	0.31
Residential Segment Total	**483,136**	**$5,071,123**	**5,321**	**30,975,792**	**6,156**	**34,784,954**	**$ 14,225,091**	**2.10**	**290,548**	**$4,884,918**	**3,336**	**22,461,787**	**3,893**	**25,351,904**	**$ 10,099,023**	**2.07**
Business Segment																
Business Comprehensive	535	$8,348,676	3,492	25,516,282	3,825	27,466,397	$ 12,204,631	1.46	542	$8,937,909	5,456	39,099,103	5,976	42,087,301	$ 16,251,439	1.82
Business Segment Total	**535**	**$8,348,676**	**3,492**	**25,516,282**	**3,825**	**27,466,397**	**$ 12,204,631**	**1.46**	**542**	**$8,937,909**	**5,456**	**39,099,103**	**5,976**	**42,087,301**	**$ 16,251,439**	**1.82**
Planning & Research Segment																
Consumer Education		$200,000								$241,002						
Market Research		$360,000								$306,630						
Measurement & Verification		$15,000								$944						
Planning & Administration		$350,000								$308,981						
Product Development		$190,000								$105,017						
Planning & Research Segment Total		**$1,115,000**								**$962,574**						
2022 TOTAL	**483,670**	**$14,534,799**	**8,813**	**56,492,075**	**9,981**	**62,251,350**	**$ 26,429,722**	**1.82**	**291,090**	**$14,785,400**	**8,792**	**61,560,890**	**9,869**	**67,439,205**	**26,350,462**	**1.78**

In 2022, SPS achieved verified net electric savings of 8,792 kilowatts ("kW") and 61,560,890 kilowatt-hours ("kWh") at the customer level, for a total cost of $14,785,400 (see Table 1 below.) This equals 109% of SPS's 2022 approved energy goal, while spending 102% of the approved budget. The portfolio was cost-effective with a UCT ratio of 1.78.

Actual Program Collections: $17,723,282.71
PY Underage of ~ $2.4M

2023 Approved Program Forecast

2023	Electric Participants	Electric Budget	Net Customer kW	Net Customer kWh	Net Gen kW	Net Generator kWh	Utility Cost Test Ratio
Business Program							
Business Comprehensive	**376**	**$9,239,402**	**3,937**	**26,473,342**	**4,289**	**28,374,429**	**1.01**
Building Tune-Up	4	$22,000	0	6,885	0	7,380	0.05
Cooling Efficiency	28	$528,000	78	297,264	85	318,610	0.25
Custom Efficiency	44	$5,113,000	1,855	15,280,584	2,021	16,377,904	1.01
Lighting Efficiency	224	$1,154,302	821	4,144,442	894	4,442,060	1.30
Motors & Drives	76	$2,422,100	1,183	6,744,167	1,288	7,228,475	1.05
Business Thermostat Rewards	48	$38,400	133	24,145	0	25,879	0.11
Commercial Codes & Standards	0	$14,797	0	0	0	0	N/A
Business Program EE Total	**424**	**$9,292,599**	**4,070**	**26,497,488**	**4,289**	**28,400,308**	**1.00**
Residential Program							
Home Energy Insights	34,365	$200,300	1,100	6,056,146	1,284	6,835,379	1.05
Heat Pump Water Heaters	455	$310,800	156	1,179,698	182	1,331,487	1.01
Home Energy Services - Residential and Low Income	**8,953**	**$2,515,733**	**656**	**9,666,110**	**765**	**10,909,831**	**1.32**
Residential Home Energy Services	853	$1,240,759	285	4,377,490	332	4,940,734	1.06
Low Income Home Energy Services	850	$1,209,394	332	4,912,035	387	5,544,057	1.51
Low Income Energy Savings Kit	7,250	$65,580	39	376,585	46	425,039	2.42
Home Lighting & Recycling	327,420	$1,425,627	928	9,502,792	1,078	10,589,014	1.87
HVAC - Residential and Low Income	**672**	**$778,331**	**236**	**1,095,971**	**276**	**1,236,988**	**0.62**
Residential HVAC	577	$399,331	135	495,975	157	559,791	0.55
Low Income HVAC	95	$379,000	102	599,997	119	677,197	0.70
School Education Kits	3,498	$217,365	95	798,312	111	901,029	1.25
Refrigerator Recycling	750	$158,148	41	503,551	48	568,342	0.59
Residential Codes & Standards	595	$91,894	287	47,397	335	53,495	2.71
Residential Thermostat Rewards	1,250	$207,159	592	514,642	0	580,860	0.49
Residential Program EE Total	**377,958**	**$5,905,357**	**4,092**	**29,364,617**	**4,079**	**33,006,423**	**1.30**
Planning and Research							
Consumer Education	0	$250,000	0	0	0	0	N/A
Market Research	0	$150,000	0	0	0	0	N/A
Measurement & Verification	0	$230,000	0	0	0	0	N/A
Planning & Administration	0	$420,000	0	0	0	0	N/A
Product Development	0	$190,000	0	0	0	0	N/A
EE Planning and Research Total	**0**	**$1,240,000**	**0**	**0**	**0**	**0**	**N/A**
PORTFOLIO TOTAL	**378,382**	**$16,437,956**	**8,162**	**55,862,105**	**8,368**	**61,406,732**	**1.04**

2024 Approved Program Forecast

2024	Electric Participants	Electric Budget	Net Customer kW	Net Customer kWh	Net Gen kW	Net Generator kWh	Utility Cost Test Ratio
Business Program							
Business Comprehensive	**400**	**$10,188,288**	**4,239**	**28,616,891**	**4,618**	**30,671,909**	**1.01**
Building Tune-Up	5	$29,200	0	6,885	0	7,380	0.04
Cooling Efficiency	30	$549,100	82	306,233	89	328,224	0.26
Custom Efficiency	51	$5,707,000	1,987	16,245,584	2,164	17,412,201	0.99
Lighting Efficiency	238	$1,355,088	938	4,985,654	1,022	5,343,680	1.34
Motors & Drives	76	$2,547,900	1,232	7,072,536	1,342	7,580,424	1.07
Business Thermostat Rewards	112	$51,200	333	49,155	0	52,685	0.17
Commercial Codes & Standards	1	$15,264	101	101,953	110	109,274	7.47
Business Program EE Total	**513**	**$10,254,752**	**4,672**	**28,767,999**	**4,727**	**30,833,869**	**1.02**
Residential Program							
Home Energy Insights	31,880	$203,685	1,018	5,629,748	1,188	6,354,117	0.86
Heat Pump Water Heaters	500	$335,800	171	1,298,073	200	1,465,093	1.05
Home Energy Services - Residential and Low Income	**9,506**	**$2,308,124**	**623**	**9,099,656**	**727**	**10,270,492**	**1.36**
Residential Home Energy Services	826	$1,136,188	274	4,165,836	320	4,701,846	1.12
Low Income Home Energy Services	830	$1,098,501	307	4,529,341	358	5,112,123	1.55
Low Income Energy Savings Kit	7,850	$73,435	42	404,479	48	456,523	2.35
Home Lighting & Recycling	238,099	$1,257,761	690	7,070,027	802	7,877,781	1.63
HVAC - Residential and Low Income	**739**	**$913,631**	**266**	**1,403,711**	**310**	**1,584,324**	**0.67**
Residential HVAC	609	$403,631	145	526,316	169	594,036	0.60
Low Income HVAC	130	$510,000	120	877,395	141	990,288	0.73
School Education Kits	3,523	$215,000	96	804,208	112	907,684	1.30
Refrigerator Recycling	1,000	$217,457	55	670,677	65	756,972	0.58
Residential Codes & Standards	618	$96,098	353	79,818	411	90,088	3.53
Residential Thermostat Rewards	1,635	$207,780	1,591	566,415	0	639,295	0.52
Residential Program EE Total	**287,500**	**$5,755,337**	**4,863**	**26,622,332**	**3,814**	**29,945,845**	**1.25**
Planning and Research							
Consumer Education	0	$250,000	0	0	0	0	N/A
Market Research	0	$150,000	0	0	0	0	N/A
Measurement & Verification	0	$245,000	0	0	0	0	N/A
Planning & Administration	0	$433,944	0	0	0	0	N/A
Product Development	0	$196,308	0	0	0	0	N/A
EE Planning and Research Total	**0**	**$1,275,252**	**0**	**0**	**0**	**0**	**N/A**
PORTFOLIO TOTAL	**288,013**	**$17,285,341**	**9,535**	**55,390,332**	**8,541**	**60,779,714**	**1.02**

2025 Approved Program Forecast

2025	Electric Participants	Electric Budget	Net Customer kW	Net Customer kWh	Net Gen kW	Net Generator kWh	Utility Cost Test Ratio
Business Program							
Business Comprehensive	**425**	**$10,803,570**	**4,344**	**29,321,714**	**4,732**	**31,427,347**	**1.01**
Building Tune-Up	6	$36,500	0	6,885	0	7,380	0.03
Cooling Efficiency	32	$561,600	86	316,028	94	338,723	0.28
Custom Efficiency	48	$6,001,000	1,948	15,994,101	2,122	17,142,659	0.95
Lighting Efficiency	263	$1,465,470	1,004	5,480,328	1,094	5,873,878	1.40
Motors & Drives	76	$2,739,000	1,305	7,524,372	1,422	8,064,707	1.10
Business Thermostat Rewards	186	$64,300	582	72,010	0	77,181	0.20
Commercial Codes & Standards	1	$12,796	199	201,616	217	216,094	18.89
Business Program EE Total	**612**	**$10,880,666**	**5,125**	**29,595,341**	**4,949**	**31,720,622**	**1.03**
Residential Program							
Home Energy Insights	40,358	$218,393	1,276	6,974,763	1,489	7,872,193	1.04
Heat Pump Water Heaters	550	$353,800	188	1,429,790	220	1,613,758	1.14
Home Energy Services - Residential and Low Income	**9,559**	**$2,084,893**	**580**	**8,285,370**	**676**	**9,351,434**	**1.41**
Residential Home Energy Services	803	$1,038,020	260	3,849,478	303	4,344,784	1.17
Low Income Home Energy Services	806	$973,089	277	4,025,326	324	4,543,258	1.60
Low Income Energy Savings Kit	7,950	$73,784	42	410,566	49	463,392	2.46
Home Lighting & Recycling	164,290	$1,153,811	493	5,054,937	573	5,632,076	1.34
HVAC - Residential and Low Income	**783**	**$990,288**	**267**	**1,560,972**	**312**	**1,761,820**	**0.70**
Residential HVAC	643	$413,288	157	558,437	183	630,290	0.66
Low Income HVAC	140	$577,000	110	1,002,535	129	1,131,529	0.72
School Education Kits	3,548	$212,969	96	810,104	112	914,339	1.36
Refrigerator Recycling	1,250	$276,497	68	836,733	79	944,393	0.59
Residential Codes & Standards	635	$89,131	307	71,543	358	80,748	3.61
Residential Thermostat Rewards	2,145	$231,420	2,516	618,154	0	697,690	0.51
Residential Program EE Total	**223,118**	**$5,611,202**	**5,791**	**25,642,365**	**3,818**	**28,868,452**	**1.20**
Planning and Research							
Consumer Education	0	$250,000	0	0	0	0	N/A
Market Research	0	$150,000	0	0	0	0	N/A
Measurement & Verification	0	$275,000	0	0	0	0	N/A
Planning & Administration	0	$448,351	0	0	0	0	N/A
Product Development	0	$202,825	0	0	0	0	N/A
EE Planning and Research Total	**0**	**$1,326,176**	**0**	**0**	**0**	**0**	**N/A**
PORTFOLIO TOTAL	**223,730**	**$17,818,044**	**10,916**	**55,237,706**	**8,768**	**60,589,074**	**1.00**

Upcoming Plan Filings

- Update Filing for Energy Efficiency/ Load Management
  - ~$2.4M PY Underage for PY 2022 (impacts 2024)
  - Drop Tariff/Customer Refund for 2024 & 2025?
  - Update Avoided Cost for 2024 & 2025(check with Ben because this could help UCT test)
  - Proposal of an ICO tariff to launch in 2024.
  - Increase Business Comprehensive Spending and goals to alleviate customer backlog.

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EE/LM Compliance

- IOUS are required to achieve savings of no less than 5% of 2020 total retail kWh sales to New Mexico customer classes that have the opportunity to participate in calendar year 2025 as a result of energy efficiency and load management programs implemented in years 2021 through 2025.
  - Required Utilities to file Staggered Triennial Plan Filings
  - Required EE/LM funding to be set at 3-5% of customer billing
    - Overage/Underages applied to next Plan Year (PY) Budget (EX: 2023 underspend will increase 2025 approved budget.)
- Programs must be cost effective through the Utility Cost Test.
- Programs must be evaluated every three years by Statewide Evaluator
- Plans and Annual Reports on Xcelenergy.com

Current Demand Management Offerings in SPS-NM

- Residential Thermostat Rewards – The Residential Thermostat Rewards program (previously known as Smart Thermostats) allows customers to enroll their thermostat devices into the cooling and/or heating rewards program and receive demand response incentives in the form of bill credits for doing so. The program also offers a $50 energy efficiency rebate for eligible devices. Customers can participate in the program through the Bring Your Own Thermostat ("BYOT") channel for those who already have a device or through the Direct Install channel, where the Company will provide a device and installation of the device free-of-charge. In exchange for joining the Residential Thermostat Rewards program, customers allow SPS to call cooling and/or heating demand response events and measure the capacity savings of such events. Customers must have electric heat or central AC, an eligible Wi-Fi enabled smart thermostat, and receive electric service from SPS in order to qualify for the program.
- Business Thermostat Rewards – The Business Thermostat Rewards program seeks to reduce system load by using smart thermostats to curtail air conditioning ("AC") unit load during months where air conditioning load is active. The offering is targeted towards the small-to-medium size business customers and will offer to install smart thermostats free of charge through the program contractors for thermostats that control a central AC or rooftop unit. In addition to the direct install channel, the program will have a Bring Your Own Thermostat (BYOT) enrollment channel option for those customers with an eligible smart thermostat already installed and controlling an eligible cooling load. BYOT customers will receive an enrollment incentive in the form of a bill credit upon program eligibility verification and all customers who remain enrolled in the program will receive an annual bill credit for each actively enrolled thermostat.

Xcel Energy New Mexico DSM Potential Study 2021

Prepared for:

Xcel Energy New Mexico

Submitted by:

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July 12, 2021

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Introduction and Background

Xcel Energy retained Guidehouse to develop an estimate of the potential for energy efficiency for the company's New Mexico service territory over a nine-year time horizon from 2021 to 2030. This study focused on energy efficiency potential only. Guidehouse conducted primary research to collect New Mexico-specific customer and measure data to inform the modeling inputs and modeled the technical, economic, and achievable potential for energy efficiency using its proprietary DSMSim™ model. Guidehouse calculated gross achievable energy efficiency potential for two scenarios, including a Maximum Achievable scenario (i.e., the reflection of the savings possible through unconstrained budgets, greatly heightened program activity and incentives) and a Reference scenario (i.e., the reflection of the primary and secondary data collected on the market for energy efficient technologies in Xcel Energy's New Mexico service territory).

The study data and analysis will inform Xcel Energy in the development of future DSM Plans. Throughout this study, Guidehouse sought regular input and feedback from both internal and external stakeholders, who provided important market knowledge and industry expertise for producing a robust final study. Table 1 summarizes the various elements of the project scope.

Table 1 Summary of Project Scope

Forms of Energy	Electricity
Type of Potential	Energy Efficiency Technical, Economic, Achievable
Sectors	Residential, Commercial, and Industrial (C&I)
Climate	Single Weather Zone
Time Horizon	2021-2030 (9 years)

Report Organization

The report is organized as follows:

- Section 1 provides an overview of **Customer Characterization** developed and used in the study. This section provides the breakdown of customers by sector and segment.
- Section 2 provides an overview of the **Primary Research** conducted for collecting customer and measure data that were used as inputs in the model.
- Section 3 discusses the **Energy Efficiency Measure Characterization**, including key parameters.
- Section 4 presents the **Energy Efficiency Technical Potential Forecast** for energy efficiency measures, including a summary of results by sector and end use.
- Section 5 provides the **Energy Efficiency Economic Potential Results** for energy efficiency measures, including a summary of results by sector and end use.
- Section 6 presents the **Energy Efficiency Achievable Potential Results by Scenario (Max Achievable and Reference)** for energy efficiency measures, including a summary

of results by sector, end use, customer segment, and measure, as well as cost effectiveness test results.

The report also includes the following six appendices and three attachments:

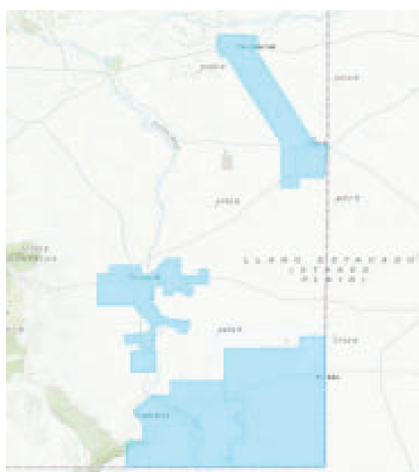
- Appendix A. Customer Characterization
- Appendix B. Primary Research
- Appendix C. Energy Efficiency Measure Characterization
- Appendix D. Energy Efficiency Technical Potential
- Appendix E. Energy Efficiency Economic Potential
- Appendix F. Energy Efficiency Achievable Potential
- Attachment A Measure Inputs
- Attachment B Results FiguresAndTables_Max Achievable
- Attachment C Results FiguresAndTables_Reference Scenario

Note: The attachments are provided at the end of the report in a separate section.

1. Customer Characterization

This section documents Guidehouse's characterization of Xcel Energy's residential and commercial and industrial (C&I) customers in the New Mexico territory (see Figure 1-1). As part of this work, Guidehouse proposed a customer segmentation scheme based on building type, income level (for residential customers), and industry (for C&I customers). Appendix A, "Customer Breakout by City" includes a detailed customer breakout by city and sector (residential and commercial).

Figure 1-1. Xcel Energy's New Mexico Territory



Source: Ventyx Energy Velocity Suite

1.1 Base Case Forecast

Guidehouse developed a base case forecast of electric sales over the study period in Xcel Energy's New Mexico service territory. The team's approach included the segmentation of sales by housing or building type and income.

In general, Guidehouse used Xcel Energy-specific data wherever possible and supplemented that data with other sources, such as Energy Information Administration (EIA) data. This approach resulted in the use of primary data collection to supplement the available secondary data as required. Appendix A, "Secondary Sources for Customer Characterization," provides the secondary sources used during the base year forecast.

1.2 Base Case Forecast Approaches and Sources

To estimate the demand side management (DSM) potential within Xcel Energy's New Mexico territory, Guidehouse requested sales and customer forecasts without the impact of DSM programs from Xcel Energy. Guidehouse then developed projections of housing and commercial building stocks, based on Xcel Energy's long-term sales forecasts and other information, such as EIA data.

Guidehouse modeled the DSM potential based on these resulting stocks and the changing proportion of new and existing buildings. In each sector, new construction savings opportunities were modeled as a function of forecasted new building stock and energy sales.

Proper segmentation reflects the minimum number of customer groups able to capture the heterogeneity in customer energy usage patterns that is meaningful for the study's goals. Guidehouse worked with Xcel Energy to determine this segmentation based on current energy efficiency measures, planned future offerings, and data available to categorize customers. We also confirmed that savings, cost, and adoption of energy efficiency measures are likely to be similar within each segment.

Guidehouse divided customers into segments with similar patterns of energy use and efficiency opportunities. Table 1-1 shows the segmentation used for this study:

- Guidehouse divided residential customers into five segments, based on the type of structure and income level (single family, multifamily, single family low income, and multifamily low income, manufactured homes). Appendix A, "Residential Customer Characterization," includes more information about the residential customers.

- The team divided the commercial sector into 11 segments and divided the industrial sector into two segments, including agriculture and manufacturing. Appendix A, "Commercial & Industrial Customer Characterization," includes more information about the C&I customers.

Table 1-1. Customer Segments by Sector

Single Family Office Agriculture

Multifamily Retail Manufacturing Single Family - Low Income Restaurant

Multifamily - Low Income Grocery

Manufactured Homes Warehouse

School

College

Health

Other

Lodging

Mining/Oil & Gas Extraction

1.3 Base Year Calibration

This section discusses some of the trends Guidehouse observed in Xcel Energy's sales and customer forecast, as well as the impacts these trends may have on the Potential Study results. The electric sales forecast Xcel Energy provided reflects a spike in electric sales growth from

2021-2024 for C&I customers with a slower rate of growth from 2025-2030. In the residential sector, Xcel Energy is projecting a 0% growth in sales through 2024 and a 1% growth from

2025-2030. Guidehouse assumes the growth in sales is correlated with new construction in the territory, so the potential from new construction efficiency measures is also correlated with the sales growth projections.

2. Primary Research

This section outlines the approach and results of Guidehouse's primary data collection activities, which provided quality inputs into the potential model to enhance the accuracy of the technical, economic, and achievable potential. Guidehouse focused primary data collection on three areas: equipment density, efficient equipment saturation, and customer willingness to pay for efficient equipment.

2.1 Primary Data Collection Approach

Energy efficiency potential follows a power law: a small number of end uses and segments typically deliver the majority of energy efficiency savings. To maximize the impact of primary data collection, Guidehouse focused primary research activities by oversampling the customer segments and end uses shown in Table B-1 in Appendix B, "Approach to Primary Data Collection,". Guidehouse used a robust sampling approach to produce results at a confidence and precision level of 90/10 at the sector and high priority end use level, while also targeting a confidence and maximum precision of 90/20 for each stratum in the residential sector and 90/30 for each building type and priority end use combination in the C&I sector. Appendix B, "Sampling Approach" provides A detailed explanation of our sampling progress to develop the sample target.

In addition to collecting data for all segments and end uses, Guidehouse focused on characterizing the density, saturation, and customer willingness to pay for specific measures within the priority customer segment/end use combinations for primary research (see Table 1-1). Our data collection method for these characteristics was a virtual audit administered through a Qualtrics[1] web surveying platform. This virtual audit guided respondents through how to provide information on selected end uses, including quantity, type, and in some cases photos of equipment nameplates or other helpful images. The virtual audits included general questions on building characteristics to validate segmentation and fill in any gaps in segment-level parameters. Guidehouse collected data on customer willingness to pay for energy efficient equipment according to Guidehouse's standard practices for informing discrete choice logit and simple payback period modeling.

The survey design collected density data for all the prioritized end uses, but in an effort to reduce the time burden on survey respondents, it limited detailed questions about saturation, characterization, and willingness to pay to the priority segment/end use combinations Table 2-1 identified, plus one to three additional end uses randomly selected for each respondent. The following table illustrates the approach for each segment. All surveys included general building characteristics (e.g., building square footage, age, etc.) regardless of the selected end uses.

[1] Qualtrics, “Experience Design and Experience Improvement,” https://www.qualtrics.com/.

Space

Table 2-1. Survey Topics by Segment and End Use

Water

Compressed

Fans,
Blowers,

Residential:

Cooling and
Heating
Hot
Air
Motors, Drives and
Pumps
Process Cooling

Single Family and
Multifamily

Residential:

◎ ◎ □ □ □ □ □ □ □ □

Manufactured ◎ □ □ □ □ □ □ □ □ □ Commercial:

Office ◎ □ □ □ □ □ □ □ □ □ Commercial:

Retail ◎ □ □ □ □ □ □ □ □ □

Commercial:
Manufacturing
and
Mining/Oil & Gas
Extraction

C&I: All Other

□ □ □ □ □ □ □ □ ◎ □

Segments □ □ □ □ □ □ □ □ □ □

◎ **Priority end use:** All respondents received saturation, characterization, and willingness to pay questions about this end use. □ **Included end use:** Respondents received basic questions on equipment count on all included end uses, as well as detailed questions on randomly selected end uses present at respondent's building. To keep surveys to a reasonable length, the number of randomly selected end uses varied based on the number of measures included within the end use.

□ **Excluded end use:** Respondents in this segment did not receive any questions about this end use.

2.2 Residential and C&I Data Collection Summary

Through the data collection process, Guidehouse achieved 93% and 61% completes for the residential and commercial sectors, respectively. Guidehouse recognized the low response rates for the residential and commercial surveys response rates (9.9% and 4.2%, respectively), which were likely due to two primary factors: screened out contacts and the COVID-19 pandemic. The residential survey achieved a total of 337 completes and 315 partial completes. The commercial survey received a total of 85 completes and 129 partial completes. Table 2-2 includes the response summary of the residential and commercial surveys. A detailed description of the methodology, customer communication and response summary can be found in Appendix B, Residential Data Collection and Commercial & Industrial Customer Characterization sections.

Table 2-2. Residential and Commercial Response Rate Summary

Screen Outs	Partial Completes Partial	Completes (Density) Total	Completes Completes (Including All	Partial completes) Response	Total Rate Percent of Target	Achieved

Residential 700 51 145 170 337 652 9.9% 93% C&I 350 79 111 18 85 214 4.2% 61%

3. Energy Efficiency Measure Characterization

Guidehouse characterized 88 energy efficiency measures across Xcel Energy New Mexico's residential and C&I sectors. The team prioritized measures for inclusion based on their likelihood to have high savings in Xcel Energy New Mexico's territories and their current market availability and cost-effectiveness. Xcel Energy New Mexico's engineering team reviewed the list in detail and provided feedback that was incorporated to finalize the measure list for this study. Guidehouse made this list available for review by stakeholders on November 9, 2021.

3.1 Energy Efficiency Measure List

Guidehouse and Xcel Energy New Mexico developed a thorough list of energy efficiency measures for this study. Guidehouse created the list based on measures in the New Mexico Technical Reference Manual (TRM), existing Xcel Energy programs, other North American TRMs and utility programs, and emerging technologies. For the purposes of this study, Guidehouse defines emerging technologies as known or existing technologies that have a reasonable chance of customer adoption in the frame of the study, and that are experiencing rapidly changing costs or efficiencies though economies of scale or R&D. Guidehouse did not include a generic future emerging technologies measure that would attempt to capture potential savings from technologies not ready for the market. This list was reviewed by Xcel Energy's program team as well as external stakeholders. We considered input from stakeholders and determined that the suggestions for new measures or adjustments to existing measures were already included in the measure list or were not feasible to analyze within the scope of this study. Guidehouse worked with Xcel Energy New Mexico to finalize the measure list and confirm it contained technologies viable for future DSM program planning activities.

Table A-2 and Table A-3 in Appendix A, "Residential Customer Characterization" provide the baseline and efficient description of all measures included in this study. This list does not include all the applicable segments for each measure. It should be assumed that each measure was characterized for all segments unless the measure itself has a niche application. For example, occupancy sensors for common areas were limited to multifamily residential segments.

3.2 Energy Efficiency Measure Characterization Key Parameters

The measure characterization effort included defining more than 50 individual parameters for each measure included in this study. These parameters include measure-specific parameters such as energy savings, cost, and measure life. It also included market-specific parameters such as measure saturation, density, suitability and more. Table A-4 in Appendix A defines 14 key parameters and how these items impact technical and economic potential savings estimates. Where appropriate, Guidehouse used primary data collected via remote audits of Xcel Energy's New Mexico customers to inform the measure parameters.

3.3 Energy Efficiency Measure Characterization Approaches and Sources

This section provides approaches and sources for the main measure characterization variables. Table 3-1 includes sources of data accessed for measure characterization and is sorted by hierarchical data preference. The New Mexico TRM and Xcel Energy New Mexico program data were the primary sources for savings and cost. Equipment density and efficient saturation

values were informed by the primary data collection conducted by Guidehouse and by Xcel Energy New Mexico's previous surveys. Where primary data was not available, baseline studies from other territories were used as supplements. Appendix C, "Key Parameter Approach and Sources," details the approach and sources used for characterizing energy savings, incremental cost, density, and saturation values.

Table 3-1. Sources for Measure Characterization Inputs

• 2020 Lighting Measure Update to the New Mexico Technical Resource Manual (TRM)

	• New Mexico Technical Reference Manual for the Calculation of Energy Efficiency Savings April 17, 2019
Measure Costs, Measure Life, Energy Savings	• Guidehouse measure database and previous potential studies • US DOE Appliance Standards and Rulemakings supporting documents • Primary research conducted as a part of this study (see Appendix B, "Primary Research") • Xcel Energy (New Mexico)-Home Energy Use Study 2018 • Xcel Energy (New Mexico)-Home Energy Use Study 2020 • US EIA Residential Energy Consumption Survey (RECS) • US EIA Commercial Building Energy Consumption Survey (CBECS) • US EIA Manufacturing Energy Consumption Survey • US Census American Community Survey • US Census Annual Economic Survey • Guidehouse baseline studies from other jurisdictions
Fuel Type Multipliers, Density, Baseline Initial Saturation	• Xcel Energy New Mexico Technical Assumptions File • Xcel Energy New Mexico Program data • Engineering analyses • Other TRMs • 2019 Xcel Energy Colorado DSM Potential Study

4. Energy Efficiency Technical Potential

This study defines technical potential as the total energy savings available, assuming that all installed measures being considered can immediately be replaced with the efficient measure or technology—wherever technically feasible—regardless of the cost, market acceptance, or whether a measure has failed and must be replaced.

4.1 Approach to Estimating Technical Potential

Guidehouse used its DSMSim™ model to estimate the technical potential for demand side resources in Xcel Energy's New Mexico service territory. DSMSim™ is a bottom-up technology diffusion and stock-tracking model implemented using a system dynamics framework.[2]

Guidehouse assumes that the baseline for the technical potential of a given measure, in a given year, is the baseline applicable in that year after adjusting for codes and standards changes. The calculation of technical potential in this study differs depending on the assumed measure replacement type. Technical potential is calculated on a per-measure basis and includes estimates of savings per unit, measure density (e.g., quantity of measures per home), and total building stock in the service territory. The study accounts for three replacement types, where potential from retrofit and replace-on-burnout measures are calculated differently from potential for new measures. The formulae used to calculate technical potential by replacement type are shown in Appendix D, "Approach to Technical Potential and Replacement Types."

4.1.1 Competition Groups

Guidehouse's modeling approach recognizes that some efficient technologies will compete in the calculation of potential. The study defines competition as an efficient measure competing for the same installation as another efficient measure. For instance, a consumer has the choice to install an efficient storage or tankless water heater, a heat pump water heater, or a solar thermal water heater, but not all three. These efficient technologies compete for the same installation. A detailed explanation of the calculation of potential for measures in a competition group can be found in Appendix D, "Competition Groups."

4.2 Technical Potential Results

This section provides the technical savings potential calculated through DSMSim™ by sector. The Attachment A: Measure Inputs provides the associated data.

Figure 4-1 shows the total technical savings potential split by sector for electric energy and electric demand. The allocation of technical potential among sectors is generally comparable with the allocation of forecasted sales among sectors, with commercial and residential sectors contributing the greatest electric technical potential.

Technical potential grows over time due to new stock additions to the territory. The increase in potential in the commercial sector from 2021-2026 corresponds with an increase in projected sales during that time period. The technical potential in the residential sector remains relatively

[2] Sterman, John D. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin McGraw-Hill. 2000 for detail on System Dynamics modelling. Also see http://en.wikipedia.org/wiki/System_dynamics for a high level overview.

flat during the time horizon of the study, corresponding to minimal new construction or building stock turnover and so a flat sales projection.

Comparing electric energy with electric demand, demand savings largely track energy savings for all sectors. Xcel Energy New Mexico is a summer peaking utility, with peak demand occurring in July.

Figure 4-1. Electric Energy (GWh/year) and Demand (MW) Technical Savings Potential by Sector

1,200 1,000 800
600
400
200
0

2022
2023
2024
2025
2026
2027
2028

400 300 200 100 0

Commecial Industrial
Residential

Commecial Industrial
Residential

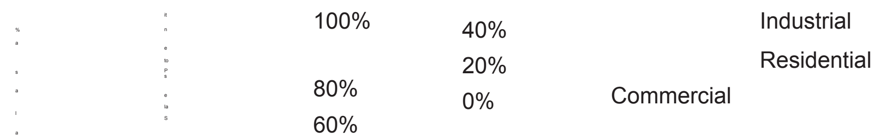
Source: Guidehouse Analysis 2021

Figure 4-2 shows the electric savings potential for all sectors as a percentage of that sector's total forecasted sales. The percentages reflect a weighted average savings among measures applicable to existing building stock and new building stock constructed during the study period. As such, the slight downward-sloping residential and commercial electric sector indicates that electric savings opportunities (on a percentage of sales basis) are larger in existing construction than new construction. This perspective shows that the residential sector has the greatest technical potential as a percentage of sales for electric savings and demand savings. The mix of measures being considered within each sector is contributing to this. Additionally, building envelope and HVAC measures are driving the high potential for energy savings, and especially demand savings, in the residential sector. Guidehouse's primary research showed that the HVAC equipment and building envelope components (windows, insulation, air leakage, etc.) in the existing residential building stock is generally inefficient and offers significant potential for savings. The residential and commercial sectors' electric savings as a percentage of sales decreases slightly over time due to the changing mix of new and existing building stock, although the technical potential grows in absolute terms.

Figure 4-2. Electric Energy and Demand Technical Savings Potential by Sector as a Percent of Sector Sales (%)

80%
60%
40%
20%
0%

Commercial
Industrial
Residential



Source: Guidehouse Analysis 2021

Appendix D, "Technical Potential Results" provides detailed results by segment and shows the top 40 measures contributing to technical potential.

5. Energy Efficiency Economic Potential

This section describes the economic savings potential, which is potential that meets a prescribed level of cost-effectiveness, available in Xcel Energy's New Mexico service territory. It explains Guidehouse's approach for calculating economic potential then presents the results for economic potential in the territory.

5.1 Approach to Estimating Economic Potential

Economic potential is a subset of technical potential, using the same assumptions regarding immediate replacement and interactive effects as in technical potential, but including only those measures that have passed the benefit-cost test chosen for measure screening (in this case, the total resource cost [TRC] test and utility cost test [UCT per Xcel Energy's guidance). The TRC and UCT ratio for each measure is calculated each year and compared against the measure-level ratio screening threshold of 1.0. A measure with a TRC or UCT ratio greater than or equal to 1.0 is a measure that provides monetary benefits greater than or equal to its costs. If a measure's TRC or UCT meets or exceeds the threshold, it is included in the economic potential.

The TRC test is a cost-benefit metric that measures the net benefits of energy efficiency measures from the combined stakeholder viewpoint of the utility (or program administrator) and the customers. The UCT is a cost-benefit metric that measures net benefits of energy efficiency from the viewpoint of the utility (or program administrator). A detailed explanation of algorithms and the approach for calculating TRC and UCT ratios is provided in Appendix E, "Economic Potential TRC and UCT"

To focus the efforts of the study on the measures most likely to contribute achievable potential, Guidehouse and Xcel Energy developed a measure list based on Xcel Energy's experience managing portfolios and Guidehouse's experience estimating potential, while considering New Mexico-specific characteristics.

5.2 Economic Potential Results

This section provides the economic potential calculated through DSMSim™ by sector. Figure 5-1 shows economic electric energy and electric demand savings potential across all sectors. On average, 51% of electric energy savings and 57% of electric demand savings potential pass the economic screening process across the study period. In the residential sector, 57% of electric energy savings pass the screening; in the commercial sector, 46% pass; and in the industrial sector, 92% pass the screening. This is due to a larger number of measures in the residential sector with high technical potential such as high efficiency HVAC measures, heat pump dryers, and building envelope measures (e.g., added attic and wall insulation) failing the cost test screen.

Figure 5-1. Electric Energy (GWh/year) and Demand (MW) Economic Potential by Sector

200 0

800

600

400

250
200
150
100 50
0

Source: Guidehouse Analysis 2021

Commercial Industrial Residential

Commercial Industrial

Residential

Bumps in select years of the economic potential occur whenever one or more measures cross the cost-effectiveness threshold in one or more customer segments. Marginally economic measures having TRC or UCT ratios slightly less than 1.0 at the beginning of the study period can become economically feasible as avoided costs—which escalate at a faster rate than equipment and operation and maintenance costs—increase throughout the study the period. This is especially evident between 2027 and 2030, when avoided capacity costs increase substantially versus previous years. For example, in the commercial sector, the bump in between 2027 and 2029 is mainly a result of high efficiency central heap pumps and rooftop units with demand controls screening for the first time, coinciding with a large jump in avoided capacity costs in 2028.

Technical and economic energy potential are similar in the industrial sector (economic potential is 92% of technical potential) because the measures included in the study are selected on the premise that they are or could become reasonably attractive to industrial customers and have some likelihood of adoption given a wide range of market environments.

Figure 5-2 shows the economic electric energy and electric demand savings potential as a percentage of sales or demand, respectively. The most noteworthy trend in economic potential as a percent of sales is that, like technical potential as a percent of sales, it is flat over time. This occurs as the growth in sales outpaces the growth of potential. There are some exceptions to this pattern, such as commercial electric energy potential, where the addition of high efficiency central heat pumps in 2028 and the addition of rooftop units with demand controls in 2029 add significantly to the economic potential.

Figure 5-2. Electric Energy and Demand Economic Potential by Sector as a Percent of Sector Consumption (%)

10%
0%

50%
40%
30%
20%

Commercial
Industrial
Residential

60%
50%
40%
30%
20%
10%
0%
70%

Commercial
Industrial
Residential

Source: Guidehouse Analysis 2021

- Appendix E, “Economic Potential Results,” provides detailed results by segment and shows the top 40 measures contributing to technical potential. All the measure-level data inputs are provided as an attachment to this report (Attachment B Results FiguresAndTables_Max Achievable).

6. Energy Efficiency Achievable Potential

Guidehouse calculated gross achievable energy efficiency potential for two scenarios, including a Maximum Achievable scenario (i.e., the reflection of the savings possible through unconstrained budgets, greatly heightened program activity and incentives) and a Reference scenario (i.e., the closest reflection of the primary and secondary data collected on the market for energy efficient technologies in Xcel Energy’s New Mexico service territory).Guidehouse also conducted sensitivity analysis around customer willingness to pay for an efficient technology, equipment density (i.e., quantity of a particular item in a home or building), initial saturation of efficient technologies in the market, and Xcel Energy’s sales forecast, which impacts the assumptions around new construction. All sales and savings values in this report represent energy consumption or electric demand at the customer meter.

These elements help capture the variation of gross potential that reflects the range of outcomes and uncertainty inherently present in any forecast. Although the Reference scenario is reflective of past program achievement and budget, both scenarios are reasonable estimates of future energy efficiency potential under the two sets of program assumptions described above.

6.1 Approach to Estimating Achievable Potential

The adoption of energy efficiency measures can be broken down into calculation of the equilibrium market share and calculation of the dynamic approach to equilibrium market share. The equilibrium market share can be thought of as the percentage of individuals choosing to purchase a technology provided those individuals are fully aware of the technology and its relative merits (e.g., the energy- and cost-saving features of the technology). In this potential study, Guidehouse used equilibrium payback acceptance curves that were developed using primary research from fall 2020 in Xcel Energy’s New Mexico service territory. For this research, customer decision makers were asked about the quantity of various end uses within their home or business to inform density and saturation estimates and whether they would be likely to make investments in energy efficiency upgrades based on a variety of project costs and expected annual energy savings. Appendix F.1.1 provides a more detailed explanation with examples of these concepts. Initial efficient saturation (which is informed by the customer survey) has a large impact on gross achievable potential and Appendix F.1.6 presents efficient saturation trends for the top saving measures in the study along with a detailed example of the interaction between efficient saturation and savings potential.

Efficient measures can either be adopted as a retrofit, replace on burnout, or new construction measure. Guidehouse models the dynamics of how customers become aware of an efficient measure and eventually choose to adopt it or not, and how the building stock changes over time two different ways depending on the type of measure being considered. This methodology and how customer incentives to purchase the efficient measure are described in Appendices F.1.2, F.1.3, and F.1.4.

For all models that simulate future product adoption, there is no future world against which one can compare simulated with actual results, so the model has to be calibrated using historic data. For this potential study, Guidehouse took a number of steps to ensure that forecast model results were reasonable by comparing historic program performance and incentive spending with the modeled forecast. Guidehouse adjusted model parameters, including assumed incentive levels and technology diffusion coefficients to obtain close agreement across a wide variety of metrics compared for the Reference Scenario. This process ensures that forecast

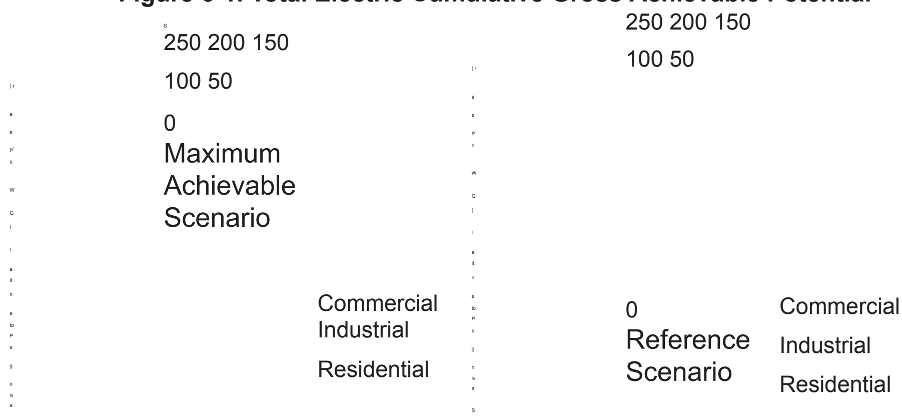
gross potential is grounded against real-world results considering the many factors that come into play in determining the likely adoption of energy efficient measures, including both economic and non-economic factors. Appendix F.1.5 provides modeled vs. historic savings for both the residential and commercial and industrial sectors and more details on how the model was calibrated.

Guidehouse also studied the impact of varying four data-driven, salient parameters in a sensitivity study to determine their impact on overall potential. Appendix F.1.7 presents a thorough description and the results of this study.

6.2 Achievable Potential Results

Figure 6-1 presents the overall gross achievable potential by sector for the Maximum Achievable and Reference scenarios, and Table 6-1 presents the gross potential as a percentage of overall forecasted sales, GWh savings, and portfolio budget through 2030. The Maximum Achievable scenario reflects the savings possible through unconstrained budgets, greatly heightened program activity and incentives. The Reference scenario was deemed to represent a business as usual case, whereby Xcel Energy would continue implementing their energy efficiency programs at comparable funding levels and for the most part continue to realize the energy savings that they have experienced from the past.

Figure 6-1. Total Electric Cumulative Gross Achievable Potential



Source: Guidehouse Analysis

Table 2-1. Total Electric Cumulative Gross Achievable Potential for Maximum Achievable and Reference Scenarios

	Cumulative Savings (GWh)		
Maximum Achievable Scenario			
2021	62	0.8%	$24.4
2022	140	1.7%	$28.9
2023	218	2.5%	$30.0
2025	333	3.4%	$23.1
2030	451	4.3%	$20.6
Reference Scenario			
2021	42	0.6%	$10.3
2022	97	1.2%	$12.2
2023	151	1.7%	$12.4
2025	251	2.6%	$12.1
2030	396	3.8%	$10.6

Source: Guidehouse Analysis

Appendix F.2 details the results pertaining to the Reference scenario for electric gross achievable potential at different levels of aggregation. Results are shown by sector, customer segment, end use, and by highest-impact measures. Appendix F.2 also provides analysis of some of the factors influencing these results.

Appendix F.3 provides results for the Maximum Achievable scenario, the assumptions Guidehouse made in developing this scenario, and how it compares to the Reference scenario.

Attachment B Results FiguresAndTables_Max Achievable and Attachment C Results FiguresAndTables_Reference Scenario show the detailed results for both achievable scenarios.

Appendix A. Customer Characterization

This appendix provides a more detailed explanation of the customer characterization task.

A.1 Customer Breakout by City

Within the New Mexico service territory, Xcel Energy has just under 110,000 residential and C&I customers. Table A-1 shows the breakdown of these customers by sector and city. Nearly 80% of all customers reside in four cities (Roswell, Clovis, Hobbs, and Carlsbad) in the southeast quadrant of the state.

Table A-1. Customer Breakout by City in Xcel Energy's New Mexico Service Territory

	Total	Residential Customers	% of NM Residential Customers	C&I Customers	% of NM C&I Customers
Roswell	25,111	20,296	24%	4,815	19%
Hobbs	22,742	16,913	20%	5,829	23%
Clovis	18,770	15,222	18%	3,548	14%
Carlsbad	18,685	14,376	17%	4,308	17%
Artesia	6,341	5,074	6%	1,267	5%
Portales	6,341	5,074	6%	1,267	5%
Tucumcari	3,551	2,537	3%	1,014	4%
Eunice	2,113	846	1%	1,267	5%
Jal	2,113	846	1%	1,267	5%
Loving	1,353	846	1%	507	2%
Other[3]	2,198	1,691	2%	507	2%
Total	**109,317**	**83,720**		**25,597**	

A.2 Residential Customer Characterization

Guidehouse analyzed customer contact data from Xcel Energy and validated with data from the American Community Survey (ACS) for in-territory census tracts to determine customer counts in each of the segments defined for the potential study, based on a combination of home type and income level. Residential customers are classified as low income based on the following:

- ACS household income and household size data to inform the total population of residential customers who fall below 200% of federal poverty level.
- Xcel Energy data on which customers received assistance in the past 12 months to inform the low income split between single family and multifamily customers.

There are 83,720 residential customers in Xcel Energy's New Mexico service territory, the majority of which reside in single family homes. Table A-2 provides a home type breakout of

[3] The other category includes the cities of Dexter, Hagerman, Texaco, Lake Arthur, Monument, Lovington, and Malaga.

residential single family customers and multifamily customers living in a building with two to four units, multifamily customers living in a building with greater than four units, and customers living in manufactured homes.

Table A-2. Residential Customer Count by Home Type and City

	Single Family Homes	Multifamily Customers (2-4 Units per Building)	Multifamily Customers (5+ Units per Building)	Manufactured Homes
Roswell	14,455	726	1,835	3,241
Hobbs	11,677	761	1,753	2,703
Clovis	11,055	948	991	2,474
Carlsbad	10,272	538	1,224	2,292
Artesia	3,769	171	295	806
Portales	3,426	380	267	775
Tucumcari	1,982	51	95	405
Eunice	940	43	18	190
Jal	692	4	0	132
Loving	614	30	9	124
Other	1,185	53	69	249
Total	**60,065**	**3,704**	**6,556**	**13,395**

Note that the potential study did not break multifamily into large and small bins, but rather use random sampling to weight metrics accordingly, such that multifamily measure characterization and global inputs are representative of Xcel Energy's New Mexico residential multifamily population.

Analysis of ACS data indicates that 36% of households in Xcel Energy's New Mexico territory live at or below 200% of federal poverty level and were classified as low income for the potential study. Guidehouse analyzed data provided by Xcel Energy to determine what portion of these households are single family vs. multifamily. While 72% of total residential customers are single family and 12% are multifamily, 74% of customers receiving assistance from Xcel Energy are single family vs. 26% multifamily, which suggests a larger proportion of multifamily customers (greater than half) are low income relative to single family customers. Table 4 provides the total customer counts in each of the residential customer segments.

Table A-3. Residential Sector Customer Counts

Single Family	37,673
Single Family – Low Income	22,392
Multifamily	2,471
Multifamily – Low Income	7,789
Manufactured Homes	13,395
Total	**83,720**

A.3 Commercial & Industrial Customer Characterization

C&I customers are mapped to one of 11 commercial segments or two industrial segments based on a six-digit North American Industry Classification System (NAICS) code Xcel Energy provided in the customer database.

There are 25,597 C&I customers in Xcel Energy's New Mexico service territory. Guidehouse mapped each customer to a segment based on the six-digit NAICS code listed in the customer database. Table A-4 contains number of customers, total annual consumption, and average annual consumption per customer by C&I customer segment, based on these NAICS code classifications.

Table A-4. C&I Customer Count and Annual Consumption by Segment

Customer	Quantity	Total Annual MWh Consumption	Annual MWh Consumption per Customer
Commercial – College	87	33,872	389
Commercial - Grocery	609	89,205	146
Commercial – Health	375	61,944	165
Commercial - Lodging	451	53,492	119
Commercial - Mining/Oil & Gas Extraction	4,607	2,287,347	496
Commercial – Office	8,770	1,250,561	143
Commercial – Other	3,421	62,283	18
Commercial - Restaurant	560	291,624	521
Commercial – Retail	3,663	396,625	108
Commercial – School	227	8,520	38
Commercial - Warehouse	798	*	*
Industrial - Agriculture	1,381	236,107	171
Industrial - Manufacturing	648	*	*
Total	**25,597**	**5,892,648**	**230**

*energy sales not provided to protect identity of customers

A.4 Secondary Sources for Customer Characterization

To supplement customer and measure data, and to validate assumptions developed from customer data, Guidehouse used a variety of secondary sources. To increase transparency, Guidehouse relied publicly available sources wherever possible:

- US EIA Residential Energy Consumption Survey (RECS): This survey provides consumption, energy intensity, and residential building stock data broken out by census division, end use, fuel type, and building type for residential households. The latest data available is from 2015. While the data is not geographically granular (maximum geographic specificity for summary tables is for the "Mountain South" region, which includes New Mexico, Arizona, and Nevada), detailed cross tabs were used to supplement Xcel Energy data on EUI and fuel splits especially for multifamily and low income breakouts.

- US EIA Commercial Building Energy Consumption Survey (CBECS): This survey provides consumption, energy intensity, and stock data broken out by census division, end use, and fuel type. At time of writing, the latest full data set available was from 2012, with partial 2018 data used when possible (only a portion of the 2018 dataset had been published at the time of this study). While these data are not geographically granular, detailed cross tabs were used to supplement Xcel Energy data on size of commercial buildings, number of floors, EUI, and fuel splits.

- US EIA Manufacturing Energy Consumption Survey: This survey provides much of the same data as in CBECS, but for manufacturing buildings. The latest data available is from 2014, is cross-referenced to NAICS codes, and is not geographically specific (for most tables). The team used this data to supplement Xcel Energy's commercial customer data around end use breakouts, square footage, and fuel switching and fuel type.

- US Census American Community Survey: This includes a wide variety of demographic metrics on residential households including income, household size, building type, and owner occupancy. These tables were used to supplement Xcel Energy residential customer data and forecasts, particularly around low income and multifamily.

- US Census Annual Economic Survey: These surveys are conducted each year and provide information on economic activity including counts of businesses by sector, (NAICS summary codes), number of employees, and census geographies. The latest data available is from 2018. The team used the data to supplement Xcel Energy's customer data and forecasts.

Appendix B. Primary Research

This appendix provides a more detailed explanation of the primary research task.

B.1 Approach to Primary Data Collection

Guidehouse identified the segments shown in Table B-1 through:

1. Analysis of customer count and consumption data from the segments defined in Appendix A, "Customer Characterization"
2. Energy efficiency potential in Xcel Energy's adjacent Colorado service territory
3. Rapid growth segments
4. Other existing or ongoing Guidehouse potential studies in various jurisdictions
5. Historic program performance

Table B-1. Customer Segment/End Use Combination Focus for Primary Research

Commercial – Office Lighting	
Commercial – Retail Lighting	
Residential – Single Family	Lighting Space Cooling Space Heating
Residential – Single Family Low Income	Lighting Space Cooling Space Heating
Residential – Manufactured Lighting	
Industrial – Manufacturing Fans, Blowers, Motors, Drives, and Pumps Commercial –	

Mining/Oil & Gas Extraction	Fans, Blowers, Motors, Drives and Pumps

B.2 Sampling Approach

Each characterization of an end use, equipment type, or willingness to pay value has its own distribution and its own confidence and precision level. We made conservative estimates with our sample sizes, since we designed for the equipment, we expected to have the highest variability in saturation. The sample sizes that follow are the total number of sites for which we collected data.

To minimize customer fatigue and maximize the quality of the most important data, we asked each customer about the applicable high impact end uses for their respective segment plus one to two lower priority end uses. Our assumption was that by keeping the survey as succinct as possible, we would receive a higher level of data quality for the most important end uses . Thus,

the sample sizes for lower priority end uses were less than the total number of sites, since not every site was asked about every end use. We used the same approach for willingness to pay questions.

B.2.1 Residential Population Frame

Our residential population frame, shown in Table B-2, is segmented into residential homes, multifamily, and manufactured homes. The residential and multifamily strata are further stratified into low income and non-low income since it is likely that the income level of a customer may influence both their willingness to pay and the equipment installed in their home.

Table B-2. Residential Population Frame

Single Family	36,610
Single Family – Low Income	21,760
Multifamily	2,401
Multifamily – Low Income	7,569
Manufactured	13,017
Total	**81,357**

Source: Guidehouse analysis of Xcel Energy customer database

B.2.2 Residential Sample

Table B-3 shows our residential sample size by segment. We developed our residential sample size assuming a coefficient of variance (CV) of 0.75 and reported all relative precisions at a two tailed 90% confidence interval.

Table B-3. Residential Sample Size

Customer	Count	Coefficient of Variance (σ/μ)	Sample Size	Relative Precision
Single Family	36,610	0.75	300	7%
Single Family – Low Income	21,760	0.75	120	11%
Multifamily	2,401	0.75	80	14%
Multifamily – Low Income	7,569	0.75	80	14%
Manufactured	13,017	0.75	120	11%
Total	81,357		700	5%

Source: Guidehouse analysis of Xcel Energy customer database

For high priority segment and end use combinations, we achieved the confidence and precision outlined above. However, not every customer was asked about every end use and not every customer reported on every measure type. For some saturations, densities, and willingness to pay responses we had half or less of the sample size shown above. Because of the expectation that not all customers will respond to questions for all end uses, we designed our sample to achieve 90/10 confidence and precision for end uses with fewer responses, while exceeding that target for high priority end uses.

B.2.3 Commercial & Industrial Population Frame

Our C&I population frame, shown in Table B-4 and Table B-5, is segmented by building type/industry. The sampling unit for the C&I segment is an individual premise (i.e., defined as having a unique premise ID in Xcel Energy's customer database).

Table B-4. Commercial Population Frame

Premise	Quantity	Total Annual MWh Consumption	Annual MWh Consumption per Customer
College	38	17,915	471
Grocery	179	33,097	185
Health	315	48,545	154
Lodging	177	37,957	214
Mining/Oil & Gas Extraction	1,387	972,101	701
Office	6,026	740,189	123
Other	518	6,450	12
Restaurant	405	48,728	120
Retail	2,710	243,456	90
School	159	8,260	52
Warehouse	528	*	*
Total	**12,471**	*****	*****

**energy sales not provided to protect identity of customers*

Source: Guidehouse analysis of Xcel Energy customer database

Table B-5. Industrial Population Frame

Premise	Quantity	Total Annual MWh Consumption	Annual MWh Consumption per Customer
Agriculture	695	72,273	104
Manufacturing	339	*	*
Total	**1,034**	*****	*****

**energy sales not provided to protect identity of customers*

Source: Guidehouse analysis of Xcel Energy customer database

B.2.4 Commercial & Industrial Sample

In the C&I sector there is a wide range of consumption by facility. Since the types of equipment installed correlates with building consumption, Guidehouse chose to further stratify the sample into large, medium, and small substrata for some building types. The strata breakpoints for large, medium, and small were decided for each stratum based on the range of energy consumption within that strata, natural breakpoints in consumption, and the overall share of energy consumption of the segment compared to the service territory as a whole.

Table B-6 shows the target sample size by segment for the commercial sector without substrata and Table B-9 shows our commercial sample size including substrata. Guidehouse assumes a CV of 0.75 for all strata and our relative precision is reported at a 90% confidence interval.

Table B-6. Commercial Sample Size

Commercial Segment	Premise Count	Total Annual MWh	Consumption Coefficient of Variation (σ/μ)		Relative Precision
College	38	17,915	0.75	9	38%
Grocery	179	33,097	0.75	20	24%
Health	315	48,545	0.75	23	25%

Lodging 177 37,957 0.75 20 33% Mining/Oil & Gas

Extraction 1,387 972,101 0.75 45 14% Office 6,026 740,189 0.75 57 14% Other 518 6,450 0.75 20 30% Restaurant 405 48,728 0.75 25 22% Retail 2,710 243,456 0.75 45 20% School 159 8,260 0.75 25 33% Warehouse 528 * 0.75 25 28% **Total 12,471 * 317 8%** **energy sales not provided to protect identity of customers*

Source: Guidehouse analysis of Xcel Energy customer database

There are relatively few commercial customers that consume a large portion of the commercial sector's energy in Xcel Energy's New Mexico territory, as Table B-7 shows. In the Mining/Oil & Gas Extraction segment, there are six customers that use one-quarter of Xcel Energy's delivered energy to the commercial sector. In the office segment, 10 customers consume 18% of Xcel Energy's delivered energy. Given the energy consumption of these customers, it was critical for Guidehouse to sample most of these customers and characterize their baseline equipment and willingness to pay.

Table B-7. Commercial Sample Size with Substrata

Segment **Premise**
Commercial
Count
Total Annual MWh
Consumption
Coefficient of Variation (σ/μ)
Sample Size
Percent of Total Energy
Consumption
Relative Precision

College Large 4 16,032 0.75 4 1% 0% College Small 34 1,883 0.75 5 0% 67% Grocery Large 11 20,331 0.75 5 1% 55% Grocery Small 169 12,766 0.75 15 1% 33% Health Large 4 25,769 0.75 3 1% 73% Health Small 312 22,776 0.75 20 1% 28% Lodging All 177 37,957 0.75 20 2% 27% Mining/Oil & Gas

Extraction Large 6 537,286 0.75 5 25% 32% Mining/Oil & Gas

Extraction Medium 73 350,171 0.75 20 16% 25% Mining/Oil & Gas

Extraction Small 1,310 84,644 0.75 20 4% 29% Office Large 10 400,881 0.75 7 18% 32% Office Medium 45 138,298 0.75 20 6% 22% Office Small 5,982 201,011 0.75 33 9% 22% Other All 519 6,450 0.75 20 0% 28% Restaurant All 405 48,728 0.75 25 2% 25% Retail Large 29 104,533 0.75 10 5% 36% Retail Small 2,691 138,923 0.75 35 6% 21% School All 161 8,260 0.75 25 0% 24% Warehouse All 529 * 0.75 25 * 25% **Total 12,471 * 317 100% 9%** ** energy sales not provided to protect identity of customers*

Table B-8 and Table B-9 show the industrial sector segment and substrata level sample sizes, respectively. Much like in the commercial sector, there are relatively few customers that consume much of Xcel Energy's delivered energy. Five of the customers consume 88% of the sector's energy.

Table B-8. Industrial Sample Size

Industrial	**Segment**	**Premise**	**Count Total Annual**	**MWh Consumption**	**Coefficient of Variation**

(σ/μ) Sample Size Relative Precision

Agriculture 695 72,273 0.75 16 18% Manufacturing 339 * 0.75 19 2% **Total 1,034 * 35 3%** **energy sales not provided to protect identity of customers*

Table B-9. Industrial Sample Size with Substrata

Industrial Segment | Sub strata | Premise Count Total | Annual MWh Consumption | Coefficient of Variation (σ/μ) | Sample Size Percent of Total Energy Consumption | Relative Precision

Agriculture Large 4 * 0.75 1 * 0% Agriculture Small 694 38,711 0.75 15 7% 34% Manufacturing Large 4 * 0.75 4 * 0% Manufacturing Small 335 30,686 0.75 15 5% 33% **Total 1,034 573,777 35 100% 3%** **energy sales not provided to protect identity of customers*

B.3 Residential Data Collection

Guidehouse's approach for residential data collection uses an innovative virtual audit platform to cost-effectively collect data from a large sample of residential customers across segments. The primary objectives of the residential online survey included determining Xcel Energy's residential customer characteristics (e.g., home type, size, age, occupancy, and energy usage patterns), energy types used, and equipment characteristics. Guidehouse's approach in the survey was to focus on questions that residents can realistically answer, rather than asking more technical questions about efficiency levels.

B.3.1 Methodology

For the residential market research, Guidehouse employed virtual audits through an online survey platform, Qualtrics, to estimate the saturations and densities of various end uses by customer strata, as well as customer willingness to pay for efficient equipment. These mobile friendly web-based surveys offered customers tiered incentives for varying levels of survey participation:

- **Tier 1 – Saturation Survey:** Customers responded to a web survey focused on home characteristics, willingness to pay, demographics, and the saturation of energy-using equipment. Customers who completed this survey were eligible for a $15 incentive.[4]
- **Tier 2 – Virtual Audit:** Customers with high impact measures or end uses were offered the opportunity to continue the survey (at a later time if necessary) and provide additional details, including photos of equipment nameplates, to further characterize these high impact measures. Customers who completed this survey were eligible for a $35 incentive (i.e., Tier 1 incentive plus $20).[5]

B.3.2 Residential Customer Communication

Guidehouse launched the residential survey on October 28, 2021 and distributed it in multiple waves, as Table B-10 outlines. In total, the team contacted 6,580 customers to complete the survey.

Table B-10. Residential Survey Distribution Summary

(valid emails)

Wave 1

(soft

launch)
949 10/28/2020 11/5/2020 11/14/2020 12/10/2020
1/5/2021

Wave 2 5,631 11/5/2020 11/14/2020 11/24/2020 12/10/2020 1/5/2021

[4] The incentive was increased during the survey distribution to increase the survey response rate and encourage customers to complete the survey.

[5] The incentive was increased during the survey distribution to increase the survey response rate and encourage customers to complete the survey.

(valid emails)

Total 6,580 - - - - -

After the initial distributions, Guidehouse recognized the response rate of the survey was low,[6] which was likely due to two factors: screened out contacts and the COVID-19 pandemic. In total, 51 respondents were screened out of the survey because they either owned the property but do not live there, no longer reside at the residence, have never lived at the address, or indicated the address was a commercial location. Furthermore, although the direct impact is unknown, COVID-19 could have had an impact on customers' ability to complete the survey.

To increase the response rate and confirm a sufficient number of responses were collected, Guidehouse completed the following activities:

- **Enhanced email communications**: Guidehouse met with Xcel Energy's communication team to discuss the survey invitation and reminder emails. To appeal to customers, the following enhancements were made to email communications:
  - **Simplified the subject line and mentioned the incentive first.** Guidehouse updated the subject line to read, "Earn an Amazon gift card for completing a short survey about Xcel Energy."
  - **Condensed the email body.** The initial email contained a lot of information. Xcel Energy and Guidehouse worked to reduce the information in the email and add the link to the survey earlier in the email. The intent was for customers to easily see and click on the survey link.
  - **Sent additional reminder emails.** Originally, Guidehouse intended to send an invitation email followed by two reminder emails. To encourage people to respond, Guidehouse sent four reminder emails to customers.
- **Increased the incentive**: Guidehouse increased the Tier 1 saturation survey incentive from $15 to $25. Originally, an additional $20 incentive was offered to customers who provided pictures of equipment, then the Tier 2 photo incentive was increased from $20 to $25. The maximum incentive available for completing the survey increased from $35 to $50 to encourage customers to compete the survey.

The survey closed in January 2021 and achieved a total of 337 completes and 315 partial completes. Out of 6,580 customers, 652 (partial and total completes) completed the survey with an overall response rate of 9.9%, as Table B-11 shows. The percentage of target achieved including total and partial completes was 93%. Table B-11 shows the completes by residential segment type.

[6] In early December, the overall survey response rate was 1.7%.

Table B-11. Residential Response Rate Summary

	Screen Outs	Partial Completes	Partial Completes (Density)	Total Completes	Total Completes (including all partial completes)	Response Rate	Percent of Target Achieved
700	51	145	170	337	652	9.9%	93%

A definition of each of the columns in Table B-11 is provided below:

Target – Target Sample for each sector

Screen Outs – Customers were asked screening questions in the beginning of their survey to determine their eligibility of taking the survey. For example: if a customer indicates that their address on file is incorrect then they will be screened out of the survey.

Partial Completes – Respondents that only completed a portion of the survey.

Partial Completes (Density) - Respondents that only completed a portion of the survey including density questions. **Total Completes –** Respondents that completed the entire survey

Total Completes (including all partial completes) – Respondents that partially or fully completed the survey.

Response Rate – Percentage of customers that partially or fully completed the survey to the total number of customers that were contacted to take the survey.

Percent of Target Achieved – Percentage of total completes to the original sample target.

Table B-12. Stratification of Completed Residential Customer Surveys

Single Family[8]	36,610	473
Single Family – Low Income	21,760	84
Multifamily	2,401	30
Multifamily – Low Income[9]	7,569	24
Manufactured	13,017	41
Total	**81,357**	**652**

B.4 Commercial & Industrial Customer Characterization

Guidehouse's approach for C&I primary data collection mirrors the approach for residential data collection, using a virtual audit platform to collect data from a large sample representing the variety of segments contained within the C&I sectors.

B.4.1 Methodology

The primary objectives of the online survey included determining firmographics of the businesses in Xcel Energy's service territory (e.g., facility type, size, age, occupancy, usage patterns), equipment saturations, energy types used, and equipment characteristics. As with the residential survey, Guidehouse designed questions to elicit information that respondents can

[7] These values include partially completed survey and fully completed surveys.

[8] These completes included responses that were not flagged as low income or unknown. [9] These completes include responses that were flagged being low income or unknown (likely low income).

confidently provide regarding equipment types, energy sources used, and equipment age, as well as information regarding their firm and facilities.

To make sure the study collected a sufficient sample of contacts in all of the targeted segments, Guidehouse enlisted the help of market research firm Bellomy Research to conduct recruitment by phone. This approach helped reach the appropriate decision makers at C&I organizations, collected email addresses, and secured commitments to complete the survey. Customers who completed this survey were eligible for a $70 incentive or donation to a charity of Xcel Energy's choosing, as their corporate rules permit.[10]

B.4.2 C&I Customer Communication

Guidehouse launched the C&I survey on October 9, 2020 and distributed multiple waves of invitation and reminder emails coupled will phone calls from Bellomy Research, as Table B-13 and Table B-14 show. In total, 5,086 customers were contacted and 83 of these customers were identified as high priority participants that Bellomy Research also contacted.

Like the residential survey, the response rate was low, and it was difficult to collect C&I responses due to the COVID-19 pandemic. At the time, some businesses were closed, inhibiting program participants from providing measure-specific information.

To increase the response rate and confirm the collection of sufficient, reliable data, Guidehouse employed the following tactics:

- **Enhanced email communications:** To appeal to customers, Guidehouse sent additional reminder emails to customers to encourage them to complete the survey.

- **Increased the incentive:** Guidehouse increased the increased the survey incentive from $70 to $100.

Table B-13. C&I Survey Distribution Summary (Online Only)

Wave **(valid emails)**

1 533 10/9/2020 10/15/2020 12/3/2020 12/15/2020 1/5/2021 **Wave**

2 1,314 11/2/2020 11/5/2020 12/3/2020 12/10/2020 1/5/2021 **Wave**

3 3,239 12/17/2020 1/5/2021 - - - **Total 5,086 - - - - -**

[10] The incentive was increased during the survey distribution to increase the survey response rate and encourage customers to complete the survey.

Table B-14. C&I Disposition Summary by Bellomy Research

Communication 1	Communication 2	Communication 3	Communication 4	Communication 5

Wave 1 10 11/16/2020 11/30/2020 12/7/2020 12/10/2020 1/5/2021 **Wave 2** 41 11/19/2020 11/30/2020 12/7/2020 12/10/2020 1/5/2021 **Wave 3** 9 11/24/2020 12/3/2020 12/10/2020 1/5/2021 - **Wave 4** 4 11/30/2020 12/7/2020 1/5/2021 - - **Wave 5** 19 12/7/2020 1/5/2021 - - - **Total 83** - - - - -

Overall, 5,086 customers were contacted and the survey received a total of 85 complete responses and 129 partial completes, which resulted in an overall response rate of 4.2%, as Table B-15 shows. Guidehouse collected a total of 214 responses[11] with usable data, out of a target number of completes of 350. Although 61% (inclusive of partial and total completes) of the target was achieved, Guidehouse supplemented some gaps in the primary data through the use of secondary resources as detailed in Section 3, “Energy Efficiency Measure Characterization.” Table B-16 shows the stratification of the commercial customer surveys by segment.

Table B-15. C&I Response Rate Summary

	Screen Outs	Partial Completes	Partial Completes (Density)	Total Completes	Total Completes (including all partial completes)	Response Rate	Percent of Target Achieved
350	79	111	18	85	214	4.2%	61%

A definition of each of the columns in Table B-15 is provided below:

Target – Target Sample for each sector

Screen Outs – Customers were asked screening questions in the beginning of their survey to determine their eligibility of taking the survey. For example: if a customer indicates that their address on file is incorrect then they will be screened out of the survey.

Partial Completes – Respondents that only completed a portion of the survey.

Partial Completes (Density) - Respondents that only completed a portion of the survey including density questions.

Total Completes – Respondents that completed the entire survey

Total Completes (including all partial completes) – Respondents that partially or fully completed the survey.

Response Rate – Percentage of customers that partially or fully completed the survey to the total number of customers that were contacted to take the survey.

Percent of Target Achieved – Percentage of total completes to the original sample target. [11] Responses are broken

out by C&I segment in Table B-15.

Table B-16. Stratification of Completed C&I Customer Surveys

Agriculture	9
College	1
Grocery	4
Health	7
Lodging	14
Manufacturing	12
Mining/Oil & Gas Extraction	14
Office	89
Other	4
Restaurant	11
Retail	36
School	5
Warehouse	8
Total	**214**

[12] These values include partially completed surveys and fully completed surveys.

Appendix C. Energy Efficiency Measure Characterization

This appendix provides a more detailed explanation of the energy efficiency measure characterization task.

C.1 Measure List

Table C-1. Residential End Uses and Measures

Res - Programmable Thermostat	Manual thermostat, programmable thermostat operated as a manual thermostat, or no thermostat
Res - Smart Thermostat	
Res - Ceiling Insulation	R value between 0-4 (Insulation level higher than baseline level)
Res - Wall Insulation	Retrofit - Existing insulation / NEW - IECC 2009
Res - Infiltration Reduction	Upper limit of 4.00 CFM50 per square foot of house floor area

Space Heating & Cooling

Res - Attic Insulation R-15 attic insulation
Res - Low-emissivity coating for standard windows Standard window
Res - Central Furnace Efficient Fan Motor (ECM) - MF buildings Standard furnace motor : PSC Motor Res - High Efficiency VRF Heat Pump equipment Baseline Eff (AC)/HP unit Res - Central Air Conditioner Tune-up No central air conditioning tune-up Res - High Efficiency AC/HP Equipment <17 SEER Baseline Eff (AC)/HP unit
Res - Interior operable storm windows Baseline windows
Res - High Efficiency AC/HP Equipment <17 SEER Federal minimum AC

Lighting

LED lamps (general service lamps including A lamps, specialty lamps) Mixed market incandescent/CFL/halogen Networked/connected indoor LED bulb lamps

LED indoor fixture (pin-based lamps) Incandescent/CFL bulb (market baseline wattage)
Linear LEDs T12/T8 fluorescents
LED outdoor fixtures CFL/halogen bulbs (market baseline wattage)

Res - Duct Sealing Ducts with a leakage factor assumed to be 35% or less

Res - Ductless Mini-Split Heat Pumps NEW/ROB: Federal Minimum / ER: Existing conditions
Res - Central AC/Heat Pump Quality Installation Verification (QIV) No CAC/HP QIV

Occupancy sensors (for MF common areas) No occupancy sensors
Res - Central heat pumps for space heating (replace of AC) Baseline Eff (AC)/HP unit

Space Cooling

Res - Evaporative Cooling Federal minimum: 13 SEER split system air conditioner
Res - Whole House Fans Baseline Eff AC unit
Res - Smart ceiling fans No ceiling fan
Res - Indirect -Direct Evaporative Cooler Federal minimum AC

Hot Water

Low-flow showerheads Federal minimum standard flow rate 2.5 GPM Low-flow faucet aerators Federal standard 2.2 GPM or greater
Efficient storage and tankless water

Res - High Efficiency Air Conditioner NEW/ROB: Federal minimum / ER: Existing conditions electric storage and instantaneous water

heaters Heat pump water heaters
Solar water heaters

heaters Federal standard minimum efficiencies for

Electronics Advanced power strips Standard power strip or no power strip Smart/Wi-Fi plugs

Appliances ENERGY STAR clothes washers Non-ENERGY STAR clothes washers Heat pump clothes dryers Non-ENERGY STAR clothes dryers

Refrigeration ENERGY STAR refrigerators Non-ENERGY STAR refrigerators Whole

House Home energy reports No home energy reports

Table C-2. Commercial & Industrial End Uses and Measures

High efficiency packaged

heat pump

system IECC 2009 efficiency

Packaged terminal heat pumps Minimum federal efficiency standards for PTHP

Space
Heating & Cooling

Guest room energy management Manual heating/cooling temperature setpoint and fan on/off/auto thermostat

HVAC variable frequency drives HVAC fan or pump not controlled by variable frequency drive (VFD)

RTU with demand control RTU with standard

Space
Cooling

economizer Direct evaporative pre-cooling Air cooled condensers on DX units without evaporative pre-cooler

Ductless mini-split heat pumps Mini-split heat pump with 13-14 SEER Water source heat pumps HP with 12 SEER

DX RTU of varying sizes DX RTU unit 10-13 EER

Chillers (air cooled, centrifugal,

scroll/screw) Chiller with code-minimum efficiency Packaged terminal air

conditioners Minimum federal efficiency standards for PTAC

Room Air Conditioners Minimum federal efficiency standards for RAC

High efficiency packaged air

conditioning IECC 2009 efficiency

Custom cooling Less efficient product/systems

Custom motors Less efficient product/systems

Hot Water Low-flow faucet aerators 2.2 gpm faucet aerator

Interior LED linear fixture/retrofit kit (includes troffers)

Linear fluorescents T12, T8, T5 Interior linear lamp (including high, medium, low bay lamps)

Interior LED fixture – high/medium/low bay

Interior LED lamp – PAR/BR/MR/A Mixed market CFL/incandescent/halogen bulb

Interior network connected LED fixtures code

Federal standards or local building energy

Interior network connected LED lamps Manual controls

Interior LED fixture – other (includes all

Lighting commercial applications) mix

other LED fixtures in CFL and halogen technology

LED refrigerated case lighting Linear fluorescents T12, T8, T5 case lighting LED

lighting for industrial applications Mixed market industrial lights

Exterior LED fixture Metal halide/linear fluorescents/HPS systems Exterior LED lamp

Mix of halogen, CFL, linear fluorescent, mercury vapor, and metal halide

Interior lighting controls:

occupancy/daylights sensors No controls or manual controls

Exterior lighting controls Manual control

Custom lighting Less efficient product/systems

New construction – lighting power

density Code maximum LPD

Appliances Vending machine controls No controls

Zero-energy doors Cooler or freezer glass door that is continuously heated to prevent condensation

Refrigeration shaded pole motor Anti-sweat heater controls No

ECM motors for reach-in and walk-in controls

coolers and freezers Evaporator fan driven by

ENERGY STAR commercial

ENERGY STAR cabinet ENERGY STAR hot food holding

Cooking dishwasher Conventional unit as defined by

Demand-controlled ventilation – commercial kitchens

Commercial kitchen ventilation hoods without demand-controlled ventilation

Motors, Drives, & Pumps

Compressed Air

Process Cooling

Fans, Blowers,

Pre-rinse spray valves Federal standards or average existing conditions

No air loss drains New electronic solenoid/timed drains Air compressor optimization No optimization of compressed air Air compressor

VFDs No VFD

VFDs on industrial fans and pumps

Select More efficient Pumps Low efficient pumps

Progressive Cavity Pumps Sucker road pumps

O&G O&M No operation and maintenance Dew point controls No purge control for heatless desiccant dryers

Mist eliminators New general-purpose filter

C.2 Key Parameters

Table C-3. Key Measure Characterization Parameters

Baseline Measure Existing inefficient equipment or process to be replaced. T5/T8 Fluorescent Lighting

Energy Efficiency Measure

Measure Lifetime

Measure Costs

Replacement Type

Annual Energy Consumption Efficient equipment, process, or project to replace the baseline.

The lifetime in years for the base and energy efficient technologies. The base and energy efficient lifetimes only differ in instances where the two cases represent inherently different technologies, such as solar water heaters compared to a baseline of regular storage water heaters.

The incremental cost between the assumed baseline and efficient technology using the following variables: • Base Costs: The cost of the base equipment, including both material and labor costs.

• Energy Efficient Costs: The cost of the energy efficient equipment, including both material and labor costs.

Retrofit measure costs will include the full material cost of the efficiency measure and associated labor rates for removal of existing equipment and installation of the efficient technology. Dual baseline measures consider both the initial retrofit measure cost and savings, and that of the portion of measure life once a new code or standard is projected to become effective.

Identifies when in the technology or building's life an efficiency measure is introduced. Replacement type affects when in the potential study period the savings are achieved as well as the duration of savings and is discussed in greater detail in Appendix D, "Technical Potential."

The annual energy consumption for electricity in kWh and demand in kW for each baseline and energy efficiency measure. Indoor LED Linear Lamp

T5/T8 Fluorescent Lighting: 10 years Indoor LED Linear Lamp: 12 years

Baseline cost: $690 Efficient cost: $500

Retrofit (RET), replace on-burnout (ROB) and new construction (NEW)

Baseline: 196 kWh/year
Efficient: 163 kWh/year

Unit Basis The normalizing unit for energy, demand, cost, and density estimates.

The unit used to scale the energy, demand, cost, and

Per bulb, per hp, per kWh consumption

Per home, per 1,000

Scaling Basis

reference forecast.

sector.
SF of commercial area, per segment/end use consumption etc.

The team mapped each measure to the appropriate end uses, customer segments and sectors. Section 2, "Primary Research," describes the breakdown of customer segments with each

Sector and End use Mapping
density estimate for each measure according to the

Commercial HVAC Tune-up is mapped to the Non-Res HVAC end use in the commercial sector.

The Electric Space heating + Electric

Fuel Type Multiplier

density in order to avoid double counting of savings. Appendix D, "Technical Potential," provides further explanation on competition groups.
Cooling multiplier only assigns electric space heating measures to customers that have electric heating.

Measure Density

Used to characterize the occurrence or count of a baseline or energy efficiency measure, or stock, within a residential household or within 1,000 square feet of a commercial building. This parameter was not defined for industrial measures as they scaled by consumption.

Energy Efficiency Saturation

The fraction of the residential housing stock or commercial building space that has the efficiency measure installed each year. For the industrial sector, saturations are based on energy consumption.

35 bulbs per household.

40% of all residential bulbs are LEDs so saturation of LEDs is 40%.

Technical Suitability

The percentage of the base technology that can be reasonably and practically replaced with the specified efficient technology.

Occupancy sensors have a technical applicability of less than 1.0 because they are only practical for interior lighting fixtures that do not need to be on at all times.

Competition Group
Assigns the percentage of electric/gas fuel type to measures with electric fuel type such as water heaters and space heating equipment.

Identifies measures competing to replace the same baseline

Solar water heater or a heat pump water heater can replace an inefficient storage water heater, but not both.

C.3 Key Parameter Approach and Sources

C.3.1 Energy and Demand Savings

Guidehouse took four general bottom-up approaches to analyzing residential and C&I measure energy and demand savings:

1. **TRM Standard Algorithms:** Guidehouse used the New Mexico TRM as the primary source of savings for this study. From the TRM, Guidehouse sourced deemed savings and standard algorithms for unit energy savings and demand savings calculations.

2. **Xcel Energy New Mexico Program Data:** Guidehouse used measure-specific program data from Xcel Energy New Mexico to inform energy and demand savings if savings for those measures were not present in the TRM.

3. **Engineering Analysis:** Guidehouse used appropriate engineering algorithms from other TRMs to calculate energy savings for any measures not included in Xcel Energy New Mexico programs or available TRMs. As an example, the team used algorithms from the

Illinois Statewide TRM version 9.0[13] while calculating savings for central air conditioner tune-up.

4. **Work Papers:** Published work papers based on Guidehouse's research and as provided by Xcel Energy New Mexico's engineering team were used for informing savings for emerging technology measures such as smart ceiling fans.

C.3.2 Incremental Costs

Guidehouse relied primarily on the New Mexico TRM and Xcel Energy New Mexico-provided program data for incremental cost data. Secondary sources of incremental cost data included other TRMs, potential studies, and web scraping of cost data . Incremental costs for custom measures were calculated based on Xcel Energy New Mexico's actual program data. Similar to the calculation of site-level savings, a $/kwh was calculated based on site-level data.

C.3.3 Density and Saturation

Guidehouse used a new approach to estimating density and saturation values for this study. Guidehouse primarily relied on four sources arranged in hierarchical order for developing these values for the residential sector:

- Primary research conducted as a part of this study (2020/2021)
- Xcel Energy (New Mexico)-Home Energy Use Study 2020
- Xcel Energy (New Mexico)-Home Energy Use Study 2018
- Guidehouse's other potential studies and US EIA RECS (if measure-specific data was not available in the above three sources)

Guidehouse developed a weighting for the density and saturation values based on the sample size and age of each study for each individual measure. Almost 90% of the residential measures relied on the data collected through the primary research efforts and the two Xcel Energy home energy use studies. The remaining 10% were informed by other potential studies or RECS.

For the commercial sector, Guidehouse relied on the following sources:

- Primary research conducted as a part of this study (2020/2021)
- Xcel Energy New Mexico's Lighting Saturation Study 2020
- Guidehouse's other potential studies and US EIA Commercial Building Energy Consumption Survey (CBECS

Approximately 60% of the commercial measures were calculated based on weighted average of the data from the primary data collection, the lighting saturation survey, and other potential

[13] Illinois Statewide Technical Reference Manual Version 9.0, https://www.ilsag.info/technical-reference-manual/il-trm version-9/

studies. The remaining measures relied on other potential studies and CBECS for calculating density and saturation values.

C.4 Identifying and Characterizing Emerging Technologies

For emerging technologies on the measure list such as smart ceiling fans Guidehouse reviewed relevant literature and discussions with internal and external industry experts. For each technology, the team documented the following metrics:

• Vintage and locale of the supporting data (when and where it was developed) •

Transparency and updatability of supporting data

• What analysis approach was used and whether any descriptive statistics are provided

• Cost-effectiveness of the emerging technology, as evaluated using methods described above

• Likelihood of the adoption of the emerging technology

Appendix D. Energy Efficiency Technical Potential

This appendix details the energy efficiency technical potential task. The Attachment A: Measure Inputs provides the associated data.

D.1 Approach to Technical Potential and Replacement Types

Guidehouse's modeling approach considers an energy efficient measure to be any change made to a building, piece of equipment, process, or behavior that could save energy. The savings can be defined in numerous ways, depending on which method is most appropriate for a given measure. Measures like residential water heaters are best characterized as some fixed amount of savings per water heater; savings for measures like high efficiency chillers in commercial buildings are typically characterized as savings per 1,000 sq/ft of floor space; and measures like high efficiency fans, motors and drives in the mining/oil & gas extraction segment are characterized as a percentage of segment sales. The DSMSim™ model can appropriately handle savings characterizations for all three methods. The following sections include the formulae used to calculate technical potential by replacement type.

D.1.1 New Construction Measures

The cost of implementing new construction (NEW) measures is incremental to the cost of a baseline (and less efficient) measure. However, new construction technical potential is driven by equipment installations in new building stock rather than by equipment in existing building stock.[14] New building stock is added to keep up with forecast growth in total building stock and to replace existing stock that is demolished each year. Demolished (sometimes called replacement) stock is calculated as a percentage of existing stock in each year, and this study uses a demolition rate of 0.5% per year for all building stock. New building stock (the sum of growth in building stock and replacement of demolished stock) determines the incremental annual addition to technical potential, which is then added to totals from previous years to calculate the total potential in any given year. The team used the following equations to calculate technical potential for new construction measures.

Equation D-1. Annual Incremental NEW Technical Potential (AITP)

$AITP_{YEAR}$ = New Buildings$_{YEAR}$ (e.g., buildings/year[15]) X Measure Density (e.g., widgets/building) X Savings$_{YEAR}$ (e.g., kWh/widget) X Technical Suitability (dimensionless)

Equation D-2. Total NEW Technical Potential (TTP)

$$\mathrm{TTP} = \sum_{\text{��������}=2020}^{\text{����������������}=2030} \text{����������������}_{\text{����������������}}$$

$$\text{������������} = \text{�} \; \text{����������������}_{\text{����������������}}$$

$$\text{���������������}=\text{����������������}$$

[14] In some cases, customer-segment-level and end use-level consumption/sales are used as proxies for building stock. These consumption/sales figures are treated like building stock in that they are subject to demolition rates and stock-tracking dynamics.

[15] Units for new building stock and measure densities may vary by measure and customer segment (e.g., 1,000 square meters of building space, number of residential homes, customer-segment consumption/sales, etc.).

D.1.2 Retrofit and Replace-on-Burnout Measures

Retrofit (RET) measures, commonly referred to as advancement or early-retirement measures, are replacements of existing equipment before the equipment fails. RET measures can also be efficient processes that are not currently in place and not required for operational purposes. For RET measures, we calculated a deferred replacement credit, which accounts for the value of deferring the replacement of baseline equipment by some number of years (lifetime of equipment minus remaining useful life of existing equipment). The deferred replacement credit is subtracted from the incremental costs of RET measures. In contrast, replace-on-burnout (ROB) measures, sometimes referred to as lost-opportunity measures, are replacements of existing equipment that have failed and must be replaced, or they are existing processes that must be renewed. Because the failure of the existing measure requires a capital investment by the customer, the cost of implementing ROB measures is always incremental to the cost of a baseline (and less efficient) measure.

Retrofit and ROB measures have a different meaning for technical potential compared with new construction measures. In any given year, we use the entire building stock for the calculation of technical potential.[16] This method does not limit the calculated technical potential to any pre assumed rate of adoption of retrofit measures and assumes that all ROB equipment is instantly eligible for replacement. Existing building stock is reduced each year by the quantity of demolished building stock in that year and does not include new building stock that is added throughout the simulation. For RET and ROB measures, annual potential is equal to total potential, offering an instantaneous view of technical potential. The team used Equation D-3 to calculate technical potential for RET and ROB measures.

Equation D-3. Annual/Total RET/ROB Technical Savings Potential

Total Technical Potential = Existing Building Stock$_{YEAR}$ (e.g., buildings[17]) X Measure Density (e.g., widgets/building) X Savings$_{YEAR}$ (e.g., kWh/widget) X Technical Suitability (dimensionless)

D.2 Competition Groups

General characteristics of competing technologies used to define competition groups in this study include the following:

- Competing efficient technologies share the same baseline technology characteristics, including baseline technology densities, costs, and consumption
- The total (baseline plus efficient) measure densities of competing efficient technologies are the same
- Installation of competing technologies is mutually exclusive (i.e., installing one precludes installation of the others for that application)
- Competing technologies share the same replacement type (RET, ROB, or NEW)

[16] In some cases, customer-segment-level and end use-level consumption/sales are used as proxies for building stock. These consumption/sales figures are treated like building stock in that they are subject to demolition rates and stock-tracking dynamics.

[17] Units for building stock and measure densities may vary by measure and customer segment (e.g., 1,000 square feet of building space, number of residential homes, customer-segment consumption/sales, etc.).

To address the overlapping nature of measures within a competition group, Guidehouse's analysis only selects one measure per competition group to include in the summation of technical potential across measures (e.g., at the end use, customer segment, sector, service territory, or total level). The measure with the largest energy savings potential in a given competition group is used for calculating total technical potential of that competition group, regardless of the customer economics or cost-effectiveness of that measure. This approach confirms the aggregated technical potential does not double-count savings. However, the model still calculates the technical potential for each individual measure outside of the summations. Although measure savings are not double counted, this approach does not consider savings interaction between measures. For example, if a high efficiency air conditioner is installed in a house with poor insulation or a leaky envelope, the potential savings for retrofitting those components after the new air conditioner is installed will be less than if they were installed first. These interactive effects are addressed when calculating achievable potential.

In practice, some measures have within-end use interactive effects that are not accounted for in technical potential, leading to the technical and economic potential to be higher than practicable. These interactive effects occur when the installation of one measure would reduce the savings for other measures after installation, despite the measures not competing directly. The whole is less than the sum of its parts. An example of this is with HVAC and insulation measures. When installed in a home without upgraded insulation, evaporative cooling would save more energy per year relative to a home with upgraded insulation. The same is true for the savings of an insulation measure in a home with a baseline air conditioner versus a home with evaporative cooling. Because the order of installation matters when assigning the discount factor to the applied savings, it does not make sense to evaluate these interactive effects when the stock can turnover instantly, as is the case for technical and economic potential. The sum of technical or economic potential over measures that interact will be overstated.

D.3 Technical Potential Results

D.3.1 Results by Customer Segment

The electric energy and electric demand technical potentials shown in Figure D-1 and Figure D-2, respectively, are broken out for each of the customer segments. Attachment A: Measure Inputs provides the associated data. These figures show that technical potential is roughly split between the residential segments and commercial segments, with single family homes and offices as the largest contributors. The growth in potential for the commercial segments is the largest contributor to the increase in technical savings potential due to the projected sales growth in those segments of the time horizon of the study. The main contributors to potential in the commercial segment are HVAC measures, with high efficiency central heat pumps, HVAC variable frequency drives, roof top units with demand control, high efficiency chillers, and packaged terminal air conditioners leading the way. Compared to studies in the region over the past few years, technical potential for lighting measures such as LEDs are lower in the portfolio for both the commercial and residential sectors. This is being driven by the rapid adoption of these technologies over the past few years, as demonstrated through Guidehouse's recent primary research showing LEDs as a high percentage of existing commercial lighting technologies.

Figure D-1. Electric Energy Technical Potential by Customer Segment (GWh/year)

Res-Manufactured

2,000 1,800 1,600 1,400 1,200

Ind-Agriculture

1,000 800

Com-Warehouse

Com-School

600

Com-Retail

Com-Restaurant

400

Com-Other

200

Com-Office

Com-Mining/Oil & Gas Extraction

0

Res-Single Family Low Income

Com-Lodging

Res-Single Family

Com-Health

Res-Multi Family Low Income

Com-Grocery

Res-Multi Family

Com-College

Ind-Manufacturing

Source: Guidehouse Analysis 2021

Figure D-2. Electric Demand Technical Potential by Customer Segment (MW)

Com-Warehouse
Com-School
Com-Retail
700 600 500 400 300 200 100 0
Com-Restaurant
Com-Other
Res-Manufactured
Com-Office
Res-Single Family Low Income
Com-Mining/Oil & Gas Extraction
Res-Single Family
Com-Lodging
Res-Multi Family Low Income
Com-Health
Res-Multi Family
Com-Grocery
Ind-Manufacturing Ind-Agriculture
Com-College

Source: Guidehouse Analysis 2021

D.3.2 Results by Measure

The measure-level savings potential Figure D-3 and Figure D-4 show is after adjustments are made due to competition groups. Attachment A: Measure Inputs provides the associated data. This is consistent with the aggregate results shown above. However, for the achievable potential scenarios, measures gain market share relative to their economic characteristics rather than their savings potential alone; measures will be included in the achievable potential forecast that are not shown in the technical and economic potential.

These figures present the top 40 measures ranked by their technical savings potential in 2030. The top measures for electric energy technical potential are led by HVAC and building envelope measures in the residential and commercial sectors. This is due to low efficient saturation of these measures and that technical and economic potential does not account for within-end use interactive effects. In the industrial sector, the top measure is VFDs on fans and pumps. In the lighting end use, the top measure is networked/connected LEDs rather than lighting retrofits,

which is due to the high penetration of efficient lighting technologies already in the building stock.

Figure D-3. Top 40 Measures for Electric Energy Technical Potential in 2030 (GWh/year)

Res - Evaporative Cooling
Com - High Efficiency Central Heat Pump System
Ind - VFDs on Industrial Fans and Pumps
Ind - Progressive Cavity Pumps
Com - HVAC Variable Frequency Drives
Com - RTU with Demand Control
Res - Duct Sealing
Res - High Efficiency VRF Heat Pump equipment
Res - Networked/ Connected - Indoor LED Lamp
Com - Chillers (air cooled, centrifugal, scoll/screw)
Com - High Efficiency Packaged Air Conditioning
Res - High Efficiency Air Conditioner
Res - Attic Insulation
Com - Packaged Terminal Heat Pumps
Com - Direct Evaporative Pre-Cooling
Com - Interior LED Linear Fixture/Retrofit Kit (includes Troffers)
Res - Central AC/Heat Pump Quality Installation Verification
(QIV)

Res - Heat Pump Water Heater
Res - ENERGY STAR Windows
Res - Whole House Fans
Res - LED Lamps (General Service Lamps including A Lamps,…
Res - Home Energy Report (Energy Feedback Residential)
Com - Interior Network Connected LED Fixtures
Com - Room Air Conditioners
Com - Custom cooling
Com - Custom motors
Com - Interior Linear Lamp (including high, medium, low bay lamps)
Com - New Construction - Lighting Power Density
Res - Infiltration Reduction
Res - Interior operable storm windows
Com - ECM motors for reach-in and walk-in coolers and freezers
Com - Interior Network Connected LED Lamps
Com - Interior Lighting Controls: occupancy/daylight sensors
Com - Interior LED Fixture - Other (includes all other LED fixtures…
Com - Exterior LED fixture
Ind - Air Compressor Optimization
Res - Low-emissivity coating for standard windows
Res - Wall Insulation
Com - Zero-Energy Doors
Res - Solar Water Heater

Source: Guidehouse Analysis 2021

Figure D-4. Top 40 Measures for Electric Demand Technical Potential in 2030 (MW)

Res - Evaporative Cooling
Com - High Efficiency Central Heat Pump System
Com - RTU with Demand Control
Res - ENERGY STAR Windows
Com - High Efficiency Packaged Air Conditioning
Res - High Efficiency Air Conditioner
Com - Packaged Terminal Heat Pumps
Com - Direct Evaporative Pre-Cooling
Com - Chillers (air cooled, centrifugal, scoll/screw)
Res - Smart Thermostat
Ind - Progressive Cavity Pumps
Com - Room Air Conditioners
Res - Central AC/Heat Pump Quality Installation Verification…
Res - Duct Sealing
Com - Interior LED Linear Fixture/Retrofit Kit (includes…
Com - HVAC Variable Frequency Drives
Res - Low-emissivity coating for standard windows
Res - Attic Insulation
Res - Networked/ Connected - Indoor LED Lamp
Com - Interior Network Connected LED Fixtures
Com - Low-flow Faucet Aerator
Ind - Air Compressor Optimization
Com - New Construction - Lighting Power Density
Com - Interior Linear Lamp (including high, medium, low…

Res - Home Energy Report (Energy Feedback Residential)
Res - LED Lamps (General Service Lamps including A…
Com - Interior LED Fixture - Other (includes all other LED…
Com - Interior Lighting Controls: occupancy/daylight sensors
Ind - VFDs on Industrial Fans and Pumps
Com - Interior Network Connected LED Lamps
Com - Custom cooling
Res - Infiltration Reduction
Res - Central Air Conditioner Tune-up
Com - DX RTU Unit of varying sizes
Com - Exterior LED fixture
Res - Heat Pump Water Heater
Com - LED Refrigerated Case Lighting
Com - Custom motors
Com - Water Source Heat Pump
Res - Wall Insulation

Source: Guidehouse Analysis 2021

Appendix E. Energy Efficiency Economic Potential

This appendix details the economic potential task.

E.1 Economic Potential TRC and UCT

The model used Equation E-1 and Equation E-2 to calculate the TRC benefit-cost ratio.

Equation E-1. Benefit-Cost Ratio for TRC

�������� = ����(����������������������������
����������� + ����&���� �������� ��������)
����(����ℎ ���� ���� �������� + ���������������
������������)

Equation E-2. Benefit-Cost Ratio for UCT

UCT =����(����������������������������
������������)
����(+ ��������������� ������������)

Where:

- *PV( )* is the present value calculation that discounts cost streams over time.
- *Avoided Costs* are the monetary benefits resulting from electric savings (e.g., avoided costs of infrastructure investments and avoided commodity costs due to electric energy conserved by efficient measures).
- *O&M Savings* are the non-energy benefits such as operation and maintenance cost savings.
- *Technology Cost* is the incremental equipment cost to the customer.
- *Admin Costs* are the administrative costs incurred by the utility or program administrator.
- *Incentives* are measure-level incentives that are provided to the customer for adopting the measures.

Guidehouse calculated TRC and UCT ratios for each measure based on the present value of benefits and costs (as defined above) over each measure's life. Although the equations for TRC and UCT include administrative costs, the study does not consider these costs during the measure-level economic screening process because an individual measure's cost-effectiveness on the margin is the primary focus. Guidehouse also excluded measure-level administrative costs from this analysis because those costs are largely driven by program design, which is outside of the scope of this assessment. The team included program and portfolio administrative costs, estimated from Xcel Energy's historic administrative costs, d in program and portfolio budgets to provide a more accurate picture of expected total portfolio spending. These administrative spending levels are held constant over time and across all scenarios.

Similar to technical potential, only one economic measure (meaning that its TRC/UCT ratio meets the threshold) from each competition group is included in the summation of economic potential across measures (e.g., at the end use category, customer segment, sector, service territory, or portfolio level). If a competition group is composed of more than one measure that

passes the TRC/UCT test, then the economic measure that provides the greatest savings potential is included in the summation of economic potential. This approach confirms double counting is not present in the reported economic potential, though economic potential for each individual measure is still calculated and reported outside of the summation.

E.2 Economic Potential Results

E.2.1 Results by Customer Segment

Figure E-1 and Figure E-2 depict the economic electric energy and electric demand savings potential for all customer segments. Attachment A Measure Inputs provides the corresponding measure input data. The warehouse segment sees the greatest loss from non-economic potential, while the lodging segment is the most resilient. As mentioned previously, industrial measures largely pass the economic screen. The mix of economic potential from the C&I segments does not change appreciably relative to the technical potential.

Figure E-1. Electric Energy Economic Potential by Customer Segment (GWh/year)

1,400 1,200 1,000 800
600
400
200
0
Res-Manufactured
Res-Single Family Low Income
Res-Single Family

Res-Multi Family Low Income
Res-Multi Family
Ind-Manufacturing
Ind-Agriculture
Com-Warehouse
Com-School
Com-Retail
Com-Restaurant
Com-Other
Com-Office
Com-Mining/Oil & Gas Extraction
Com-Lodging
Com-Health

Com-Grocery Com-College

Source: Guidehouse Analysis 2021

Figure E-2. Electric Demand Economic Potential by Customer Segment (MW)

500

450 400 350 300 250 200 150 100

50

0

Res-Manufactured
Com-School
Com-Retail
Com-Restaurant
Com-Other
Com-Office
Com-Mining/Oil & Gas Extraction
Com-Lodging
Com-Health
Com-Grocery
Com-College

Res-Single Family Low Income
Res-Single Family
Res-Multi Family Low Income
Res-Multi Family
Ind-Manufacturing
Ind-Agriculture
Com-Warehouse

Source: Guidehouse Analysis 2021

E.2.2 Results by Measure

Figure E-3 and Figure E-4 show the measure-level economic electric energy and electric demand savings potential prior to adjustments Guidehouse made to competition groups as detailed in the previous section. These figures highlight the economic potential from the top 40 highest-impact measures. Compared with electric energy technical potential, the fourth measure (Ind – Progressive Cavity Pumps) and the fifth measure (Com – HVAC Variable Frequency Drives) screen out as non-cost-effective. Other measures in the list move up or down depending on whether they pass economic screening in all customer segments, or if measures they were competing with are not cost-effective (e.g., residential LED lamps replace residential network/connected LEDs).

As the number one highest saving measure in both technical and economic potential, residential evaporative cooling is worth further consideration. The high savings relative to compressor based air conditioning, low efficient saturation, and lower upfront costs increase the potential and ensure that it screens the economic test. However, part of the reason for the low efficient

saturation of evaporative cooling is due to market barriers, including customer perceptions (or misperceptions), acceptance, customer awareness, and contractor awareness. Older generation units used more water, a major downside in the southwest. Because of the large education and preference gap around evaporative cooling, Achievable Potential for these measures tends to be much more limited. Please review these results in the Energy Efficiency Achievable Potential section.

Figure E-3. Top 40 Measures for Electric Energy Economic Potential in 2030 (GWh/year)

Source: Guidehouse Analysis 2021

Figure E-4. Top 40 Measures for Electric Demand Economic Potential in 2030 (MW)

windows
Res - Attic Insulation
Res - Networked/ Connected - Indoor LED Lamp
Com - Interior Network Connected LED Fixtures
Com - Low-flow Faucet Aerator
Ind - Air Compressor Optimization
Com - New Construction - Lighting Power Density
Com - Interior Linear Lamp (including high, medium, low…
Res - Home Energy Report (Energy Feedback Residential)
Res - LED Lamps (General Service Lamps including A…
Com - Interior LED Fixture - Other (includes all other LED…
Com - Interior Lighting Controls: occupancy/daylight sensors
Ind - VFDs on Industrial Fans and Pumps
Com - Interior Network Connected LED Lamps
Com - Custom cooling
Res - Infiltration Reduction
Res - Central Air Conditioner Tune-up
Com - DX RTU Unit of varying sizes
Com - Exterior LED fixture
Res - Heat Pump Water Heater
Com - LED Refrigerated Case Lighting
Com - Custom motors
Com - Water Source Heat Pump
Res - Wall Insulation

Source: Guidehouse Analysis 2021

Figure E-5 and Figure E-6 provide a supply curve of savings potential versus levelized cost of savings for all measures considered in the study. To show the most relevant measures and improve readability, these curves have been shortened to show only those measures with a levelized cost below a certain threshold—the full curve would extend beyond this to measures with more costly savings. For electric energy, the vast majority of savings occur at a levelized cost between $0.001/kWh and $0.09/kWh. The majority of electric demand savings occur at a levelized cost between $2/kW and $150/kW.

Figure E-5. Electric Energy Economic Potential LCOE Supply Curve in 2030

$0.30
$0.25
$0.20
$0.15
$0.10

$0.05

$0.00

0 50 100 150 200 250 300 350 400 450 Cumulative Potential (GWh/year)

Source: Guidehouse Analysis 2021

Figure E-6. Electric Demand Economic Potential LCOE Supply Curve in 2030

$1,000

$900

$800

$700

$400

$300

$200

$100

$0

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 Cumulative Potential (MW)

$600

$500

Source: Guidehouse Analysis 2021

Appendix F. Energy Efficiency Achievable Potential

This appendix describes Guidehouse's approach to calculating achievable energy efficiency potential and presents the results for Xcel Energy's New Mexico service territory.

F.1 Approach to Estimating Achievable Potential

This section provides a high-level summary of the approach to calculating gross achievable potential. The adoption of energy efficiency measures can be broken down into calculation of the equilibrium market share and calculation of the dynamic approach to equilibrium market share. This section also provides an overview of the sensitivity analysis and model calibration process.

F.1.1 Calculation of Equilibrium Market Share

The equilibrium market share can be thought of as the percentage of individuals that would choose to purchase a technology provided those individuals are fully aware of the technology and its relative merits (e.g., the energy- and cost-saving features of the technology). In this context – fully aware means ready and capable of making an informed purchase decision. For energy efficiency measures, a key differentiating factor between the base technology and the efficient technology is the energy and cost savings associated with the efficient technology. Of course, that additional efficiency often comes at a premium in initial cost, meaning that it can take some time for the higher efficiency to pay off. Equilibrium market share is calculated as a function of the payback time of the efficient technology relative to the inefficient technology. This approach allows Guidehouse to estimate the market share for the dozens or even hundreds of technologies that are often considered in potential studies.

In this potential study, Guidehouse used equilibrium payback acceptance curves that were developed using primary research conducted in the fall of 2020 in Xcel Energy's New Mexico service territory. Guidehouse used surveys of 652 residential, and 214 C&I customers' preference to define the payback acceptance curves at the end-use and sector level. In the surveys, customer decision makers were asked about the quantity of various end uses within their home or business to inform density and saturation estimates, and then were asked whether they would be likely to make investments in energy efficiency upgrades based on a variety of project costs and expected annual energy savings. This willingness to pay question battery is typical of discrete choice experiments and designed to elicit the customer's inherent response to different economic returns. Guidehouse conducted statistical analysis on these responses to develop a set of payback acceptance curves for each customer segment/end use combination which were used in this potential study.

Figure F-1 shows an example of a payback acceptance curve for residential HVAC measures fitted to customer responses in the New Mexico territory. In this example, even at a payback period of 0 (i.e. the cost of the efficient technology after incentives is equivalent to the cost of the baseline technology), approximately 77% of customers would choose to install the efficient technology. This indicates that there are additional considerations or barriers beyond just cost that impact whether or not a particular customer is willing to install the efficient technology.

Figure F-1. Example of Payback Acceptance Curve for Residential HVAC Measures

0.9
0.8
0.7
0.6
0.2
0.1
0
0.5
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 6.5 7 7.5 8
0.4
8.5 9 9.5 10 Payback Time in Years
0.3

Since the payback time of a technology can change over time, as technology costs or energy costs change over time, the equilibrium market share can also change over time. The equilibrium market share is recalculated for every year of the forecast to ensure the dynamics of technology adoption take this effect into consideration. As such, equilibrium market share is a bit of an oversimplification since the whole system is dynamic. Thus, the equilibrium refers to the long-run market share at each time step in the model.

F.1.2 Retrofit and New Construction Technology Adoption Approach

Retrofit technologies employ an enhanced version of the classic Bass diffusion model[18,19] to simulate the S-shaped approach to equilibrium that is observed again and again for technology adoption. Figure F-2 provides a stock/flow diagram illustrating the causal influences underlying the Bass model. In this model, market potential adopters flow to adopters by two primary mechanisms – adoption from external influences, such as marketing and advertising, and adoption from internal influences, or word-of-mouth. The fraction willing to adopt was estimated using the payback acceptance curves Figure F-2 illustrates.

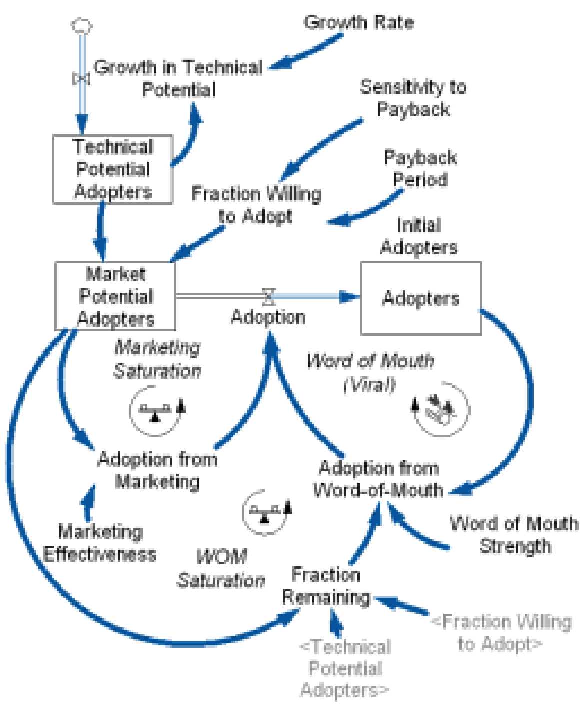
The marketing effectiveness and word-of-mouth parameters for this diffusion model were estimated drawing upon case studies where these parameters were estimated for dozens of

[18] Bass, Frank (1969). "A new product growth model for consumer durables". Management Science 15 (5): p215–227.

[19] See Sterman, John D. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin McGraw Hill. 2000. p. 332.

technologies.[20] Recognition of the positive, or self-reinforcing, feedback generated by the word of-mouth mechanism is evidenced by increasing discussion of the concepts such as social marketing as well as the term viral, which has been popularized and strengthened most recently by social networking sites such as Twitter, Facebook, and YouTube. However, the underlying positive feedback associated with this mechanism has been ever present and a part of the Bass diffusion model of product adoption since its inception in 1969.

Figure F-2. Stock/Flow Diagram of Diffusion Model for Retrofits



Source: Guidehouse

F.1.3 Replace-on-Burnout (ROB) Technology Adoption Approach

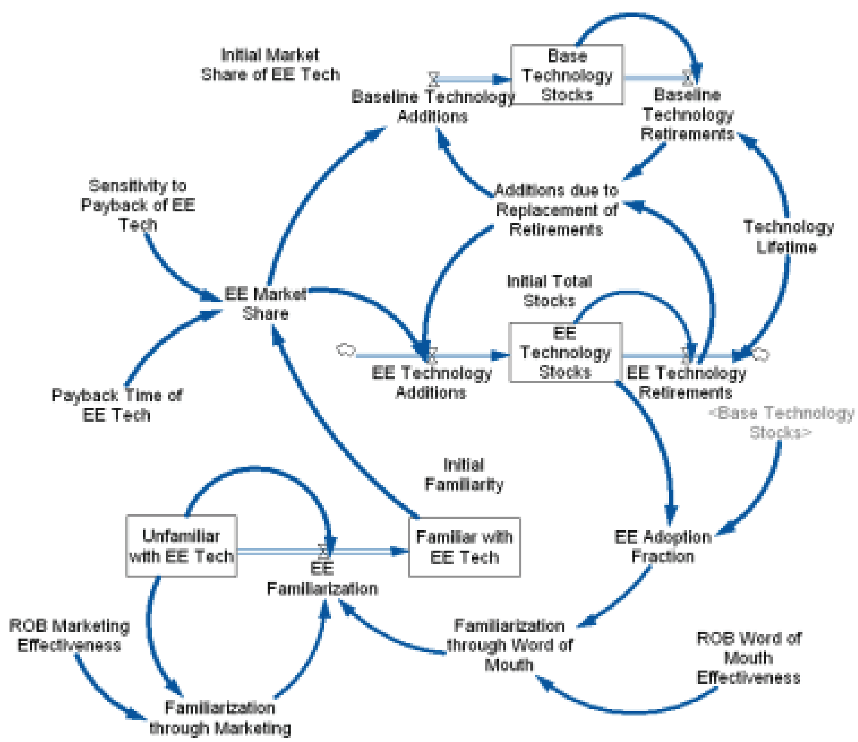
The dynamics of adoption for ROB technologies is somewhat more complicated than for NEW/RET technologies since it requires simulating the turnover of long-lived technology stocks. The DSMSim™ model tracks the stock of all technologies, both base and efficient, and explicitly

[20] See Mahajan, V., Muller, E., and Wind, Y. (2000). New Product Diffusion Models. Springer. Chapter 12 for estimation of the Bass diffusion parameters for dozens of technologies. This model uses a value of 0.10 for the word

of-mouth strength in the base case scenario. The Marketing Effectiveness parameter for the base case scenario varied between 0.019 and 0.048, depending on the sector (values were determined as part of the calibration process). These values compare reasonably with the "most likely" value of 0.021 (75th percentile value is 0.055) per Mahajan 2000.

calculates technology retirements and additions consistent with the lifetime of the technologies. Such an approach ensures that technology churn is considered in the estimation of market potential, since only a fraction of the total stock of technologies are replaced each year, which affects how quickly technologies can be replaced. A model that endogenously generates growth in the familiarity of a technology, analogous to the Bass approach described above, is overlaid on the stock tracking model to capture the dynamics associated with the diffusion of technology familiarity. Figure F-3 illustrates a simplified version of the model employed in DSMSim™.

Figure F-3. Stock/Flow Diagram of Diffusion Model for ROB Measures



Source: Guidehouse

F.1.4 Approach to Applying Customer Incentives

One of the most important drivers for estimating gross achievable potential is the approach that is taken for modeling incentives. Through various discussions with the Xcel Energy over the course of this project, Guidehouse chose the percentage of incremental cost approach for applying incentives in the model. This is where the rebate levels are set as a fixed percentage of the incremental cost of installing the efficient measure. Under this approach, the level of savings would be achieved by paying some level (say at 50% or 70%) of incremental costs. It is be possible to set the rebates at different levels, depending on the sector or end uses that are

modeled. For example, there may be policy reasons why it would make sense to set rebate levels at higher amounts for end uses that would target markets that are in the highly inefficient category.

For this potential study, Xcel Energy provided Guidehouse with historic project and incentive costs where they were available through program tracking data. Guidehouse used the actual historical values as initial values where applicable. Some values were further tuned in the model calibration process.

F.1.5 Model Calibration

Any model simulating future product adoption faces challenges with calibration, as there is no future world against which one can compare simulated with actual results. For this potential study, Guidehouse took a number of steps to ensure that forecast model results were reasonable, including:

- A comparison of 2015-2020 historic program savings values by sector and end use against Guidehouse's modeled program gross savings potential.
- Due to natural year-over-year variations in program achievement, rather than calibrating to a point estimate (i.e., tuning the model's 2020 potential to Xcel Energy's achieved 2020 savings), Guidehouse looked at the savings trend over the past 5 years of program achievement and calibrated the model to match the trend data.
- Guidehouse modeled program incentive spending by using the historic Xcel Energy program incentive spending as a percentage of program cost.

Guidehouse adjusted model parameters, including assumed incentive levels and technology diffusion coefficients, to obtain close agreement across a wide variety of metrics compared for the Reference scenario. This process ensures that forecast gross potential is grounded against real-world results considering the many factors that come into play in determining the likely adoption of energy efficiency measures, including both economic and non-economic factors.

Figure F-4 and Figure F-5 show the historic program savings from 2015-2020 by end use for the residential sector and C&I sectors, respectively, combined with the modeled gross achievable potential from 2021-2030. Xcel Energy's rapid expansion of residential customer programs in 2017—and in particular residential lighting—can be seen clearly in Figure F-4. This plus the long lifetime of LEDs has led to a rapid increase in efficient lighting saturation in residential homes over the last few years for the most common lighting categories, as Guidehouse measured in our primary data collection effort. This is discussed further in the following section.

There are several additional technologies in the potential study that were not a part of Xcel Energy's portfolio of measures in the past, so these graphs are representative of only measures that overlap between the two sets of measures. Once the calibration parameters were tuned using this overlapping set of data, Guidehouse assumed values for these calibrated parameters

were representative of measures within the same sector and end use that did not have any historic savings data.

Figure F-4. Historic and Modeled Achievable Savings for Residential Sector (representative of only measures that overlap between potential study and historic program data)

Residential HVAC
20

Residential Lighting

15

35
Historic Program Data Gross Achievable
Potential Forecast

10

Residential Appliance
30

5

0

Residential Energy Feedback

Residential Envelope
25

Residential Hot Water

Source: Guidehouse Analysis

Figure F-5. Historic and Modeled Achievable Savings for C&I Sectors (representative of only measures that overlap between potential study and historic program data)

Historic Program Data Gross Achievable

Potential Forecast 60

C&I Motors and Drives
50

20

10

Commercial Cooling
Commercial Custom
Commercial Lighting
40

0

30

Source: Guidehouse Analysis

The next section on efficient technology saturation will discuss why the gross potential starts to decrease in the later years of the study period.

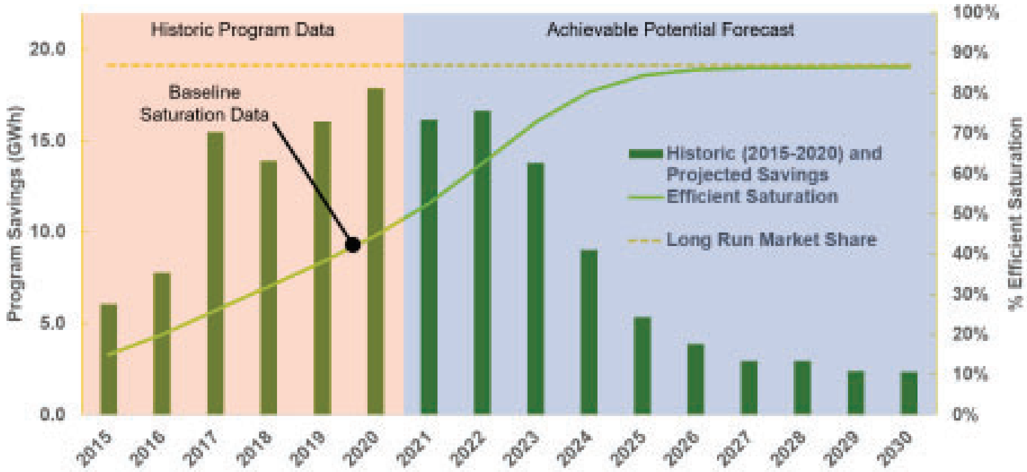
F.1.6 Efficient Equipment Saturation

As discussed in the calculation of equilibrium market share section above, the market potential of an efficient measure at any given point in the forecast is a function of four things: the percentage of customers that are aware of the efficient measure, the incremental cost of installing the efficient measure, the savings associated with the efficient measure over its baseline counterpart, and the customer's willingness to install the efficient measure based on its payback period. Once all customers are aware of a measure, unless the measure's cost decreases or savings increases, the efficient market share will not be greater than where it lands on the payback acceptance curve (e.g., Figure F-1). This is the equilibrium or long-run market share. Guidehouse calculated the current market share, or saturation of efficient

measures from the aforementioned virtual audits. As customers adopt efficient measures over time, the efficient market share begins to approach the equilibrium market share, at which point there would be no more gross achievable potential since all the customers that were willing to adopt already have. The gross achievable potential remaining for any given measure is a function of its initial efficient saturation.

Figure F-6 provides an example of this for residential LED measures. Guidehouse calculated from the survey responses that the initial saturation of LEDs (as of 2020 year-end) in the residential sector is approximately 47%. Guidehouse then calculated the equilibrium, or long run market share, for LEDs in the residential sector as approximately 87%, based on survey responses along with cost and savings assumptions. Based on this information, the market is more than halfway to the maximum gross achievable potential for this measure and starting to reach the point where acquiring each additional adopter is getting more difficult. The graph shows that the annual gross achievable potential starts declining rapidly in about 2023 as the market approaches the equilibrium market share and stabilizes in approximately 2027 when all savings are coming from new construction or replace on burnouts of existing LEDs.

Figure F-6. Residential Lighting Example of Efficient Saturation Effects on Gross Achievable Potential



Source: Guidehouse Analysis

While particularly relevant for residential LED measures due to the clear ramp up in program activity shown above, this phenomenon is present with many of the top saving measures in the study and clearly illustrates why annual gross achievable potential is declining towards the latter years of the study, as evidenced by Figure F-4 and Figure F-5 and in the next section of this report. Table F-1 shows the trend of efficient saturation over time for the top 10 measures in terms of cumulative energy savings in 2030.

Table F-1. Efficient Saturation Trend for Top 10 Measures

	Ind - VFDs on
Industrial Fans and Pumps	9% 20% 33% 47% 60% 71% 79% 84% 87% 89%
Res - Duct	
	Sealing 18% 27% 37% 47% 56% 63% 68% 71% 73% 74%
Res - LED Lamps (General Service Lamps including A Lamps, Specialty Lamps)	
Res - Evaporative Cooling	11% 11% 12% 12% 13% 14% 15% 17% 18% 19% 54%
Res - Central AC/Heat Pump Quality Installation Verification (QIV)	59% 64% 69% 74% 77% 80% 81% 82% 83%
Com - Interior Linear Lamp (including high, medium, low bay lamps)	
Res - Infiltration 45% 53% 63% 73% 80% 84% 86% 86% 86% 86%	
	62% 66% 68% 71% 72% 74% 75% 76% 78% 79%

Reduction 48% 54% 60% 66% 70% 74% 76% 77% 78% 78% Com - High
Efficiency 21% 23% 25% 27% 29% 30% 32%
Central Heat Pump System

Com -
Packaged
Terminal Heat Pumps

Com - Custom
0% 0% 0% 0% 1% 2% 2% 3% 4% 4% 16% 17% 19%

cooling 22% 25% 28% 32% 36% 40% 44% 47% 49% 51% *Source: Guidehouse Analysis*

By 2030, all but two of the technologies in Table F-1 are getting to within 5%–10% of the long run equilibrium market share. Measures with high potential tend to be ones with high unit energy savings, a gap between initial efficient saturation and the long run market share, and strong customer economics. The measures that do not see saturation reaching the long run market share are evaporative cooling and high efficiency heat pump. Evaporative cooling is in a competition group with three other cooling technologies, so it is sharing the market with other

efficient technologies. These measures also tend to be difficult to market to customers that already have central air conditioning. While the per unit potential for commercial high efficiency heat pumps is high, there are a few reasons why their adoption is slower than other measures. First, they do not pass cost effectiveness screening until halfway through the study and even then, the customer economics are not as attractive as other measures, especially for a measure with high upfront costs. Our primary data on commercial customers in New Mexico indicated a low willingness to adopt for HVAC measures with high upfront costs and a long payback period.

F.1.7 Sensitivity Analysis

As with all modeling exercises, there is a certain amount of uncertainty associated with the inputs feeding the model. Xcel Energy was interested in looking at the sensitivity of gross potential to four specific data-driven inputs: measure density, initial efficient saturation, sales forecast, and payback acceptance. Guidehouse performed a sensitivity analysis on these four parameters to determine the relative impact of each on overall gross potential. Each parameter was varied by either:

- The upper and lower bounds of the 80% confidence interval around the mean of the distribution of the data, which was calculated from survey responses (i.e., payback acceptance, density, saturation).

- A fixed percentage deemed where no distribution could be directly sampled (i.e., sales forecast).

The sensitivity analysis results in Figure F-7 show that variations in the payback acceptance, or customers' willingness to purchase an efficient technology given a certain economic return on their upfront investment, has the potential to be more influential than the other three parameters on potential future energy savings. Interestingly, since underlying customer preferences are at the root of this result, it may be one on which program administrators have little influence.

Figure F-7. Sensitivity of Gross Savings Potential to Modeling Parameters

Acceptance

-24% +18%

Sales

Density

Saturation All

Source: Guidehouse Analysis

High Potential Low Potential

Cumulative Gross achievable potential in 2030

There are many variables beyond payback period that impact why a customer may or may not decide to adopt an efficiency measure, many of which are completely out of the program administrator's ability to impact through their program and outreach. This could include perceived or real comfort impacts, political or social factors, uncertainty around adopting something perceived to be a new technology, perceptions of technology performance, and many more. Given the complexity of this issue, Guidehouse does not have justification to make an assertion that either the high or low end of the sensitivity is more likely to occur. These results are intended to explore the importance of these variables on gross achievable potential and demonstrate the usefulness of conducting primary data collection on these variables to give them a strong empirical basis.

F.2 Achievable Potential Savings – Reference Scenario

This section provides results pertaining to the reference scenario for electric gross achievable potential at different levels of aggregation. Results are shown by sector, customer segment, end use, and by highest-impact measures. The Reference Scenario was deemed to represent a business as usual case, whereby Xcel Energy would continue implementing their energy efficiency programs at comparable funding levels and for the most part continue to realize the energy savings that they have experienced from the past.

F.2.1 Results by Sector

Gross achievable potential accounts for the rate of energy efficiency acquisition. As Figure F-9 and Table F-2 show, gross achievable potential grows from 0.6 percent in 2021 to 3.8% of forecast net electric sales by 2030, or 0.42% per year on average over the potential study time horizon,[21] under the reference scenario. Figure F-10 and Table F-3 provide the comparable information for peak demand, with reductions growing from 0.5% in 2021 to 4.9% of forecast peak demand in 2030, or 0.54% per year on average over the same time horizon.

Values shown below for gross achievable potential are termed cumulative achievable potential, in that they represent the accumulation of each year's annual incremental gross achievable potential. As an example, an annual gross achievable potential of 0.42% per year, for 9 years, would result in a cumulative gross achievable potential of 3.8% of forecast sales. Economic potential, as defined in this study can be though of as a theoretical upper limit on potential if 100% of customers were willing to adopt the efficient measure regardless of payback and they chose to install the highest saving measure within a competition group (this is discussed in more detail in the Technical and Economic Potential chapters). The long run market potential considers customers' willingness to pay for an efficient measure and can be thought of as a bucket of potential from which programs can draw over time. Gross achievable potential represents the draining of that bucket, the rate of which is governed by a number of factors, including the lifetime of measures (for ROB technologies), market effectiveness, incentive levels, and customer willingness to adopt, among others. If the cumulative gross achievable

[21] The time horizon for the Potential Study is 2021-2030 (9 years).

potential ultimately reaches the economic potential, it will signify that all long run market potential in the bucket had been drawn down or harvested. Achievable electric potential reaches 3.8% of forecast sales by 2030, meaning that approximately one-quarter of economic potential has been harvested by the end of the potential study period (which represents 13.4% of sales in 2030).

While the residential sector represents a lower percentage of overall sales in the service territory, the gross potential as a percentage of sector consumption is significantly higher than the C&I sectors. This is driven largely by the fact that nearly half of the total sales in the C&I sectors are from the Mining/Oil & Gas Extraction segment, where there are significant hurdles in obtaining adoption of efficiency measures and opportunities for efficiency are more limited than in other customer segments.

Figure F-8. Total Electric Cumulative Gross Achievable Potential as a Percentage of Forecast Electric Sales

14%

10%
8%
6%
4%
2%
0%

Commercial Industrial Residential

12%

Source: Guidehouse Analysis

Table F-2. Total Electric Cumulative Gross Achievable Potential as a Percentage of Electric Sales

2021	0.6%	0.3%	0.8%	1.7%
2022	1.2%	0.6%	1.5%	3.6%
2023	1.7%	1.0%	2.2%	5.4%
2024	2.2%	1.3%	2.7%	6.9%
2025	2.6%	1.6%	3.2%	8.3%
2026	2.9%	1.8%	3.6%	9.4%
2027	3.2%	2.0%	3.8%	10.4%
2028	3.4%	2.1%	3.9%	11.3%
2029	3.6%	2.3%	4.0%	12.0%
2030	3.8%	2.4%	4.0%	12.5%

Source: Guidehouse Analysis

Figure F-9. Total Electric Cumulative Gross Achievable Potential as a Percentage of

Forecast Electric Peak Demand

16.0%

14.0%

Commercial Industrial Residential

12.0%

10.0%

8.0%

6.0%

4.0%

2.0%

0.0%

Source: Guidehouse Analysis

Table F-3. Total Electric Cumulative Gross Achievable Potential as a Percentage of Electric Peak Demand

2021	0.5%	0.2%	0.2%	1.4%
2022	1.1%	0.6%	0.3%	2.9%
2023	1.7%	0.9%	0.5%	4.6%
2024	2.2%	1.3%	0.6%	6.1%
2025	2.7%	1.7%	0.7%	7.6%
2026	3.2%	2.0%	0.8%	9.1%
2027	3.7%	2.2%	0.9%	10.5%
2028	4.2%	2.5%	1.0%	11.9%
2029	4.6%	2.7%	1.0%	13.0%
2030	4.9%	2.9%	1.0%	14.1%

Source: Guidehouse Analysis

Figure F-11 and Table F-4 shows the magnitude (in GWh/year) of electric gross achievable potential by sector. Figure F-12 and Table F-5 provide the comparable information for peak demand gross achievable potential. All savings reported in this potential study are gross, rather than net, meaning that the effect of possible free ridership is not accounted for in the reported savings.

While gross potential as a percentage of sales is highest in the residential sector, the cumulative gross potential is highest in the commercial sector which accounts for a much higher proportion of sales (73%) than the residential sector.

Figure F-10. Cumulative Electric Gross Achievable Potential by Sector (GWh/year)

250

2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

Commercial Industrial Residential

200

150

100

50

0

Source: Guidehouse Analysis

Table F-4. Cumulative Electric Gross Achievable Potential by Sector (GWh/year)

2021	16	7	20
2022	40	15	42
2023	65	23	63
2024	94	31	81
2025	117	37	97
2026	137	42	111
2027	154	45	124
2028	168	47	137
2029	181	49	147
2030	191	50	155

Source: Guidehouse Analysis

Figure F-11. Cumulative Peak Demand Gross Achievable Potential by Sector (MW)

60

40

30

20

10

0

50

Commercial Industrial Residential

Source: Guidehouse Analysis

Table F-5. Cumulative Peak Demand Gross Achievable Potential by Sector (MW)

2021	2	0	4
2022	6	0	9
2023	10	1	15
2024	15	1	20
2025	19	1	24
2026	23	1	29
2027	27	1	34
2028	30	1	39
2029	34	2	44
2030	36	2	48

Source: Guidehouse Analysis

F.2.2 Results by Customer Segment

Figure F-13 shows the gross electric potential for each of the five residential customer segments from 2021-2030.

Figure F-12. Cumulative Gross Achievable Potential by Residential Customer Segment

180

160 140 120 100 80

60

40

20

0
Res-Manufactured
Res-Single Family Low Income
Res-Single Family
Res-Multi Family Low Income
Res-Multi Family

Source: Guidehouse Analysis

Residential single family, single family – low income, and manufactured homes make up the majority of potential over the course of the study. The proportion of savings from each residential segment largely mirrors the proportion of overall energy consumption. The tight correlation between savings and energy consumption is segments only having small differences in initial efficient equipment saturation between the residential segments in the surveys. Figure F-14 shows the gross electric potential for all of the C&I customer segments from 2021- 2030.

Figure F-13. Cumulative Gross Achievable Potential by Commercial Customer Segment

300
Ind-Manufacturing
Ind-Agriculture
Com-Warehouse
250 200 150 100 50

0
Com-School
Com-Retail
Com-Restaurant
Com-Other
Com-Office
Com-Mining/Oil & Gas Extraction
Com-Lodging
Com-Health
Com-Grocery
Com-College

Source: Guidehouse Analysis

Gross potential from the Office and Mining/Oil & Gas Extraction segments dominate the overall savings potential in the C&I sectors, representing 55% of the potential, even though this segment is hard to reach and includes equipment and loads not easily addressed though energy efficiency measures. Mining/Oil & Gas Extraction is slightly higher that Office, despite this segment consuming nearly double the energy as the Office segment. This is driven by the fact that there are fewer measures with energy efficiency potential available in the Mining/Oil & Gas Extractions segment compared to the Office segment. The proportion of potential from the other segments largely aligns with the proportion of their energy consumption except for the Agriculture segment, which consumes 5% of the energy but provides 14% of potential.

F.2.3 Results by End Use

Figure F-15 shows the residential sector gross potential by end-use for 2021-2030.

Figure F-14. Cumulative Gross Achievable Potential by Residential Sector End-Use

180

Whole Building

20

0

160 140 120 100 80

Lighting

Electronics

60

Space Heating and Cooling

Space Cooling

40

Hot Water

Source: Guidehouse Analysis

Lighting, space cooling, and space heating and cooling (which includes building envelope measures and heat pump measures) account for the majority of potential in the residential sector. Incremental lighting potential declines rapidly after 2023, at which point the high saturation of LEDs in the market make it difficult to obtain additional savings. Through the primary data collection, Guidehouse observed poor efficiency and older vintage stock of building HVAC equipment and envelope conditions. Combined with the high density of this equipment, this low observed saturation of efficient measures creates significant potential in these two areas through 2030.

Figure F-16 shows the gross potential savings by end use in the C&I sectors from 2021-2030.

Gridworks-provided Chat Log from Meeting

09:09:14 From Cynthia Mitchell : EV is on peak?
09:19:14 From Hall, James A : Did I hear your base case sales assumption for oil and gas is decreasing sales out to 2030?
09:19:52 From Cynthia Mitchell : Speak more to the economies of scale on your DR offerings; what again is your DR buildout forecast; what is cost per kW/year
09:25:45 From Cynthia Mitchell : When the O&G electrification forecast available; want to discuss with James on on site self gen electrification
09:34:18 From Jay Griffin : Include an increased demand response scenario
How are distributed resources considered in the modeling?
How is distributed generation considered in the load forecast and what costs are assigned?
How are distribution system investments treated in the model?
09:35:35 From Cynthia Mitchell : Good Q and point Jay…James Hall could speak to what being considered self-gen solar+battery
09:39:09 From Jim DesJardins : There is a new interconnection rule in Nm that includes smart inverters and there are TIIR proceedings going on now that SPS is part of.
09:40:20 From Jim DesJardins : What about the 45 MW of Community Solar that is allocated to SPS?
09:42:05 From Jim DesJardins : Why are DERs still considered load reduction?
09:42:24 From Jay Griffin : Jim - you're up next!
09:47:34 From Austin Rueschhoff : Case No. 22-00155-UT
09:50:42 From Jim DesJardins : Thank you Austin that summary of 22-00155-UT. REIA was also an intervenor, but case was mainly for larger users.
09:56:58 From Cynthia Mitchell : Back to Ben's bookend approach to load forecast, what forecast will be used for scenario analysis? I assume medium? Seems there would be value in trying to pencil in estimates of various types of self-gen, community solar, O&G, etc
09:58:30 From Cynthia Mitchell : Good point JIm
10:20:10 From Jacob Johnson : SPS IRP Modeling Request:https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu
10:20:18 From Cynthia Mitchell : Is your base scenario similar to your Tolk scenario in your rate case? To get to more specification in model sensitivity, could we see your base case?
10:22:01 From Hall, James A : Jay , will the Dshields email for gridworks work to share documents, thx
10:24:52 From Jay Griffin : James - yes that will work. Thank you!
10:24:57 From Gridworks : Hi James, yes , dshields@gridworks.org
10:25:16 From Hall, James A : thx
10:26:49 From Jeffry Pollock : The feedback form only allows 1 selection per item. It is typical that projections use a range of commodity prices (low, medium, high gas prices). So, should we assume that the feedback is for a specific modeling scenario?
10:32:48 From Jim DesJardins : Thank you. This was helpful. hope everyone has a good weekend and a good 4th.

July 6, 2023 Stakeholder Meeting

GRIDWORKS

Meeting #6, July 6, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

Approximately 30 stakeholder representatives from 22 different organizations plus a team of SPS/Xcel Energy professionals attended a meeting focused on developing input to Xcel Energy/SPS's Integrated Resource Plan. The purpose of the meeting was to prepare stakeholders to provide input to the Action Plan in August.

Key outcomes of the meeting were:

- ❑ Identification of stakeholder requests access to same software used by SPS (per the IRP Rule guidelines)
- ❑ Review of SoN input and first check on consensus among stakeholders
- ❑ Review draft modeling results to date and discussion of stakeholder requested runs
- ❑ Introduction of factors to consider in evaluating resource portfolios

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

- Agenda – 7/6/23
- Slide Deck – Gridworks/SPS IRP Stakeholder Meeting 7/6/23
- Slide Deck – Xcel/SPS IRP Stakeholder Engagement meeting 7/6/23
- Statement of Need Elements – 7/3/2
- Meeting recording: https://youtu.be/D8-wFUtRBcc
- This meeting summary
- SPS IRP Modeling Request (office.com), or https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu

Gridworks announced that any stakeholder who desires access to the same software as the utility, as provided for in the IRP Rule, notify info@Gridworks.org by midnight on July 6. No requests were received and as such, this item is now considered closed.

The Statement of Need (SoN) Interim Committee summarized the stakeholder input to date for the SoN. Feedback, including any elements that stakeholders do not agree with, was requested. Input on the document is welcome to mtatro@gridworks.org by July 20. An updated document will be made available for review prior to the Aug. 1 meeting. A consensus check on the content will be discussed during the Aug. 1-2 meeting. The group expressed appreciation for Jim DesJardins, who presented the material, as well as for other members of the committee – Karen Boehler, Austin Jensen, Zoe Lees, and Matt Larson.

GRIDWORKS

The SPS team presented draft modeling results, noting that the information is preliminary. For details, see the SPS slide deck, listed above. Question and response topics included: capacity and energy needs, upstream emissions, demand response, load forecasts by customer type, PPA extensions, gas resource cost and depreciation assumptions, IRA subsidies, energy storage, carbon emission inflection points, and others.

Initial stakeholder model requests have been received by SPS as of today. Gridworks and SPS will be working with stakeholders to refine parameters and, where practicable, coordinate similar requests. **The final date for submission of requests is July 21, 2023.**

As the requests are better defined, they will be summarized and posted on the Gridworks website under WORKING MATERIALS. Topics to date include:

- Accelerated carbon free scenario
- Inclusion of reciprocating engines as a resource option
- Aggregated virtual power plant (distributed resources)
- Introduction of dynamic pricing/TOU rates
- Tolk retirement in 2028, but with specified generation levels until then
- Environmental compliance costs under the Good Neighbor Plan
- High renewable energy penetration under the Inflation Reduction Act
- Compliance with EPA Section 111

Run requests are to be submitted via the following link as soon as possible, but no later than July 21:

- SPS IRP Modeling Request (office.com), or https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu

Factors to be considered when selecting the utility's preferred portfolio(s) were introduced. Participants were invited to consider the list of factors, and to provide input on the most important factors. In addition, suggested measures for characterizing those factors would be useful. Input on these topics can be sent to mtatro@gridworks.org by July 20 for use during the next meeting.

NEXT STEPS

The next steps for both the SoN and modeling activities are shown below.

DATE	MODELING	STATEMENT OF NEED
TBD	Small group discussions to refine stakeholder requested model run parameters.	
July 20		Comments on SoN input document due to mtatro@gridworks.org

July 21	Last day for submission of stakeholder requested model run forms	
July 7-24	Modeling	Revisions to SoN input
July 25	Modeling results to date posted on Gridworks website as pre-read	SoN input posted on Gridworks website as pre-read
August 1-2 STAKEHOLDER MEETING	First Modeling Review including Stakeholder requested Modeling Runs (Round 2). Action Plan Input.	Assess level of consensus on SoN input. Action Plan Input.
September 21 STAKEHOLDER MEETING	Modeling Concluded – Final Modeling Review	
October 13	SPS files IRP with the NM PRC	
October 26	Final meeting to collect feedback on IRP Facilitated Stakeholder process	

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.

Please Access and Complete the Survey Now

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...by either:

Scanning the QR Code to the right

OR

Visiting this link: bit.ly/SPS-IRP-Feedback

NEXT MEETING: The next meeting of the group, Meeting #5, is scheduled for August 1 & 2. Meeting times are 12 noon – 5 PM on Aug. 1 and 9 AM – 3 PM on Aug. 2. The meeting will take place on ZOOM: https://us02web.zoom.us/j/8569536132 (ID: 8569536132)

Join by phone
(US) +1 301-715-8592
Stakeholders who wish to participate via ZOOM from the SPS hosted facility in Hobbs, NM, should contact Linda.L.Hudgins@xcelenergy.com for more information.

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

FOR DEMONSTRATIVE PURPOSES

As discussed during previous stakeholder meetings, SPS intends to update several critical inputs to the EnCompass modeling (e.g., NREL cost data), therefore, the results shown today are for demonstrative purposes only – actual results will likely change significantly

The purpose of presenting draft results today is intended to simply show how the EnCompass model will (1) solve the most cost-effective portfolio of resources ("MCEP"), and (2) drive further discussion and conversations

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

ENCOMPASS FUNDAMENTALS

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

WHAT IS THE MOST COST-EFFECTIVE PORTFOLIO OF RESOURCES?

- Portfolio of existing, and new, generating resources that results in the lowest total system-wide cost, on a present value basis, over the 20-year planning period
- Costs are categorized as ‘fixed’ costs and ‘variable / production’ costs.
  - Fixed costs ($), such as capital investment, labor, maintenance, etc. generally do not vary with the short-term output of the generator
  - Variable / production costs ($/MWh) vary with the energy produced or purchased e.g., fuel, chemicals, market energy purchases / sales etc.
- Annual total system-wide costs = Fixed Costs ($) + Production Costs ($/MWh) – Production Revenue (e.g.) Market Sales ($/MWh)
- EnCompass creates the most cost-effective portfolio of resources to meet SPS’s energy and capacity needs

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

SELECTING THE MOST COST-EFFECTIVE PORTFOLIO OF RESOURCES

- **Common Misconception #1:** EnCompass will solve for the MCEP to meet SPS's capacity need inc. the planning reserve margin requirement ("PRM"). Stated differently, EnCompass will select the lowest cost portfolio resources that results in a 15% PRM
- **Reality:** EnCompass will solve for the MCEP that meets, *or exceeds,* SPS's PRM requirement. The accredited capacity of the MCEP could far exceed the 15% PRM

- **Common Misconception #2:** Retiring resources are directly 'replaced'
- **Reality:** Retiring generation does increase the capacity need in EnCompass, however, EnCompass is still solving for the MCEP portfolio of resources that meets, or exceeds, SPS's capacity need. This is an important distinction, as new generation may be acquired years in advance of a retiring generator

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

EXAMPLE COST CALCULATION

Planning Period – 20 Years

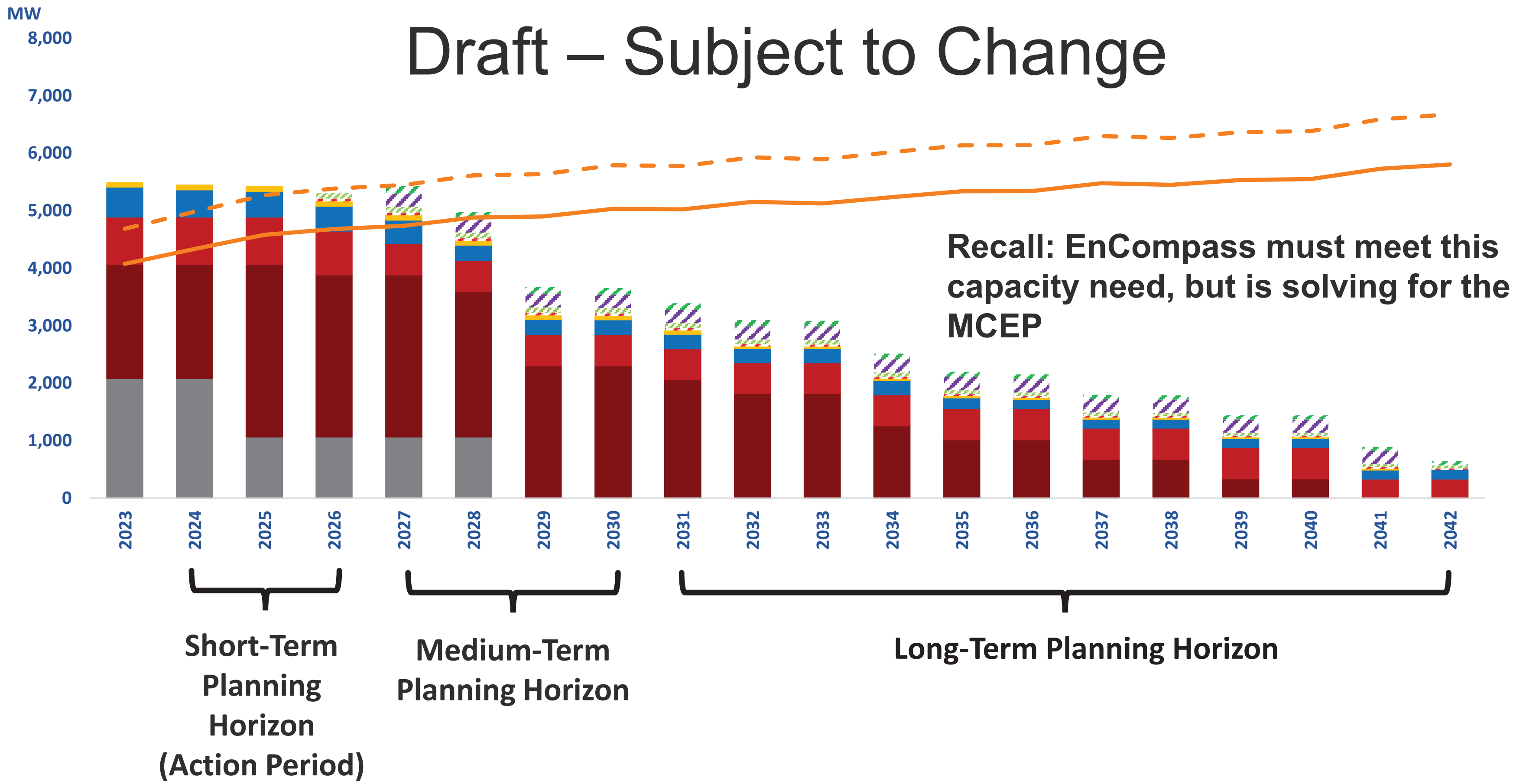
PVRR Production Cost	NPV ($M) 2023-2042	2023 ($,000)	2024 ($,000)	2025 ($,000)	2026 ($,000)
Example	$12,507	$989,067	$1,010,569	$1,129,218	$1,004,691

Solving to Lowest Cost

Fixed Cost + Variable Cost
(Cost – Revenue)

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

SPS's Capacity Need – Planning Forecast

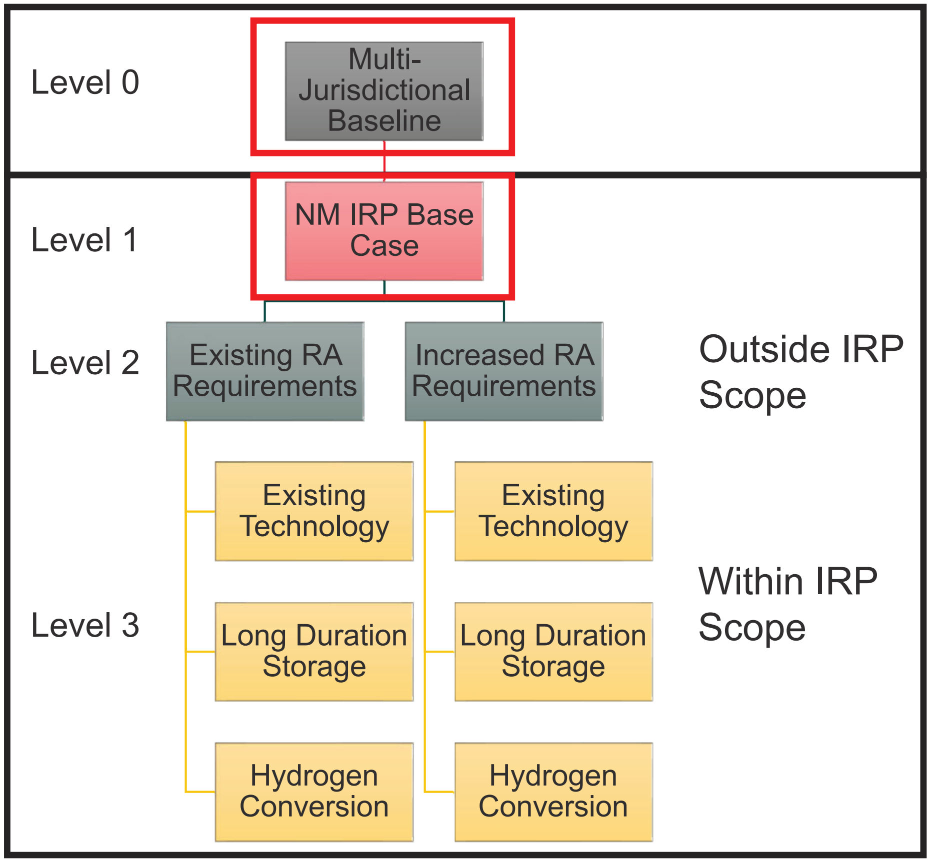


Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

DRAFT MOST COST-EFFECTIVE PORTFOLIO OF RESOURCES

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

SPS – Modeling Hierarchy



Drafts of Level 0 and Level 1 are Previewed Today

Existing Technology Available for Selection

- Solar
- Wind
- 4-hour BESS (lithium-ion battery energy storage systems)
- 6-hour BESS
- 8-hour BESS
- Hybrid - Solar + 4-hour BESS
- New gas units are *not* included in Level 1

Future Sensitivities:

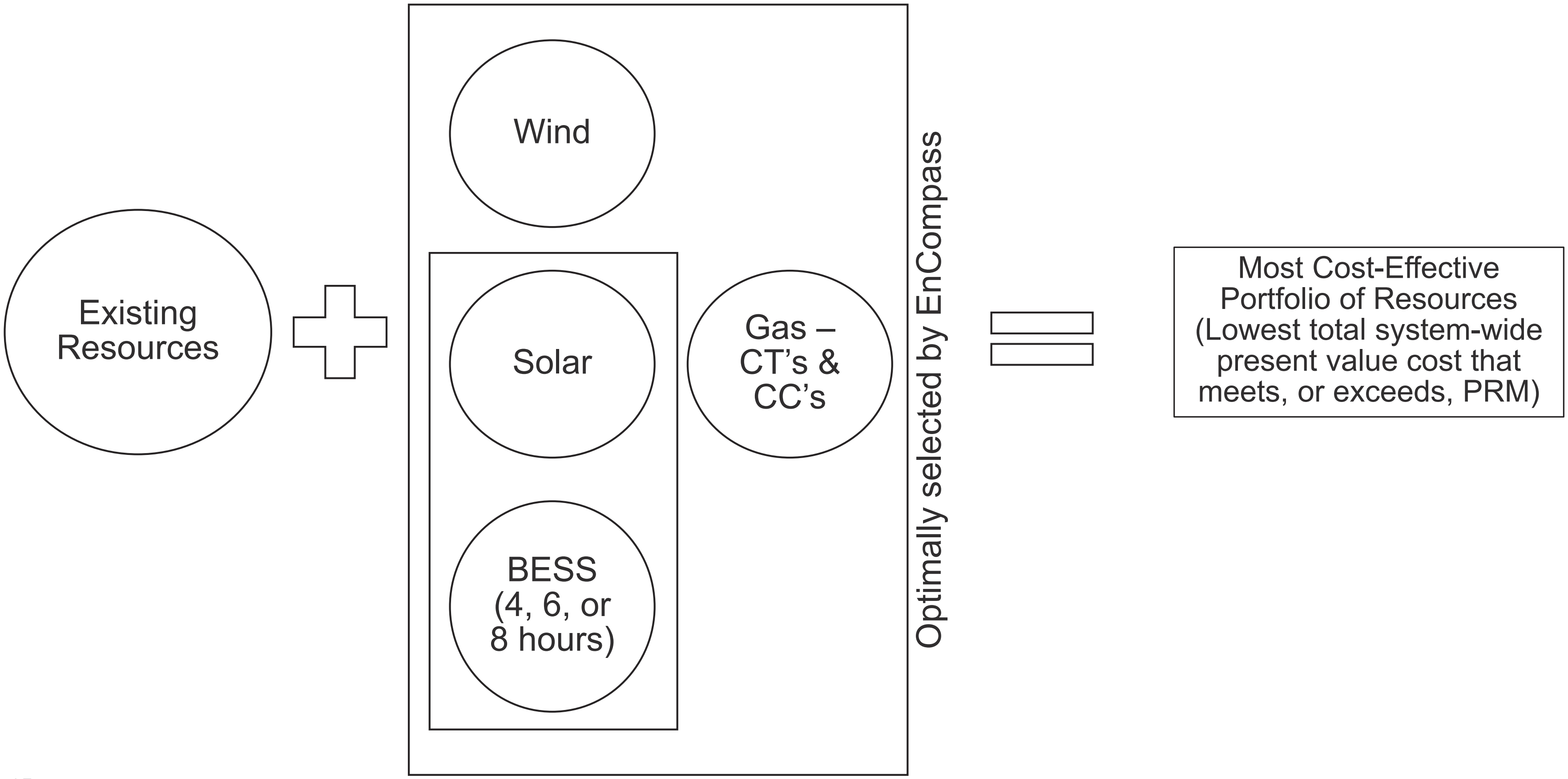
- Increased Resource Adequacy Requirements
  - In the summer 18% & 20% in the Winter
- Long Duration Storage
  - Addition of 100-hour long duration BESS
- Hydrogen Conversion
  - Allow new firm and dispatchable gas generation assuming conversion to 100% hydrogen before 2040

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

LEVEL 0

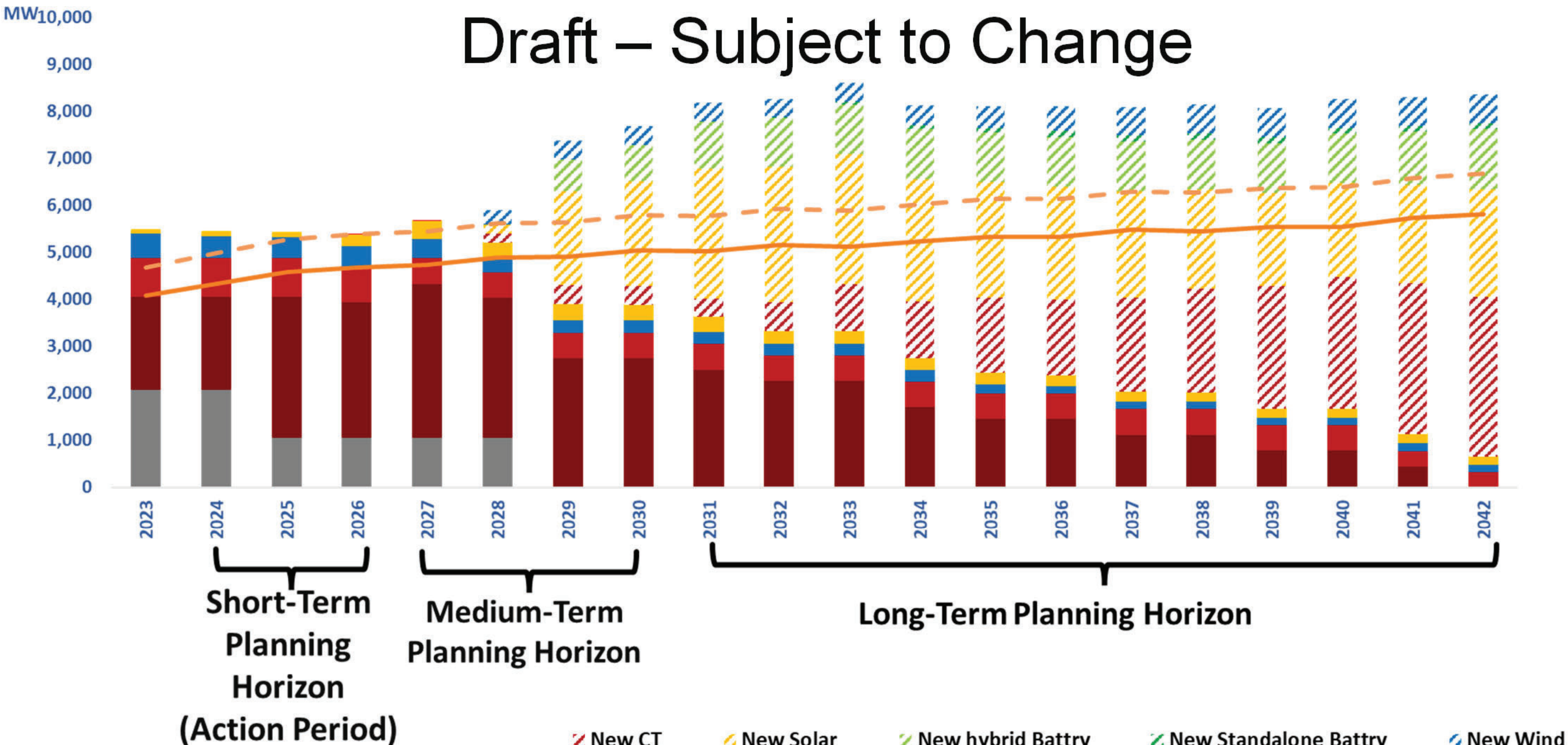
Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Existing ‘Commercially Viable’ Technology



Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

SPS's Capacity Need – Planning Forecast

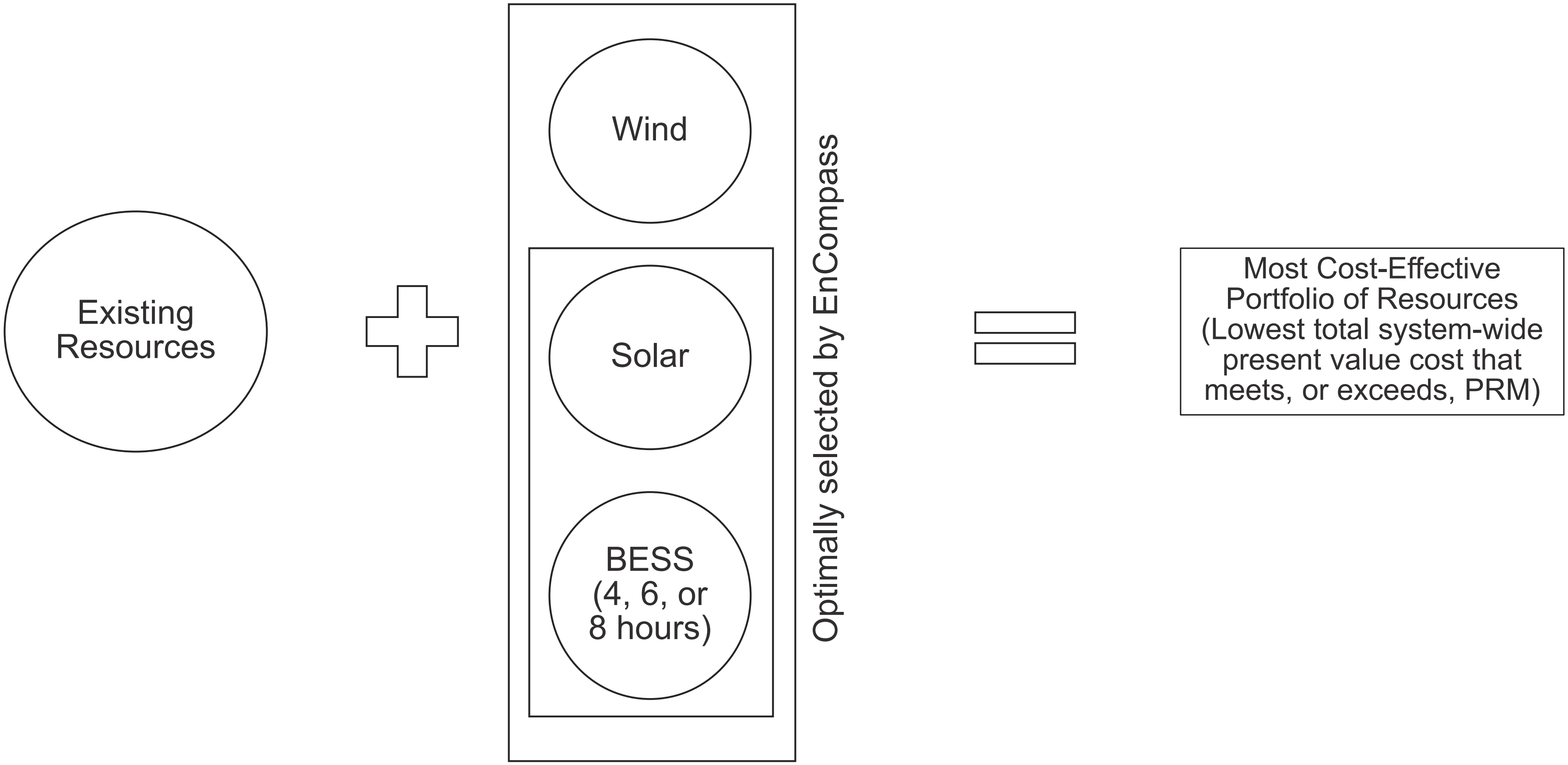


Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

LEVEL 1

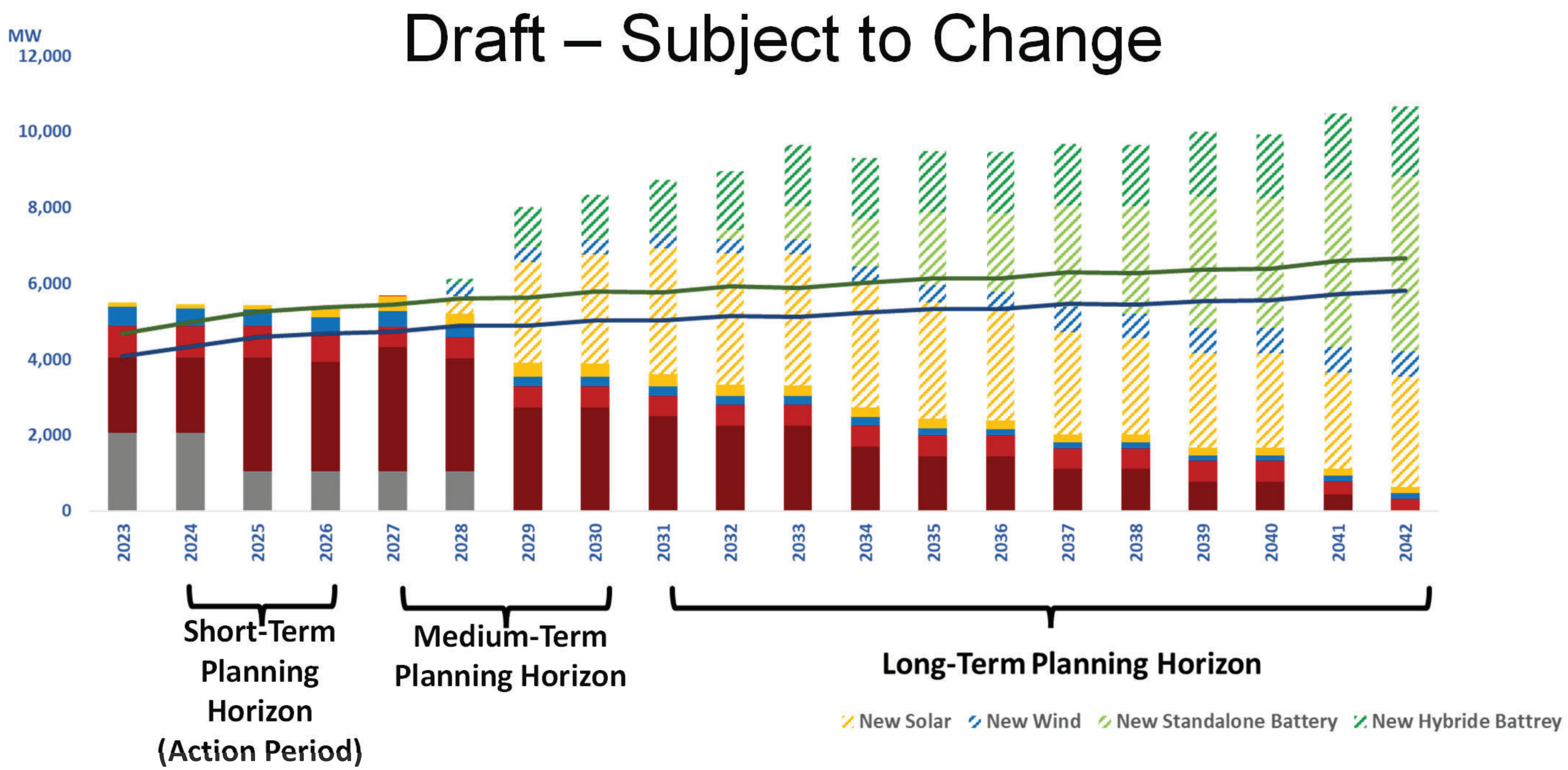
Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Existing 'Commercially Viable' Technology



Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

SPS's Capacity Need – Planning Forecast



Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

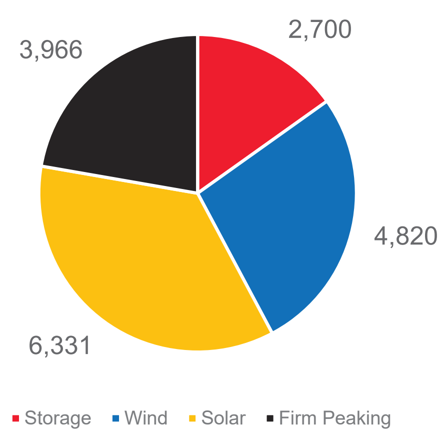
COMPARE: LEVEL 0 VS. LEVEL 1

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

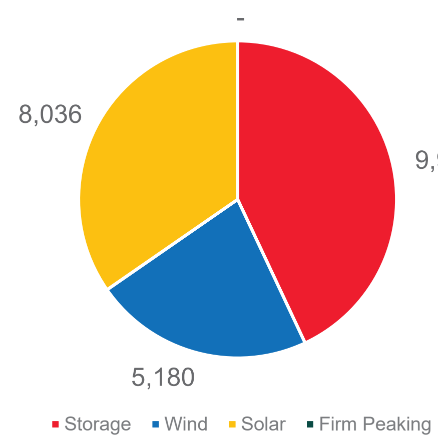
Expansion Plan

Nameplate capacity (MW) of new generating resources added by year and type for the Level 0 and Level 1 scenarios

Level 0 Total Nameplate Capacity (MW) Additions from 2028-2042



Level 1 Total Nameplate Capacity (MW) Additions from 2028-2042



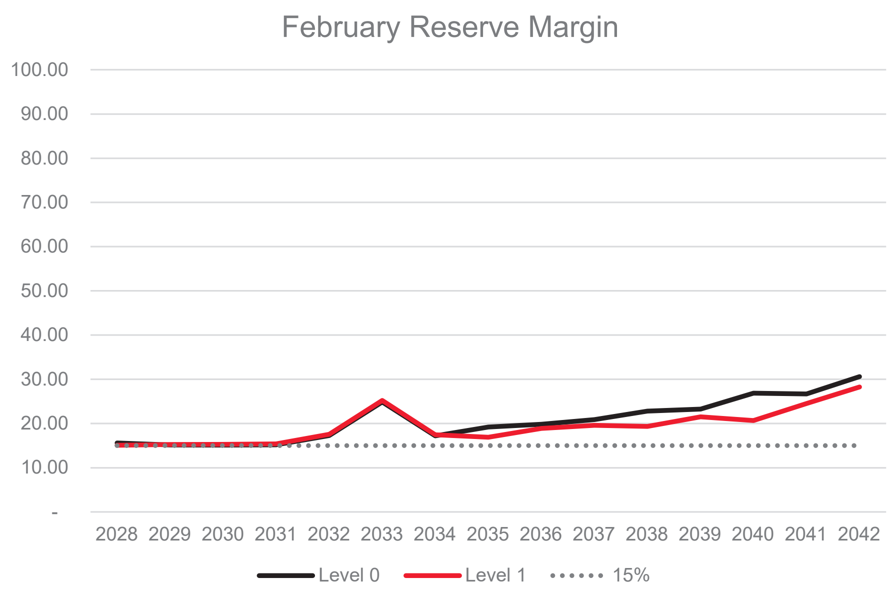
Difference (MW)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
Storage	305	430	25	60	420	790	430	800	200	790	240	1,050	-	1,345	390	7,275
Wind	80	(80)	(50)	(80)	(80)	80	280	(70)	(110)	390	-	-	-	-	-	360
Solar	421	634	50	(144)	97	260	-	-	(243)	-	-	340	-	(190)	480	1,705
Firm Peaking	(233)	(233)	-	-	(233)	(467)	(233)	(467)	-	(467)	(233)	(467)	(233)	(467)	(233)	(3,966)
Total	**573**	**751**	**25**	**(164)**	**204**	**663**	**477**	**263**	**(153)**	**713**	**7**	**923**	**(233)**	**688**	**637**	**5,374**

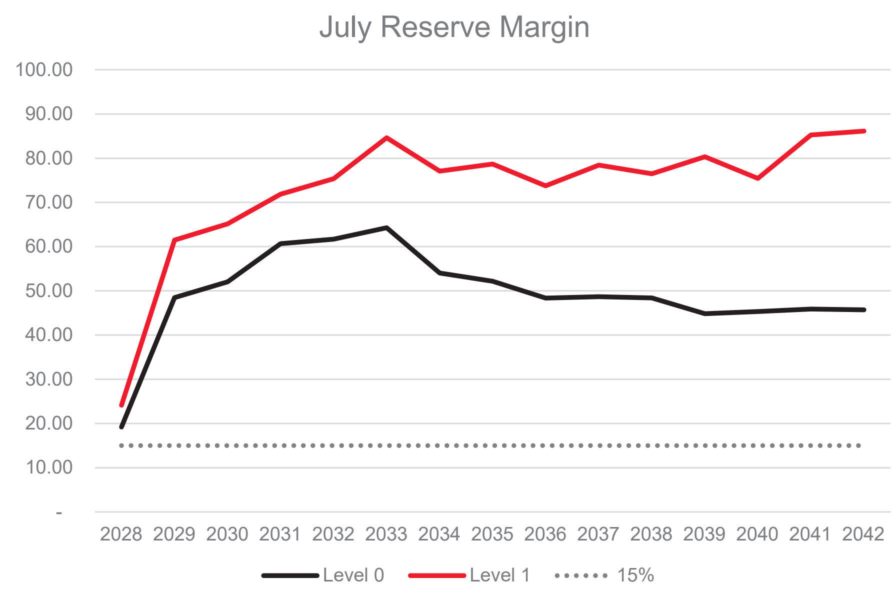
Draft Results – Subject To Change

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Reserve Margin

The reserve margin varies by month. As we add more renewables it tends to be higher in the summer months and closer to the required 15% reserve margin in the winter months.

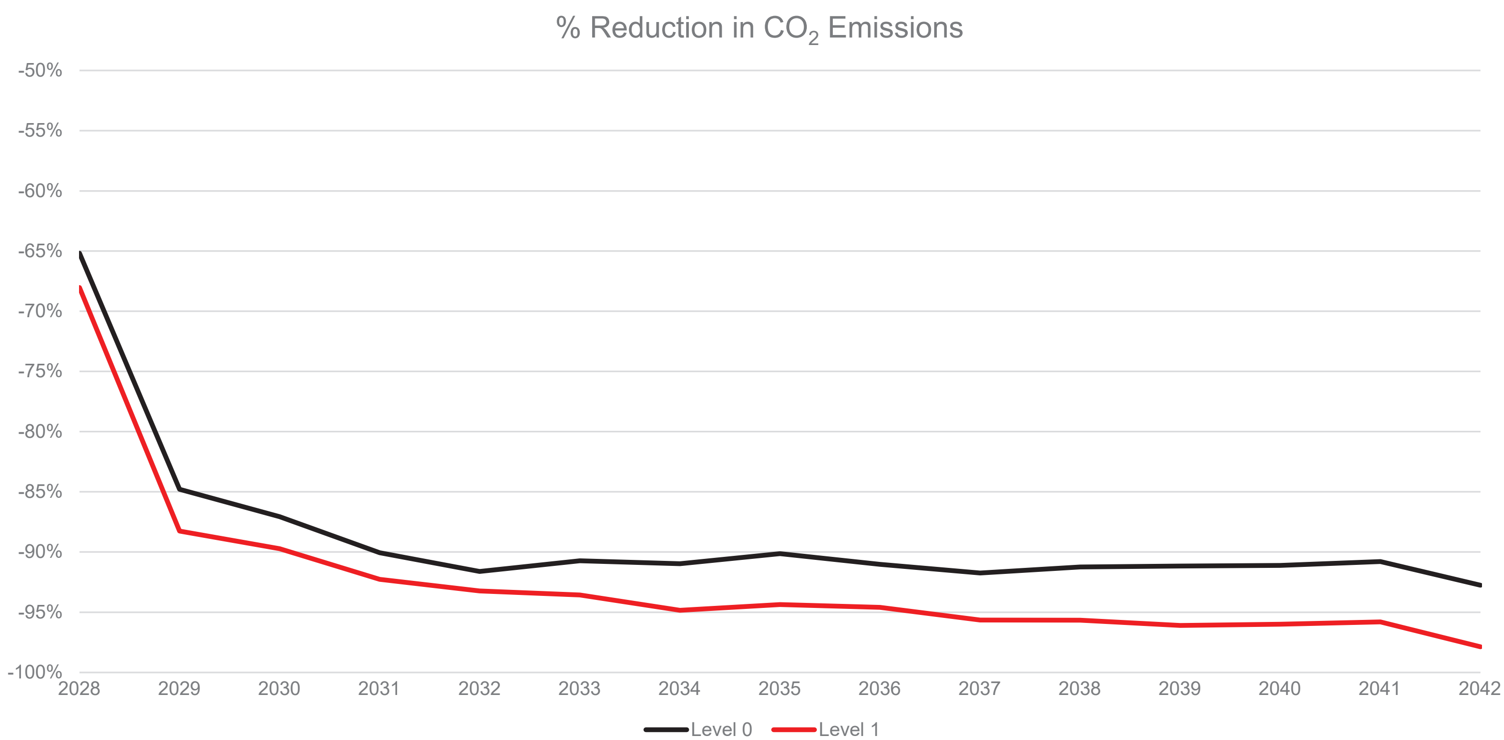




Draft Results – Subject To Change

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

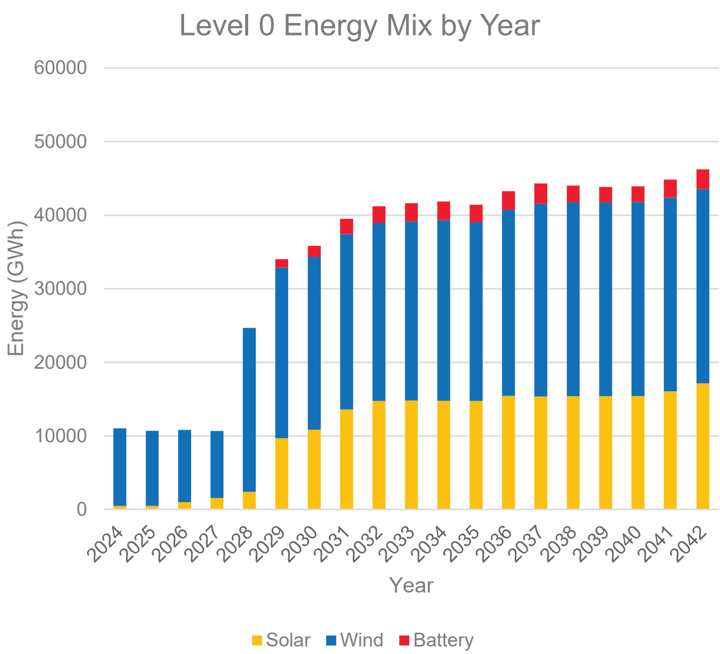
% Reduction in CO_2 Emissions from 2005 Levels

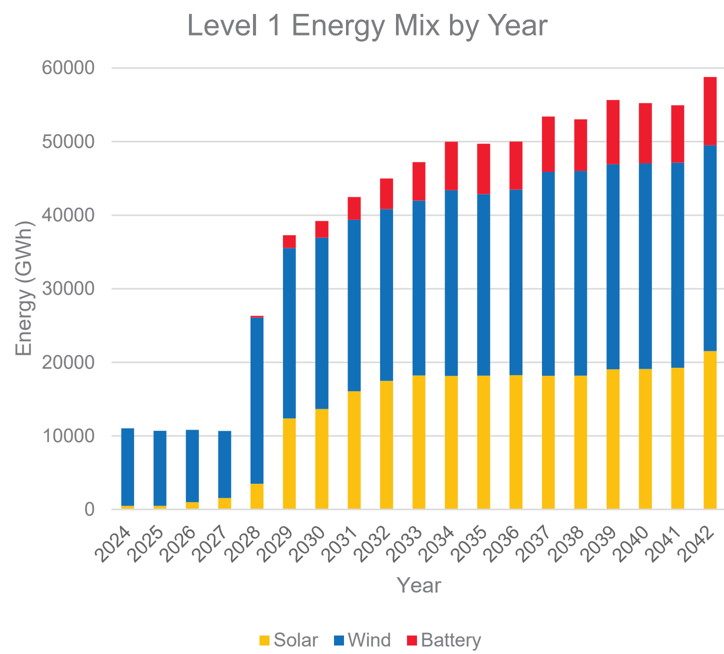


Draft Results – Subject To Change

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Increased Renewables in Energy Portfolio





Of the energy we produce **88%** will come from renewable resources by 2030 and **100%** by the year 2042 for the Level 1 modeling scenario

Renewable Energy (%)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Level 0	31%	42%	36%	37%	67%	83%	85%	89%	91%	90%	92%	92%	92%	93%	93%	93%	93%	93%	97%
Level 1	31%	42%	36%	37%	70%	86%	88%	91%	92%	93%	96%	96%	96%	97%	97%	97%	97%	97%	100%

Draft Results – Subject To Change

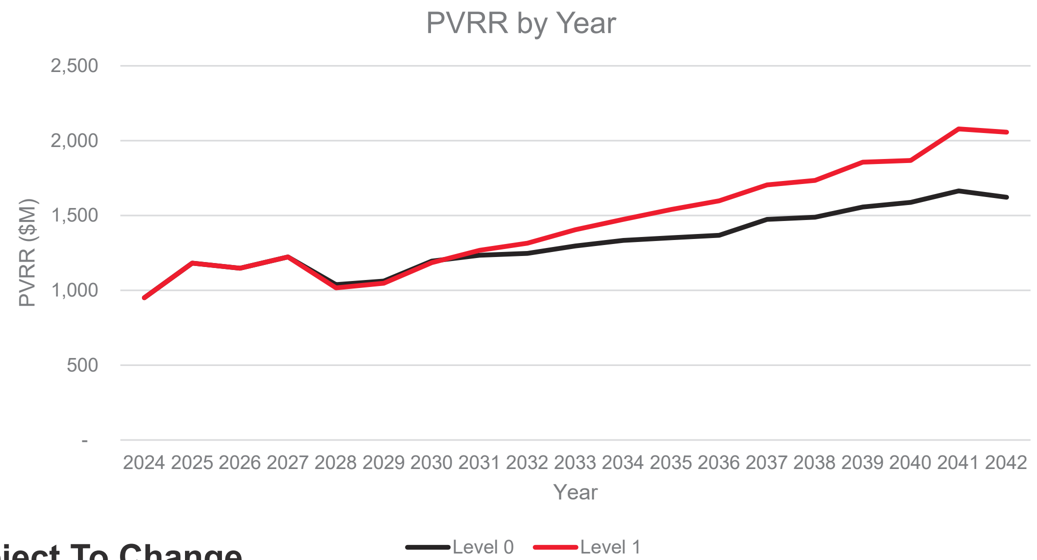
Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Present Value of Revenue Requirements (PVRR)

Present Value
value in the present of a sum of money

Revenue Requirements
total amount of money a utility must collect from customers to pay all its costs

$935m Increase
in PVRR from renewable expansion over the next 20 years



Draft Results – Subject To Change

PVRR ($M)	NPV 2023-2042		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Level 0	**$**	**12,926**	950	1,182	1,148	1,223	1,039	1,063	1,196	1,235	1,247	1,297	1,334	1,351	1,368	1,475	1,489	1,557	1,589	1,664	1,623
Level 1	**$**	**13,862**	950	1,182	1,148	1,223	1,017	1,048	1,185	1,268	1,315	1,405	1,475	1,541	1,598	1,704	1,733	1,856	1,867	2,078	2,056
Delta	*$*	***935***	*0*	*0*	*(0)*	*(0)*	*(22)*	*(14)*	*(10)*	*33*	*68*	*108*	*141*	*190*	*230*	*229*	*244*	*299*	*279*	*414*	*433*

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

Xcel Energy®

Note: The Modeling Contained in this Presentation is for Demonstrative Purposes Only

GRIDWORKS

Stakeholder Workshop to Inform the SPS Integrated Resource Plan
Meeting #4, July 6, 2023, 1 PM – 5 PM MDT
Via ZOOM
https://us02web.zoom.us/j/8569536132 (ID: 8569536132)
Join by phone
(US) +1 301-715-8592

Read ahead materials available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

AGENDA

1:00 PM – Welcome, Purpose and Outcomes for meeting, Announcements (Gridworks)

1:15 PM – Statement of Need - overview of input to date (SoNIC)

2:15 PM – Draft modeling results to date (SPS Team)

3:15 PM – BREAK

3:30 PM – Q&A

4:00 PM – Update regarding stakeholder-requested modeling runs (SPS Team)

4:30 PM - Factors to be considered in determining recommended portfolio (Gridworks)

4:45 PM – Summary of next steps, meeting survey (Gridworks)

5:00 PM - Adjourn

This meeting will be recorded.

Read-ahead materials will be available on or before July 3.

Welcome!

Stakeholder Engagement Workshop

Meeting #4

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

July 6, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

GRIDWORKS

Note: this meeting is being recorded. A link to the recording will be included in the meeting summary and posted on the GRIDWORKS website.

The Agenda for Today's Meeting

TIME	TOPIC
1:00	Welcome, Meeting Purpose and Outcomes, Announcements
1:15	Statement of Need Interim Committee (SoNIC) update and Next Steps
2:15	SPS Presentation on Draft Model Results to Date and Next Steps
3:15	Break
3:30	Questions and Answers Session
4:00	Stakeholder Requested Modeling Runs Update
4:30	Introduce Factors to Consider in Evaluating Resource Portfolios
4:45	Summary of Next Steps, Meeting Survey
5:00	Adjourn

Purpose and Outcomes for the Workshop

Purpose:

- Prepare stakeholders to provide input to the Action Plan in August

Key outcomes:

- Identify if any stakeholders request access to same software used by SPS (per rule guidelines)
- Review of SoN input and first check on consensus among stakeholders
- Review draft modeling results to date and finalize stakeholder requested runs
- Introduce factors to consider in evaluating resource portfolios

Welcome to New Stakeholders and Announcement to All

If this is your first meeting…please introduce yourself via the chat:

- Your Name
- Your Organization
- Your email address
- Your primary topic of interest related to the IRP

ANNOUNCEMENT

Any stakeholder who desires access to the same software as the utility, as provided for in the IRP Rule, notify info@Gridworks.org **today**.

Stakeholder Deliverables are Input to Statement of Need and Action Plan

May - June	July – August	September - October
• May 16: 2 – 4:30 PM • June 1: 2 - 4 PM • June 13 & 14: 12–5 & 9–3 workshop in Roswell	• **July 6: 1 – 5 PM** • **August 1 & 2: 12-5 & 9-3 workshop, via ZOOM** • **August 29: 2 – 3:30 PM**	• **Sept. 21: 1 – 5 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans, Check alignment with Statement of Need

3: IRP Reviews and Process Feedback

Statement of Need Interim Committee Update

- Review of input document to date
- Appreciation to interim committee members:
    - Jim DesJardins
    - Austin Jensen
    - Karen Boehler
    - Zoe Lees
- Feedback requested:
    - Elements that you don't agree with?
    - Comments, edits, questions submitted via chat or to mtatro@gridworks.org **by July 20**
- Consensus check during Aug. 1-2 meeting.

Draft Model Results to Date

- SPS presentation, 60 minutes
- BREAK
- Questions submitted via chat
- Responses, 30 minutes
- Responses to unanswered questions will be documented and posted on the GRIDWORKS.org website for this meeting.

Southwestern Public Service

GRIDWORKS

Status of Stakeholder Requested Model Runs

- Requests received to date
- Process for refining model run parameters
- **ANNOUNCEMENT**- Final date for request forms submitted

SPS IRP Modeling Request:

- https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu

or

- SPS IRP Modeling Request (office.com)

GRIDWORKS

Post Economic Analysis Review

The SPS presentation on June 1 included discussion about the post (economic) analysis review and the qualitative approach to evaluating resource portfolios.

Examples of factors considered are:

- NM RPS requirements (noting that due to the multi-state service territory, these are not model constraints)
- geographic location of new generation (close to load is better)
- resiliency, including transmission and distribution assets
- project risks (e.g., supply chain, generator interconnection)

Factors in Evaluating Resource Portfolios

- Financial, competitive, operational, fuel supply, price volatility, downstream impacts on transmission and distribution investments, extreme-weather events, and anticipated environmental regulation costs.
- Cost through projected life
- Mitigation of ratepayer risk
- Other factors
  1. load management or modification and energy efficiency requirements
  2. meeting renewable energy portfolio requirements
  3. existing and anticipated environmental laws and regulations, and, if determined by the commission, the standardized cost of carbon emissions
  4. fuel diversity
  5. susceptibility to fuel interdependencies
  6. transmission or distribution constraints
  7. system reliability and planning reserve margin requirements

Reference: IRP Rule, Appendix A, "Determination of the Resource Portfolio"

Do Stakeholders Wish to Provide Input on the Factors?

Which factors are most important to you?
What measures best characterize those factors?

Enter your comments in chat or send feedback to mtatro@gridworks.org by **July 20**

Looking Ahead

- Aug. 1-2: noon – 5 PM and 9 AM – 3 PM, Meeting #5 via ZOOM Stakeholders also welcome to join SPS in Hobbs to participate via ZOOM. Contact Linda.L.Hudgins@xcelenergy.com for more information.
- Aug. 29: 2 PM – 3:30 PM, Meeting #6 via Zoom
- Sept. 21: 1 PM – 5 PM, Meeting #7 via Zoom
- Oct. 16 – IRP is filed
- Oct. 26: 2 PM – 3:30 PM, Meeting #8

Your Feedback is Critical

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...please:

Scan the QR Code to the right

OR

Visit this link:
bit.ly/SPS-IRP-Feedback

GRIDWORKS

Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

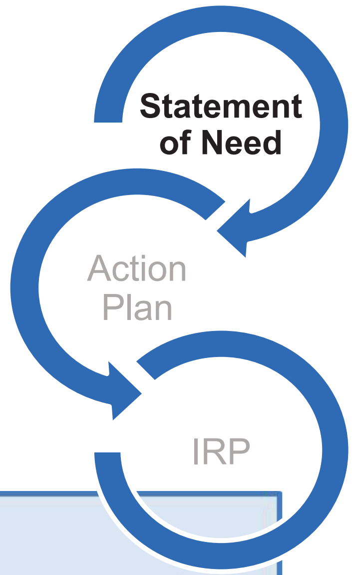
GRIDWORKS

Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

Supplemental Information

GRIDWORKS

Statement of Need Defined by the IRP Rule



Statement of Need 17.7.3.10

- The statement of need is a description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies.
- The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

From Appendix A in the IRP Rule...

DETERMINATION OF THE RESOURCE PORTFOLIO:

A. To identify the most cost-effective resource portfolio, utilities shall evaluate all supply- side resources, energy storage, and demand-side resource options on a consistent and comparable basis, taking into consideration risk and uncertainty, including but not limited to financial, competitive, operational, fuel supply, price volatility, downstream impacts on transmission and distribution investments, extreme-weather events, and anticipated environmental regulation costs.

B. The utility shall evaluate the cost of each resource through its projected life with a life-cycle or similar analysis.

C. The utility shall consider and describe ways to mitigate ratepayer risk.

D. Each electric utility shall provide a summary of how the following factors were considered in, or affected, the development of resource portfolios:

- **(1)** load management or modification and energy efficiency requirements;
- **(2)** renewable energy portfolio requirements;
- **(3)** existing and anticipated environmental laws and regulations, and, if determined by the commission, the standardized cost of carbon emissions;
- **(4)** fuel diversity;
- **(5)** susceptibility to fuel interdependencies;
- **(6)** transmission or distribution constraints; and
- **(7)** system reliability and planning reserve margin requirements.

E. Alternative portfolios. In addition to the detailed description of what the utility determines to be the most cost-effective resource portfolio, the utility shall develop alternative portfolios by altering risk assumptions and other parameters developed by the utility.

STAKEHOLDER Input to the Statement of Need – SPS IRP

Based on input from June 13-14 workshop and two SoNIC working meetings held June 27 and July 3

SUMMARY

- When it comes to procurement, the technical characteristics of resources that should be considered:
  - Cost of resources
  - Capacity contribution of resources
    - Dispatchability
    - Location of resource (geographic diversity)
  - Emerging technologies that allow for integration of generation that meets the REA requirements, including distributed energy resources
  - Effect of resources on SAIDI, SAIFI, NERC and WECC requirements
- The objectives we're trying to solve for:
  - Cost effective resource portfolio
  - Meet the RPS requirements
  - Meet projected load growth and secure replacement energy and capacity for retiring resources (Q for modeling: Load growth requirements v. replacement resources)
  - Reliability and resiliency
  - Robust energy system that furthers diverse economic development in the state
  - Meet evolving resource adequacy requirements
  - Ensuring affordability to all SPS customers, including residential and low-income customers, as the system transitions
  - Providing a just and orderly transition for workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements.
  - Engaging customers to help the utility reliably serve during grid constrained events
- There are resource needs by 2027 that are currently being addressed by the 2021 IRP Action Plan. SPS/Xcel Energy also has capacity need of ___MWs by 2028-2030, which requires commencement of the resource procurement process as soon as possible, under:
  - Description of level 1-3 modeling process, with details regarding the following:
    - Level 1 - Base case
    - Level 2 - Scenario X, modeled by increased Planning Reserve Margin
    - Level 3 (e.g. higher load)
- Based on generic pricing, Recommended/Preferred Portfolio has potential for:
  - ___ MW new clean energy
  - ___ MW from dispatchable (resource that can be called upon at anytime that is needed)
  - ___ MW storage
  - ___MW Demand Side Resources
  - Etc.

- [ ] POSSIBLE ACTION PLAN IDEA - engage customers to help the utility reliably serve all during grid constrained events, including new rate structures. (SEE EXAMPLES BELOW IN "OTHER RATEMAKING PROPOSALS")

- Ultimate portfolio depends on bids submitted/received
- Rule/state law compliance
  - "technical characteristics of proposed new resources"
- Timeline considerations
  - 2028-2030 need identified
  - it takes time to get new large capacity resources on line. Near term resource needs are being met by 2021 action plan
  - timeline for transmission interconnection to SPP is a consideration (FERC jurisdiction), recognizing that certain resources may be interconnected more quickly than others
  - interconnection of distributed resources to the SPS system (NM PRC jurisdiction) is also a consideration
  - note that it takes less time to get smaller resources on line

RELIABILITY

- Timeframe to come on line
- PRM requirements are expected to increase in the future
- More Infrastructure - will need investment in distribution and transmission assets to support new generation and meet resource needs. Note that hosting capacity of existing circuits could be a consideration for distributed resources.
- Location considerations -
  - generation closer to the load makes the resource more valuable.
  - Larger facilities could encounter land use conflicts or other local government permitting challenges.
  - RFP results will also consider location
- Address transmission infrastructure needed to integrate more renewables
- Should be planning for increased resource adequacy requirements
- System analysis for inadequate load supply (blackout/brownout) and designation of critical infrastructure?

MORE GENERATION

- Make individual solar affordable (as a way to decrease load)
- No regret (new resources & pathway). ATHENA - please elaborate
- Most economical and reliable portfolio to meet SPS's capacity needs
- Lifecycle environmental cost considerations, including decomissioning cost, (SEEK CLARIFICATION from ATHENA, and MR. BARBER)
- Incorporate evolving technologies
  - batteries
  - carbon free or low emissions, dispatchable technologies

- technologies that may have previously been considered non dispatchable
- Maximize investment opportunities (how to measure the benefits of these investments is challenging)
  - can the investment facilitate economic development in the state?
  - to meet needs over the long term
  - support a diversity of businesses that support NM's economy
- Cost effective including fuel

ENVIRONMENTAL

- Climate Crisis
- Carbon-free ASAP
- In recognition of climate change concerns, make steady progress toward meeting requirements of renewable energy act
  - consider modeling of accelerated RPS goal achievements (prior to 2045)

TRANSITION – HUMAN IMPACT

- Affected workforce support
- Reinvestment in impacted communities
- Involve individuals – both homeowners and renters (community solar?)
- Consider community reinvestment, workforce transitions, training support

LOAD GROWTH - NOTE THAT MODELING RESULTS WILL INFORM THIS SECTION, Demand-side Resources modeling scenario(s) are being developed.

- Electric supply/infrastructure growth rate to include industrial electrification projects in addition to projected business growth. Note a reference offered by K. Stanley…..https://www.ercot.com/files/docs/2023/03/17/Presentation%20to%20ERCOT%20planning.pdf …
  - S&P Global's study identified a current 2.3GW demand gap to supply power to O&G loads in the SPP area, and that gap increasing to 5.3GW by 2032 if the current growth continues. See slide 10.
- Changing load (increased electrification)
  - Environmental regulations driving combustion equipment to electric
- Evaluate probability of new load becoming a reality
  - High side/low side and the potential lag in grid buildout to meet demand
- Demand Response - increased role of DR….specifics discussion in IRP on current and potential demand response programs and impact on load in each IRP scenario. Include information on cost of DR programs as an alternative to additional generation
- Partial Requirement Tariff (standby tariff), Case 22-00285-UT

OTHER RATEMAKING PROPOSALS

Tools to engage customers to help the utility reliably serve customers during grid constrained events, including:

- Real-time day ahead pricing tariff designed to expose customers to market prices such that the customer would respond; change usage behavior in market constrained events, reducing peak load and associated system costs.

- Interruptible load tariff designed to compensate customers for self-curtailment at a cost lower than market purchases in the same time period, reducing peak load and associated system costs.
- Future possible regulatory scenarios
- Behind the meter solar plus storage as tools for the utility to call upon to dispatch as needed.

Gridworks-provided Chat Log from Meeting

15:06:47 From Colette and Chantel To Gridworks(privately) : Mark L. Bibeault, LANL, bibeault@lanl.gov, energy storage in particular closed-loop pumped hydro
15:06:54 From Cara Lynch : Cara Lynch, attorney for CCAE. Clean and affordable energy.
15:07:55 From Maclee Kerolle : Hello everyone, my name is Mclee Kerolle (pronounced 'Mac-lee Ca-roll'). I'm from New Mexico's Public Regulation Commission. This is my first IRP meeting and I'm here just in an attendance capacity
15:09:04 From Colette and Chantel : Mark L. Bibeault, LANL, bibeault@lanl.gov, energy storage in particular closed-loop pumped hydro
15:09:05 From Susan Miller : Hi everyone,
15:09:33 From Susan Miller : This is Susan Miller with the Modrall Sperling Law Firm.
15:09:51 From Maclee Kerolle : Replying to "Hello everyone, my n..."

mclee.kerolle@prc.nm.gov
15:12:33 From K-Bob Stanley : Kerry "K-Bob" Stanley, Targa Resources, kstanley@targaresources.com, interested in load and generation interconnect timeline and capacities
15:12:38 From Hall, James A : James Hall - ExxonMobil
15:12:43 From David Millar : David millar - wartsila
15:12:48 From Austin Rueschhoff : Austin Rueschhoff - New Mexico Large Customer Group
15:12:51 From Athena Christodoulou : Athena Christodoulou CSolPower LLC, sorry just got off a call
15:13:07 From CydneyBeadles : Replying to "Hello everyone, my n..."

Cydney Beadles, Western Resource Advocates
15:13:39 From CydneyBeadles : Replying to "Hello everyone, my n..."

cydney.beadles@westernresourceadvocates@org
15:14:08 From CydneyBeadles : Replying to "Hello everyone, my n..."

Attending to learn about & contribute to SPS's decarbonization work
15:15:34 From Athena Christodoulou : Dedicated to turning our electric companies into climate heroes!
15:15:45 From Maclee Kerolle : Reacted to "Dedicated to turning..." with 🙌
15:16:59 From Gridworks : Gridworks website - www.gridworks.org
15:20:28 From Gridworks : https://gridworks.org/wp-content/uploads/2023/07/Statement-of-Need-ELEMENTS-July-3.docx.pdf
15:29:33 From Hall, James A : With hydrogen and/or CCS potential for both new build and retrofitted on existing generation, some assets may be both clean (low carbon) and dispatchable, so categories in the statement of need may need to reflect this, thanks.
15:32:43 From Athena Christodoulou : Yes, but SunZia had to cross from east NM to Arizona and takes power to CA
15:35:00 From Athena Christodoulou : https://docs.google.com/document/d/1IU8B-Grdd_gE6sVuBI-bi1STxJVrIIhkHJFWfAXEMzE/edit
15:35:52 From Maclee Kerolle : no regrets!!!!
15:35:56 From Maclee Kerolle : Reacted to "https://docs.google...." with 👍

15:37:21 From Athena Christodoulou : How does new technology get considered? Does SPS put out RFIs?
15:39:06 From Colette and Chantel : Agree on life cycle analsysis- mining rare earth elements to meet our renewable goals while destroying certain ecosystems would not be good
15:41:43 From Athena Christodoulou : Sure fracking, spills, emitting pollution, adding to climate crisis, etc is part of that lifecycle.
15:42:50 From Colette and Chantel : or mining the ocean.....
15:43:26 From Athena Christodoulou : I used to have my air conditioner interrupted on a regular basis in FL, summers, 25+ years ago...demand response
15:48:26 From Jay Griffin : Is there a need for specifying energy (MWh) requirements also?
15:52:13 From Athena Christodoulou : including mid and long duration storage and modeling it on 8760 hr basis yields hugely different generation requirements
15:52:32 From Colette and Chantel : yes because it brings into account release duration for energy storage for example
15:56:20 From Athena Christodoulou : Is there any possibility the SPP will move to a loss of load criteria rather than reserve margin?
15:56:28 From David Millar : I think energy is an important consideration, but not a requirement to fill all energy needs, since SPS is part of an integrated market
16:02:15 From Colette and Chantel : that is mark bibeauklt
16:02:23 From Colette and Chantel : they are my daughters
16:02:42 From Colette and Chantel : trying to unmute
16:06:16 From Hall, James A : left click on the three dots top right hand corner of zoom box, scroll down to rename at the bottom, good to go
16:20:29 From Jeffry Pollock : Will the IRP results also quantify the impact on actual rates; that is, what SPS charges customers for providing electricity service?
16:23:54 From Gridworks To Linda Hudgins(privately) : Hi Linda - Deb here - can you email me Ben’s PPT so I can post to the website? Thanks
16:28:46 From Cynthia Mitchell : And the multi-j case is similar to your rate case Tolk case?
16:28:57 From Michael Kenney, SWEEP : Does SPP allow for demand response to meet resource adequacy requirements?
16:29:56 From Cynthia Mitchell : Any extensions on the PPAs, or is that better for a sensitivity?
16:32:50 From Cynthia Mitchell : Interesting on selecting possibly more new gas gen in excess of load needs. Model new gas as depreciation limited to 2040, rest stranded asset?
16:37:07 From Cynthia Mitchell : Also on new gas, need to consider hydrogen costs - gen conversion + carbon capture
16:41:29 From Cynthia Mitchell : Do you have a rough capacity factor for your new gas as a whole?
16:43:43 From Linda Hudgins To Gridworks(privately) : Replying to "Hi Linda - Deb here ..."

I actually do not have it yet either. Will get from him afterwards.
16:43:47 From Hall, James A : Does these model runs shown include all current subsidies including the IRA?

16:44:15 From Gridworks To Linda Hudgins(privately) : Replying to "Hi Linda - Deb here ..."

Ok thanks!
16:44:46 From David Millar : In Level 0, the new gas is a capacity resource with low capacity factors. Level 1 with no new gas only results in 5% fewer emissions the last slide shows it's much higher cost by 2040s. What happens if you divide the carbon emissions improvement in level 1 versus the cost difference? What's the $/Metric ton of the reduction?
16:45:06 From Athena Christodoulou : I don't see intra-day storage
16:45:24 From Hall, James A : Is it possible to break out demand by sector the Aug meeting to help stakeholders understand what assumptions are included in the demand modeling
16:45:59 From Athena Christodoulou : DOE storage webinar - https://docs.google.com/document/d/1HXilcIwhIFmwCt8NuMdDLDHZ2nzcz9jIdZD_qogRuv8/edit
16:46:57 From Cynthia Mitchell : Good question James; Jim and Michael and myself as a DER sensitivity subgroup would like to know the loads current and forecast for O&G and HT.
16:47:29 From Mark Bibeault : Unsure how the modeling accounts for energy storage efficiencies. ES required charging.
16:47:40 From Mark Bibeault : requires
16:48:18 From Cynthia Mitchell : Jay and everyone: JIm, Michael and I are prepared to discuss a possible DER sensitvity case; note that we need some time for that, no more than 10?
16:48:54 From Hall, James A : Cynthia - that information is in the report I copied you on and sent to Gridworks recently
16:49:04 From Cynthia Mitchell : Also, I have comments on possible gas price sensitivity.
16:53:10 From K-Bob Stanley : For O&G, this study by S&P Global suggests that there's currently a 2.3GW gap in available capacity in the SPP region of the Permian. That gap is expected to grow to 5.3GW by 2032 if current capacity growth trends are used. https://www.ercot.com/files/docs/2023/03/17/Presentation%20to%20ERCOT%20planning.pdf
16:53:16 From Cynthia Mitchell : Sensitivity for O&G right? Can you discuss when we get to DER scenario?
16:59:20 From Cynthia Mitchell : James, great report though does not consider O&G self gen; that’s what we’re after in a DER sensivitity
17:03:32 From JOSH SMITH (Sierra Club) : For the inclusion of CCS and H2 costs associated with continued operation of existing gas or the addition of new gas, does the model include all capital, fixed, variable costs, and parasitic load? And how are those costs determined? And In what year do you assume they will apply?
17:18:36 From Cynthia Mitchell : Another question on new gas gen capital costs: SPS costs are about half of PNM’s. SPS costs are based on utility build I believe, which may differ from RFP bids
17:21:21 From Cynthia Mitchell : Athena, is there a link that you can share on the updated storage information?
17:21:43 From Cara Lynch : It looks like this graph includes inflection points, where GHG emissions go up and then go down to eventually meet the RPS goals. Why do the GHG emissions go up? Is this necessary?

17:21:45 From Athena Christodoulou :
https://docs.google.com/document/d/1HXilcIwhIFmwCt8NuMdDLDHZ2nzcz9jIdZD_qogRuv8/edit
17:22:11 From Cara Lynch : Could SPS plan a faster decarbonization?
17:24:26 From Cara Lynch : Do the models account for fluctuations in gas prices, especially? If so, how?
17:25:05 From K-Bob Stanley : They've posted the LDES full report on liftoff.energy.gov here: https://liftoff.energy.gov/wp-content/uploads/2023/05/Pathways-to-Commercial-Liftoff-LDES-May-5_UPDATED.pdf
17:34:36 From Athena Christodoulou : With carbon capture and Sequestration will you be including upstream emissions?
17:45:07 From Athena Christodoulou : Can you put the link in the chat?
17:45:56 From Margie Tatro (Gridworks) : link for stakeholder model requests.....https://forms.office.com/pages/responsepage.aspx?id=g6WyJAVcaku06U4S3AAlrR1gbuaeZGFOtbA2-yJjOyJURFZGMVJVTkRZVkVLRDY5SlhZOUsyVzczSiQlQCN0PWcu
17:48:54 From Athena Christodoulou :
https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/20/fact-sheet-president-biden-to-catalyze-global-climate-action-through-the-major-economies-forum-on-energy-and-climate/
17:59:45 From Hall, James A : happy to help and meet as needed thanks
18:01:31 From Austin Rueschhoff : I agree with James' comment and am happy to help. I would caution that I am not sure how much data or projections we would have to share at this point on the load shedding or shifting techniques.
18:02:25 From Cynthia Mitchell : Gas forecast sensitivity
18:05:29 From Sonja Jenko : We received requests from, Joshua Smith (various), Jim DesJardins (battery powered virtual power plant program), David Millar (adding reciprocating engines as a resource), and Michael Kenney (adding demand response programs).
18:07:14 From Cynthia Mitchell : Let’s put that in our DER sensitivity
18:15:25 From Athena Christodoulou : Is there only 1 load forecast?
18:28:18 From Gridworks : Bit.ly/SPS-IRP-Feedback
18:28:58 From Athena Christodoulou : Thank you everyone!
18:29:17 From Athena Christodoulou : Gave us back 30 minutes! Hooray
18:29:22 From Jay Griffin : Thanks everyone for attending

Link to Video Recording

https://youtu.be/D8-wFUtRBcc

August 1-2, 2023 Stakeholder Meeting

GRIDWORKS

Meeting #5, August 1-2, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

Approximately 44 stakeholder representatives from 28 different organizations plus a team of Xcel/SPS Energy professionals attended a meeting focused on developing input to SPS's Integrated Resource Plan. SPS and the Lea County Economic Development Council hosted an in-person venue in Hobbs, New Mexico to supplement the virtual ZOOM venue.

The purpose of the meeting was to prepare stakeholders to provide input to the Action Plan in September. Key outcomes of the meeting were:

- ❑ Measure of consensus regarding priority needs
- ❑ Understanding of modeling inputs/assumptions
- ❑ Insights from modeling results completed to date
- ❑ Awareness of stakeholder requested modeling runs

Meeting materials (listed below) in addition to this meeting summary are available at: [Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks]

- SPS IRP Meeting #5 Day 1 – 8/1/23 Video
- SPS IRP Meeting #5 Day 2 – 8/2/23 Video
- Solar+Storage
- Statement of Need Elements 7/24/23
- Slide Deck – Gridworks/SPS IRP 8/1 & 8/2 Stakeholder Engagement Meetings
- Slide Deck – Xcel/SPS IRP Stakeholder Engagement Meetings 8/1 – 8/2/23
- NM IRP Modeling Scenario Requests – 8/1 – 8/2/23
- V2 PRC staff Qs to SPS 7/10/23 w SPS comments

Schedule Revisions

Two revisions to the schedule for the remaining stakeholder meetings were announced:

- ❑ **August 29 meeting time changed. New time is 1:00 PM – 5:00 PM MDT** (previously scheduled from 2 -3:30 PM)
- ❑ **September 13 is a new meeting. Time is 1:00 PM – 3:00 PM MDT**
- ❑ September 21 meeting is unchanged: 1:00 PM – 5:00 PM MDT
- ❑ October 26 meeting is unchanged: 2:00 PM – 3:30 PM MDT

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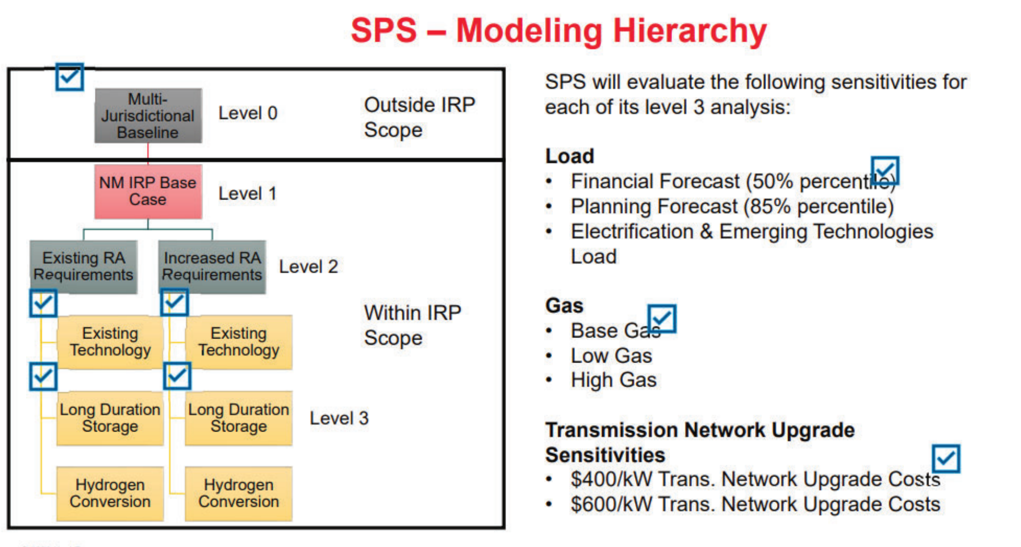
Modeling Results to Date

The SPS team presented updates on modeling assumptions and inputs including the most recent demand and energy forecasts; wind, solar and battery cost and ELCC data; and natural gas and energy market price forecasts. The team also presented draft modeling results to date, which included runs indicated by the check marks in the graphic below. For additional details, see the SPS slide deck, listed above.

Key takeaways from the August 1 presentation and discussion include:

- SPS projects a significant increase in renewable energy resources by 2030 in all scenarios modeled (approximately 2x increase from 2022 to 2030); (See slides 24 and 31)
- Current modeling indicates substantial need for dispatchable capacity and variable renewable energy generation to cost-effectively meet reliability criteria with pending retirements of fossil-fueled generation; and (See slides 41 and 42)
- Future resource needs will be examined further with modeling of remaining scenarios, including stakeholder-requested scenarios.



Stakeholder Requested Modeling Runs

Eight stakeholder model requests were received by SPS by the announced deadline. The SPS modeling team has been working with stakeholders to define the parameters and objectives of each request. A list of the main topics included in the requests follows.

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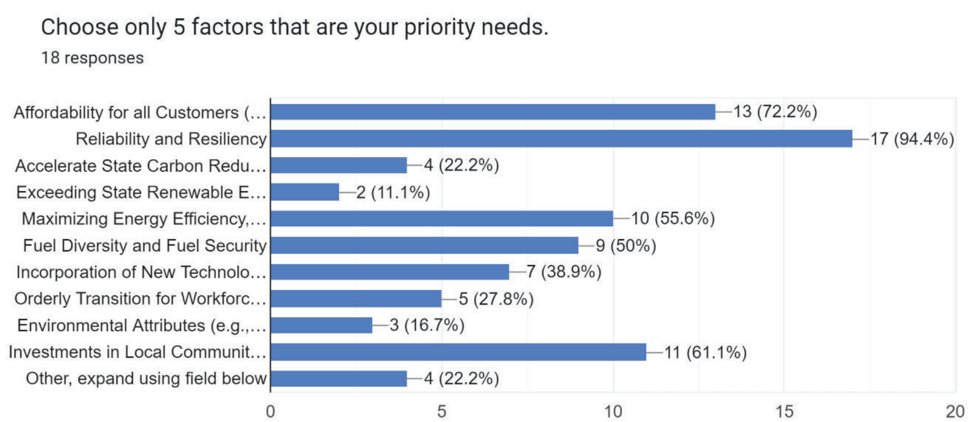
Requests/topics that now defined and have been confirmed with the requestors:
- Aggregated virtual power plant (distributed energy resources)
- Demand response scenario
- Time of use rates scenario
- Early compliance with renewable energy and carbon free targets
- Inclusion of reciprocating engines as a resource option
- Including a load forecast case that reflects high electrification in the commercial and industrial sectors as identified in the Permian Basin Electrification Study

Requests/topics that will be modeled but require discussion on final details include:
- Resource assumptions on hydrogen conversion and CCS deployment
- Tolk retirement in 2028, but with specified generation levels until then
- Environmental compliance costs under the Good Neighbor Plan
- High renewable energy penetration under the Inflation Reduction Act
- Compliance with EPA Section 111

Stakeholders' Needs

Input regarding stakeholders' needs is captured in the input document to the Statement of Need (listed in the meeting materials above). In addition, a mechanism for assessing the level of consensus regarding stakeholder needs was deployed during the meeting. The factors included items listed in the Statement of Need input document, the NM IRP Rule's Appendix A, and ideas offered by stakeholders in prior meetings. Stakeholders were invited to submit their priority needs via a survey tool. Results are shown below:



OTHER FACTORS OFFERED BY RESPONDENTS ARE SHOWN BELOW:

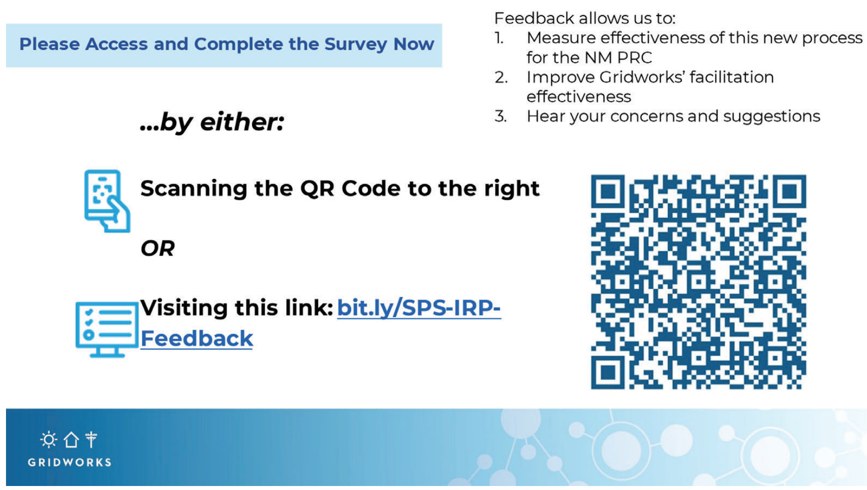
GRIDWORKS

- Ability to grow load-following supply as demand increases due to electrification projects
- Capacity and Resiliency: Ability to handle EVs, Heat Pump HVAC/H2O etc AND Distribution Level Resiliency with no single points of failure or dependence on the National Grid
- It may be interesting to see how this group responds to these priority needs, but the PRC Staff looks at the requirements of the IRP App A.
- Support the development of the world and human growth with accessible energy through fossil fuel availability and cleaner energy than what is being used in developing nations.

NEXT MEETING: The next meeting of the group, Meeting #6, is scheduled for August 29. The focus will be discussion of all modeling results.
Meeting time is 1 PM – 5 PM. The meeting will take place on ZOOM:
https://us02web.zoom.us/j/8569536132 (ID: 8569536132)

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.



Xcel Energy®

SOUTHWESTERN PUBLIC SERVICE COMPANY
2023 NEW MEXICO INTEGRATED RESOURCE PLAN

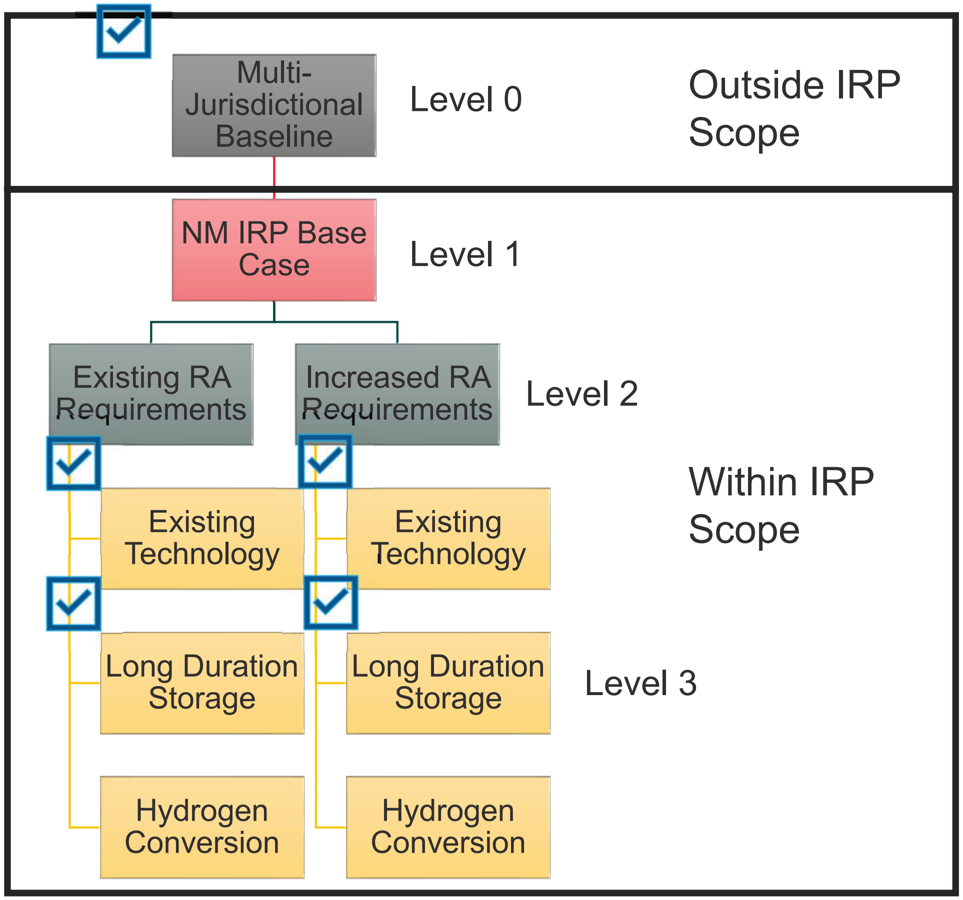
August 1-2, 2023

Important Notes

Although the modeling presented today incorporates updated final critical modeling assumptions, the results are still considered draft. SPS will continue to check the model inputs and outputs for accuracy. Any corrections or changes to the modeling inputs and assumptions may change the results. SPS will present full and final results prior to filing the IRP.

When determining the most cost-effective portfolio of resources, SPS relies upon generic cost estimates for modeling new generating resources. Future resource acquisitions will be dependent upon the firm pricing and availability of new resources.

SPS – Modeling Hierarchy



SPS will evaluate the following sensitivities for each of its level 3 analysis:

Load

- Financial Forecast (50% percentile)
- Planning Forecast (85% percentile)
- Electrification & Emerging Technologies Load

Gas

- Base Gas
- Low Gas
- High Gas

Transmission Network Upgrade Sensitivities

- $400/kW Trans. Network Upgrade Costs
- $600/kW Trans. Network Upgrade Costs

UPDATED LOAD & ENERGY ASSUMPTIONS

Demand & Energy Forecast

- Demand and Energy forecast is a *critical* modeling input

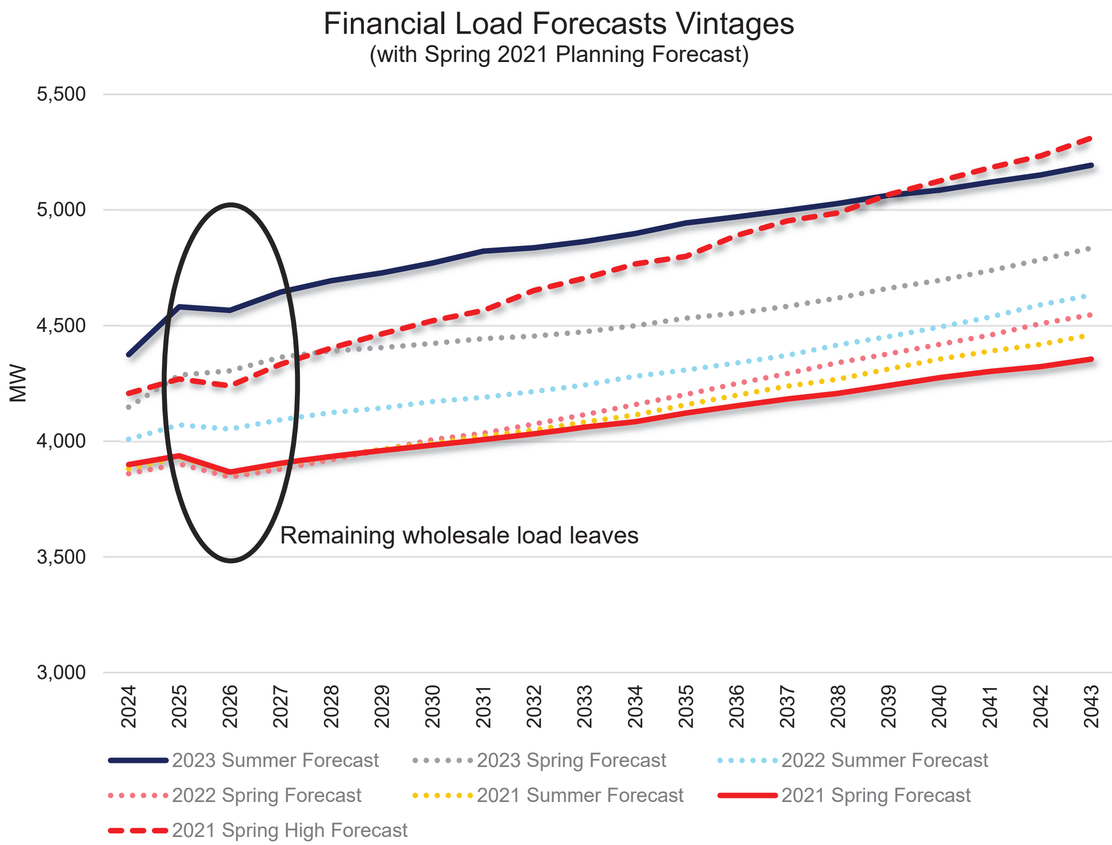
- Modeling three alternative underlying demand and energy forecasts
  - ➢ Financial Forecast (conservative)
  - ➢ Planning Forecast (medium)
  - ➢ Emerging Technologies & Electrification (high)

- The *Financial Forecast* is focus of today's modeling results

- Under the most conservative load forecast the capacity and resource need is the smallest

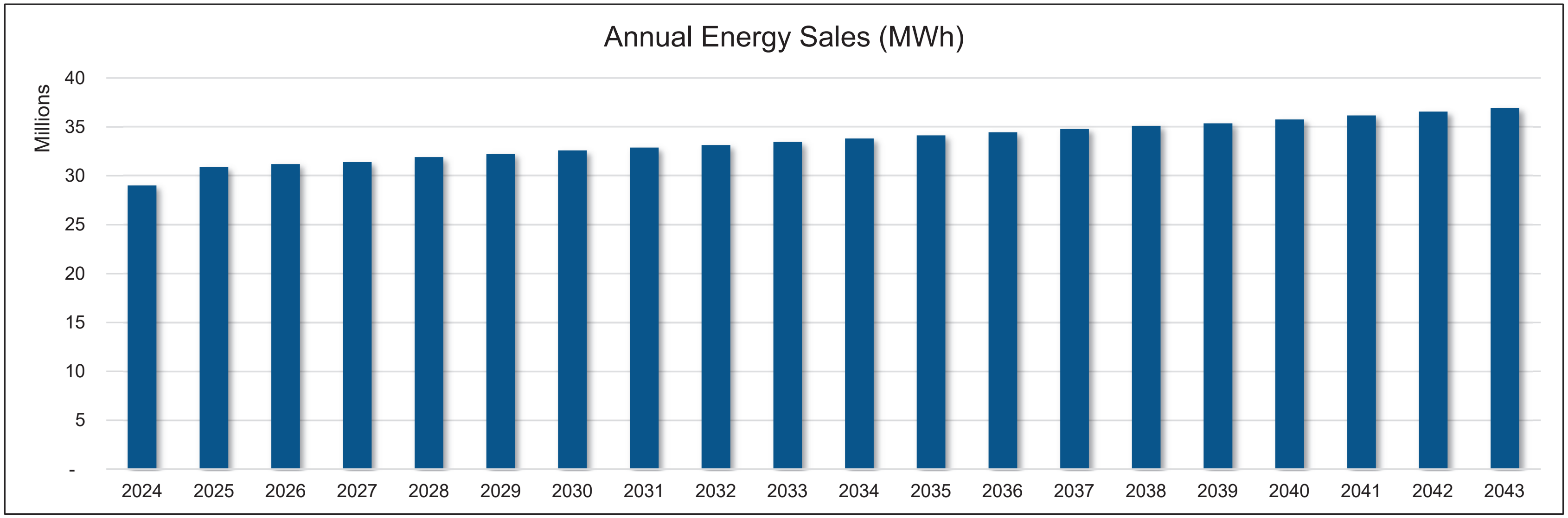
- The modeling presented today includes an updated demand and energy forecast

Summer Demand Forecast
(Financial Forecast)



- SPS releases two load forecasts each year (Spring and Summer)
- Compared to the 2021 IRP financial forecast (base) the current financial forecast has increased by 838 MW by 2043 (with most of the growth occurring before the end of this decade)
- The current financial forecast is up to 327 MW higher than the 2021 IRP planning forecast (high)

Annual Energy Forecast
(Financial Forecast)



- Under the financial forecast, Energy sales are projected to increase from 29 million MWh to 37 million MWh between 2024 and 2043
- Does not include the energy required to charge battery energy storage

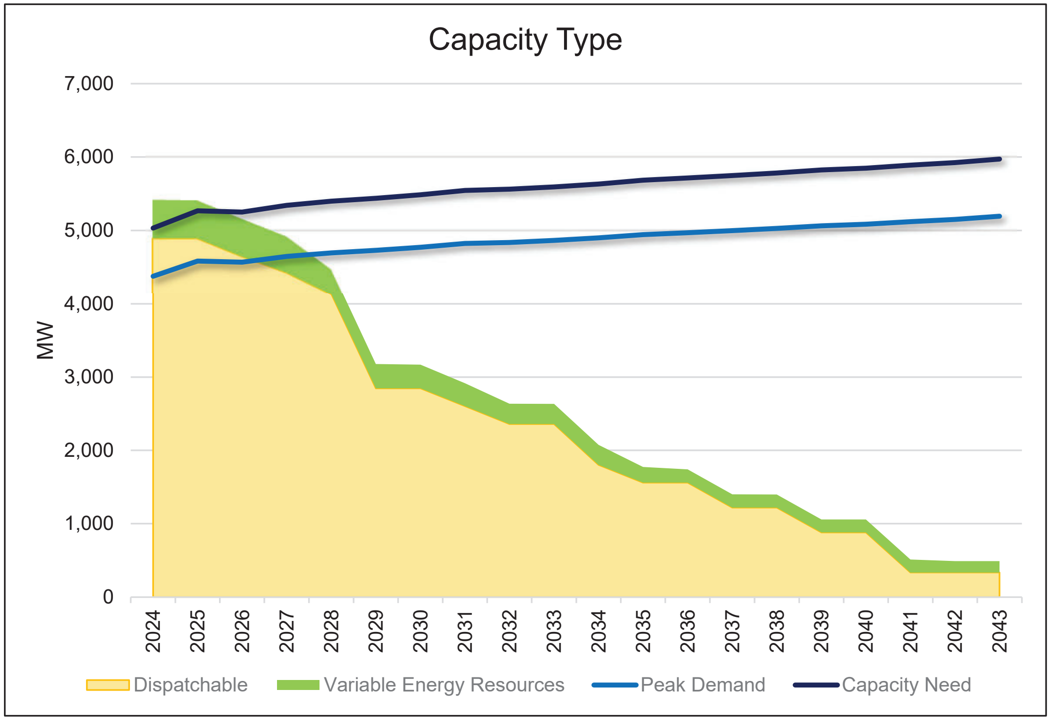
Summer Loads & Resources Table
(Financial Forecast)

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Peak Demand	4,375	4,581	4,566	4,645	4,695	4,728	4,771	4,822	4,837	4,864
Planning Reserve Margin Requirement (15%)	656	687	685	697	704	709	716	723	726	730
Capacity Need	5,031	5,268	5,251	5,342	5,399	5,438	5,487	5,546	5,562	5,593
Accredited Capacity	5,418	5,411	5,158	4,918	4,472	3,178	3,170	2,916	2,636	2,635
Capacity Position	**387**	**142**	**(93)**	**(424)**	**(927)**	**(2,260)**	**(2,317)**	**(2,629)**	**(2,926)**	**(2,959)**

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Peak Demand	4,899	4,943	4,970	4,998	5,028	5,063	5,085	5,120	5,151	5,193
Planning Reserve Margin Requirement (15%)	735	742	745	750	754	759	763	768	773	779
Capacity Need	5,634	5,685	5,715	5,748	5,782	5,822	5,848	5,887	5,924	5,972
Accredited Capacity	2,075	1,773	1,740	1,399	1,398	1,058	1,058	511	490	490
Capacity Position	**(3,559)**	**(3,912)**	**(3,975)**	**(4,348)**	**(4,384)**	**(4,765)**	**(4,790)**	**(5,377)**	**(5,434)**	**(5,482)**

- The new resources selected from SPS's 2022 RFP will resolve the capacity need through 2027
- However, even under the most conservative load growth assumptions, SPS has a substantial and growing capacity need over the next 20-years

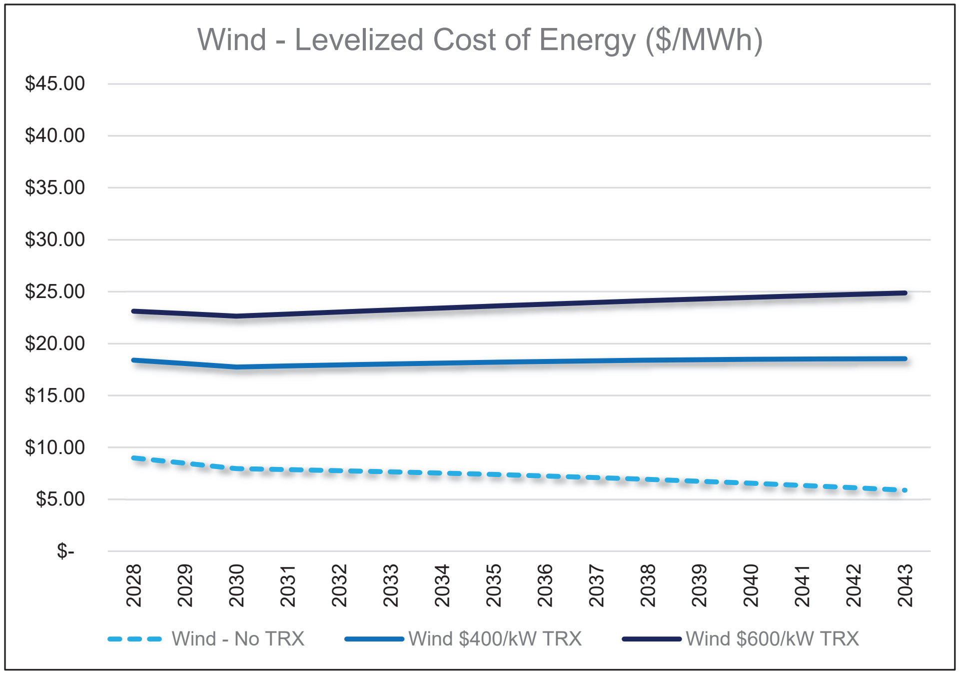
Existing Summer Accredited Capacity Mix

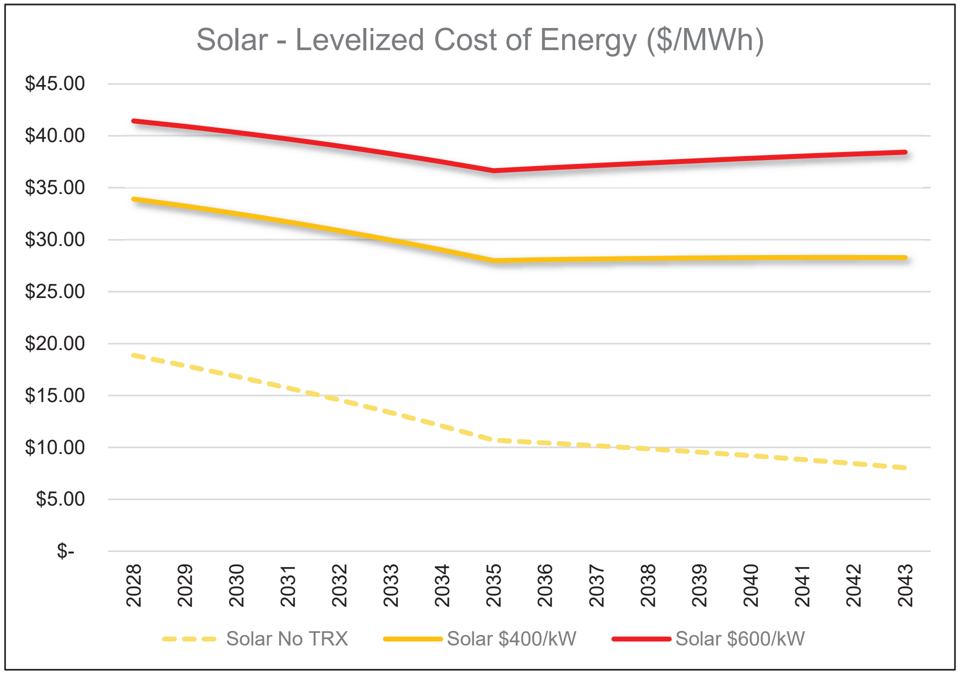


- Accredited capacity considers a generator's contribution to meeting peak demand
- Variable energy resources includes solar and wind resources
- Dispatchable resources can provide energy when called upon – includes CTs, CCs, and BESS
- Cannot maintain a reliable system with only variable energy resources – requires dispatchable resources to either generate or charge/discharge

2023 NREL COST DATA & UPDATED ELCC PROJECTIONS

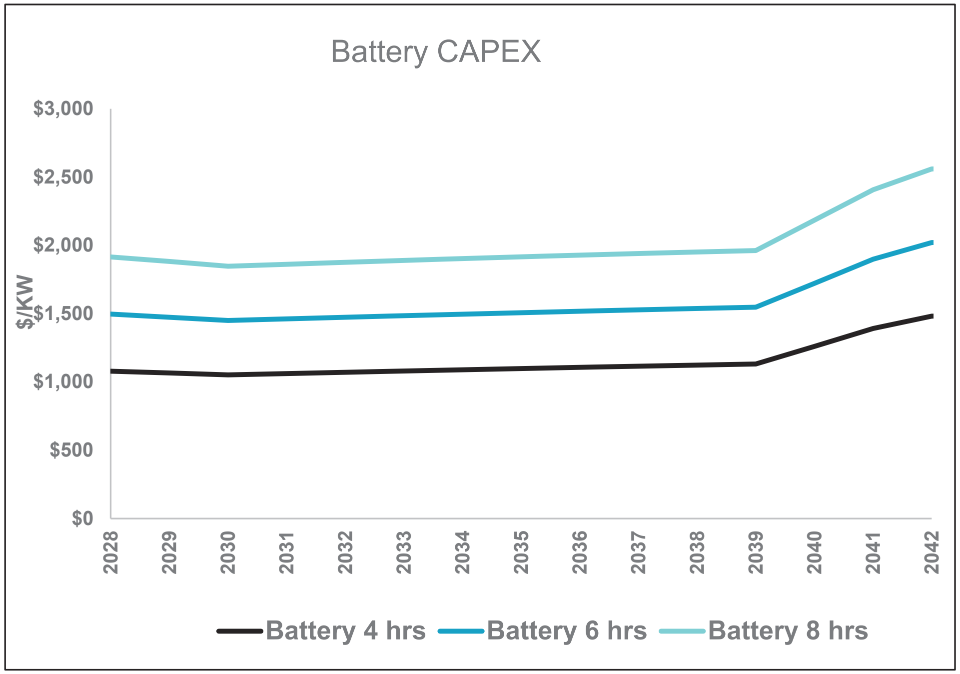
Generic Wind & Solar Resources - LCOE

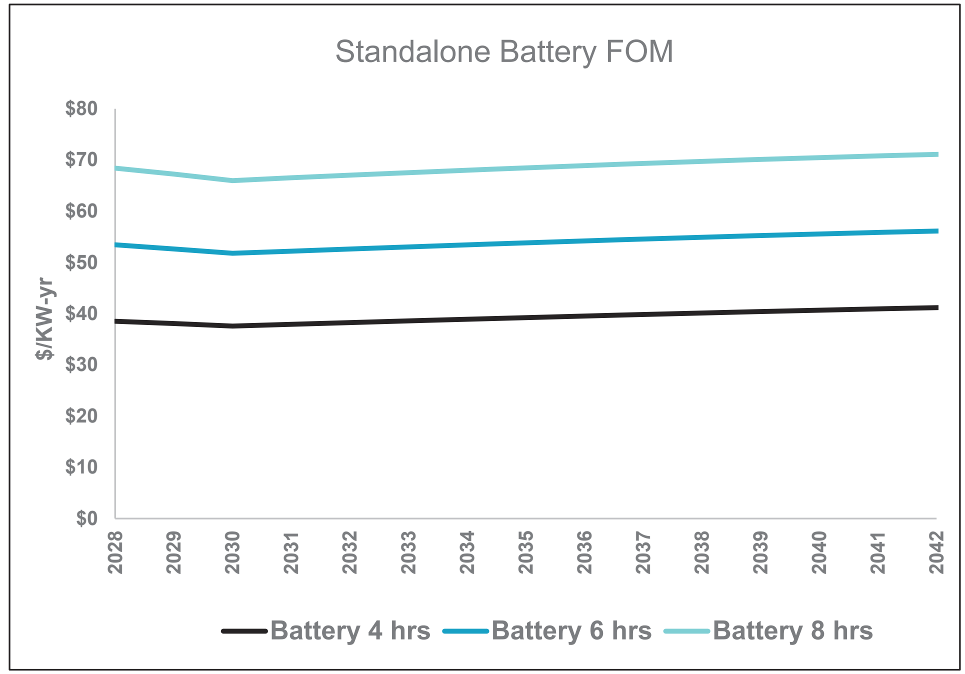




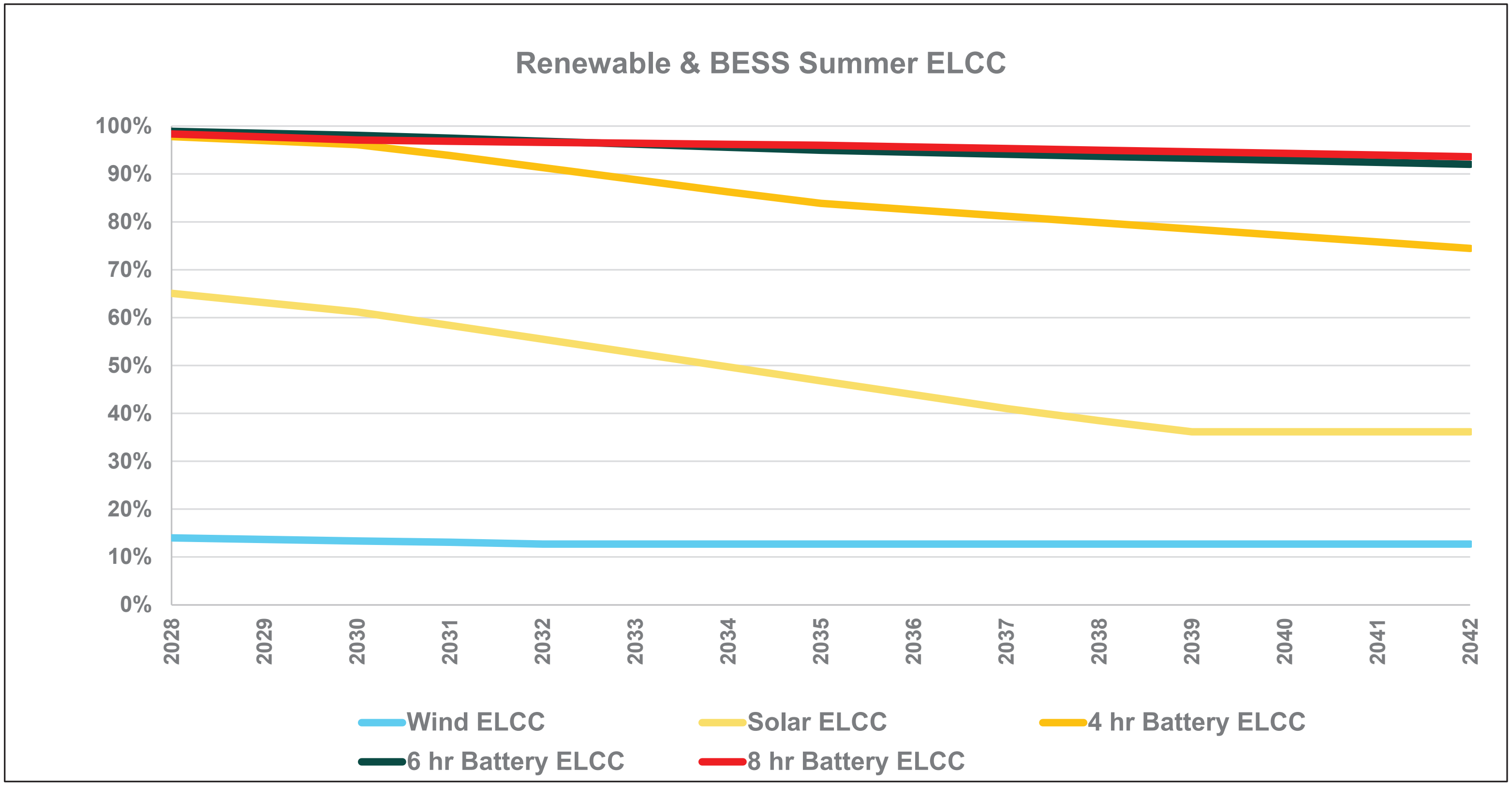
- SPS is evaluating renewable resources under two cost sensitivities for transmission network upgrades - $400/kW and $600/kW (some exceptions apply)
- Future resource procurements will be subject to firm pricing and availability

BESS – Cost Assumptions



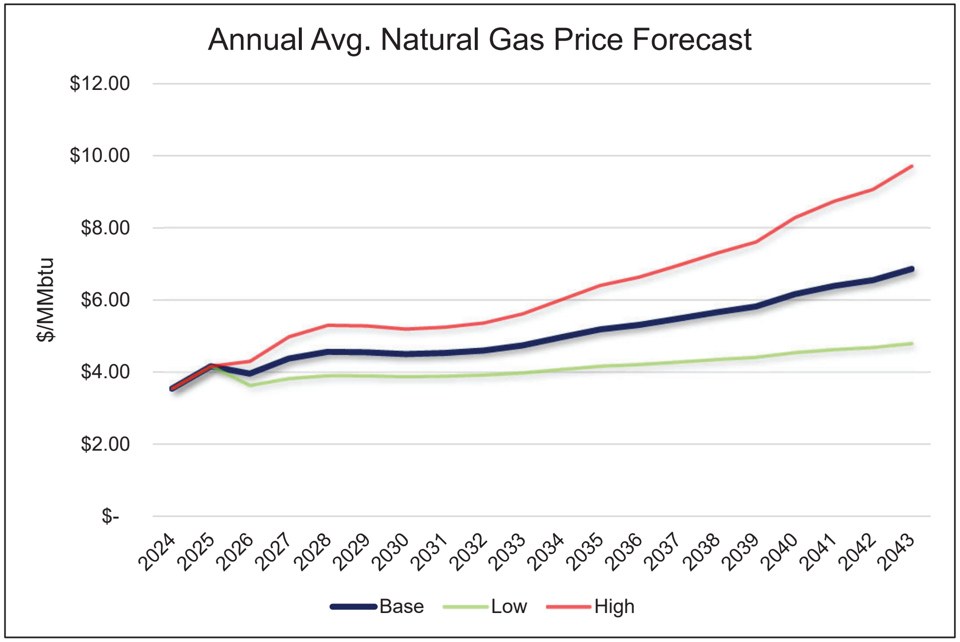


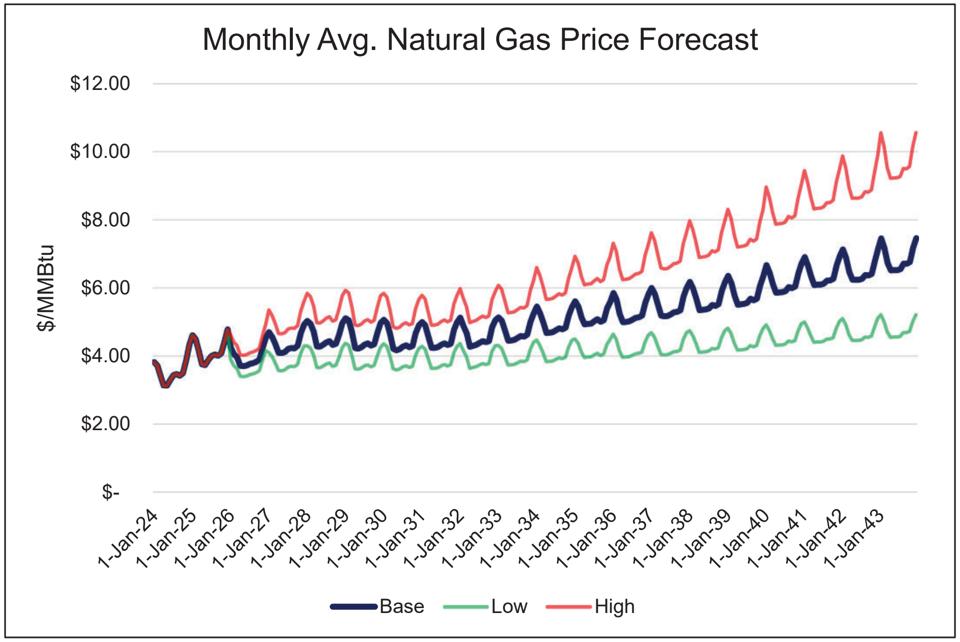
Forecasted ELCC Values – Summer



NATURAL GAS & MARKET ENERGY PRICE FORECASTS

Natural Gas Price Forecasts - Final

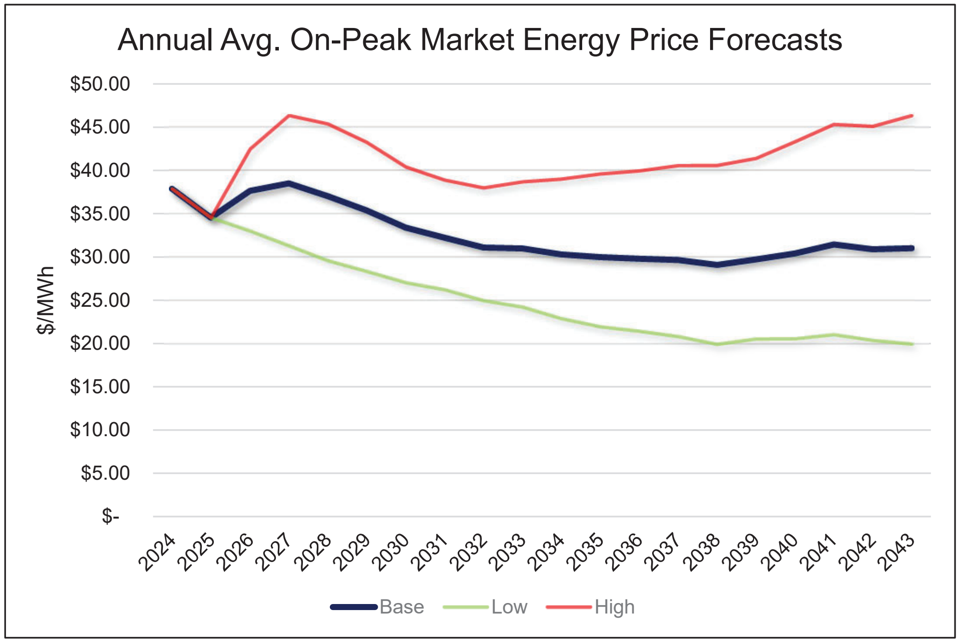


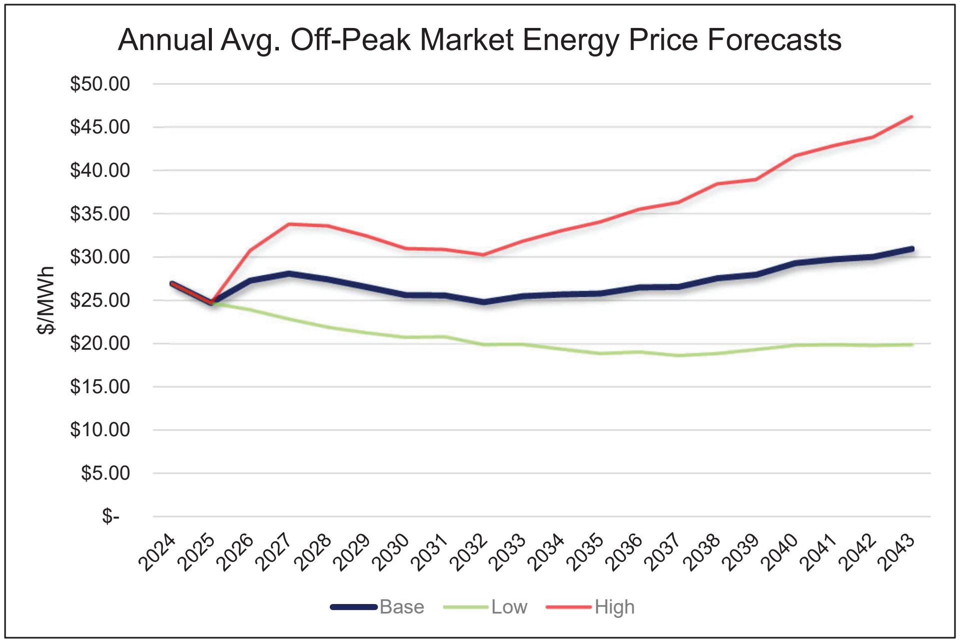


Presented in nominal dollars

SPS will present analyses using a base, low, and high natural gas and market energy price forecasts.

Market Energy Price Forecasts - Final





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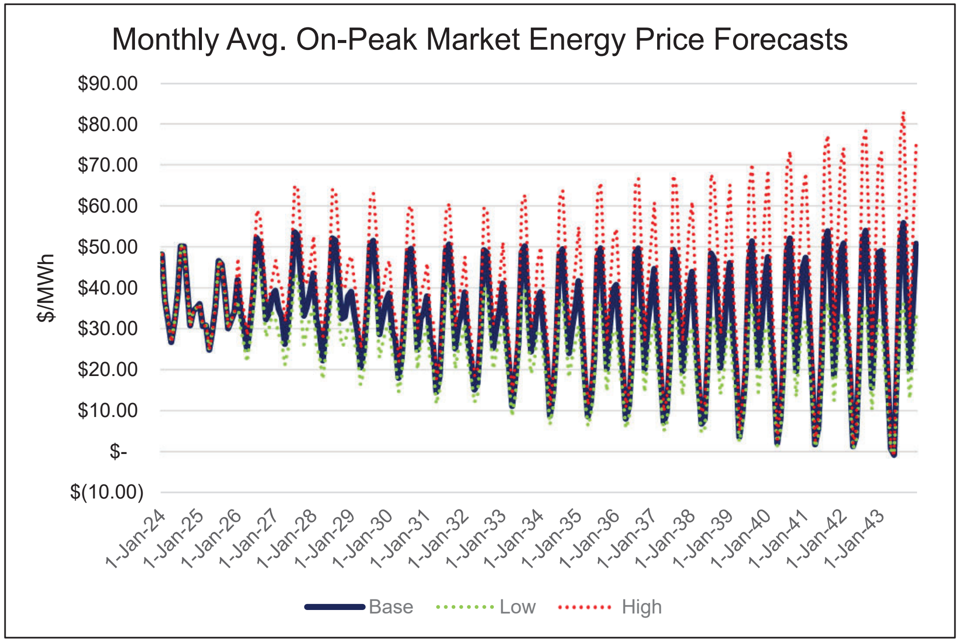

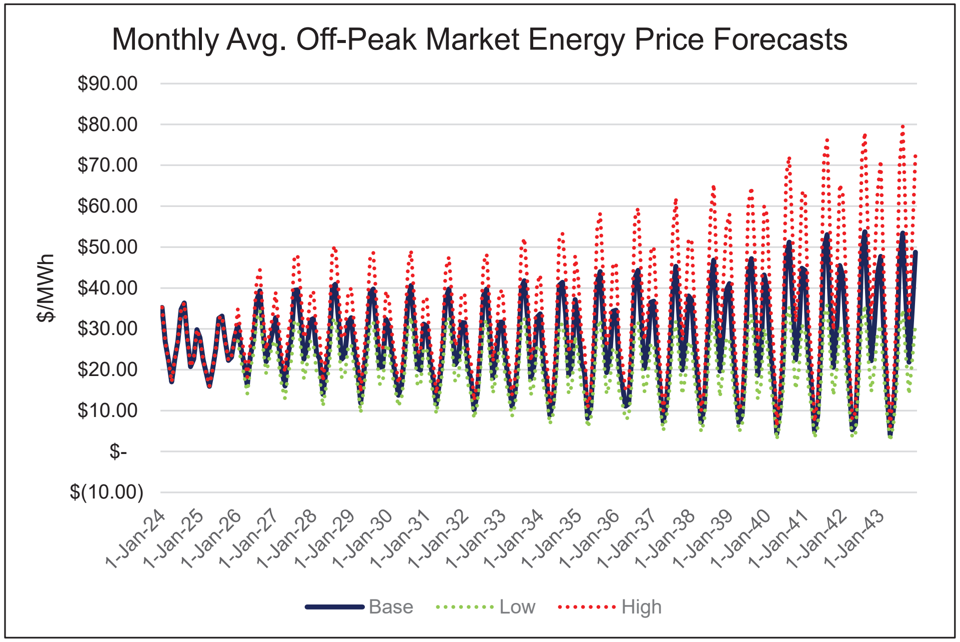

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MULTI-JURISDICTIONAL BASELINE

Multi-Jurisdictional Baseline

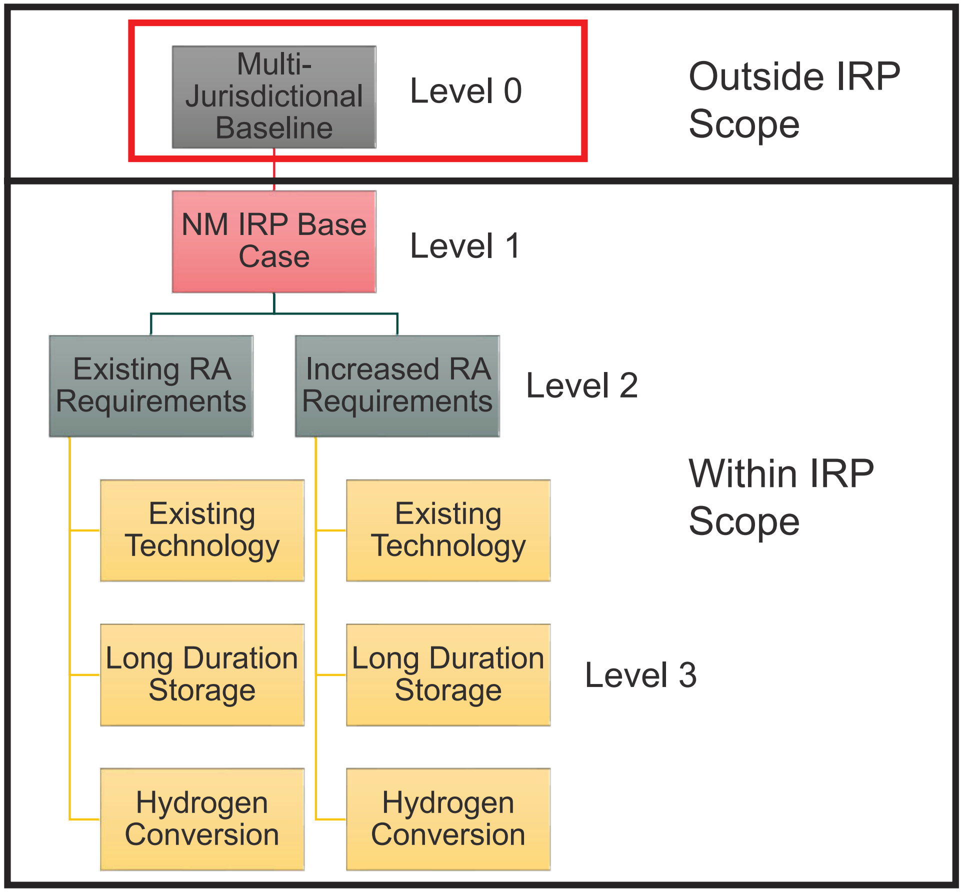
17.7.3.8 D:
A multi-jurisdictional utility shall include in its IRP a description of its resource planning requirements in the other state(s) where it operates, and a description of how it is coordinating the IRP with its out-of-state resource planning requirements.

SPS
- Is a multi-jurisdictional utility serving retail customers in Texas, and wholesale customers;
- Is not required to file an IRP in Texas;
- Conducts resource planning analyses on a system-wide basis

Before conducting any analysis, SPS will first perform EnCompass modeling excluding any jurisdictional specific requirements (e.g., renewable portfolio standards) to establish a baseline for out-of-state decision-making purposes only.

This analysis ***will not*** form SPS's base case in the 2023 NM IRP. All scenarios included in the 2023 NM IRP ***will be*** compliant with NM jurisdictional rules and requirements

SPS – Modeling Hierarchy



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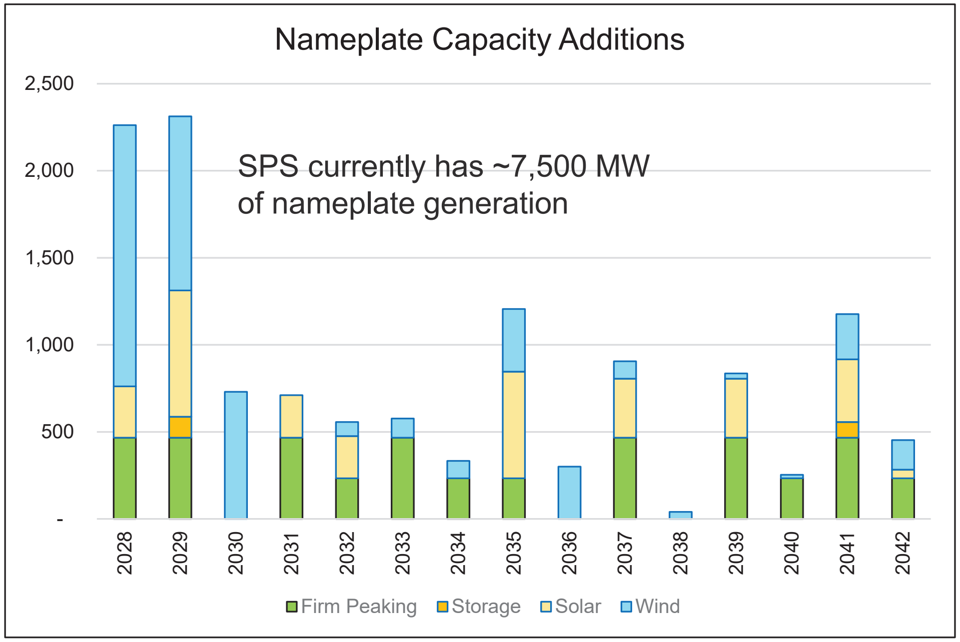
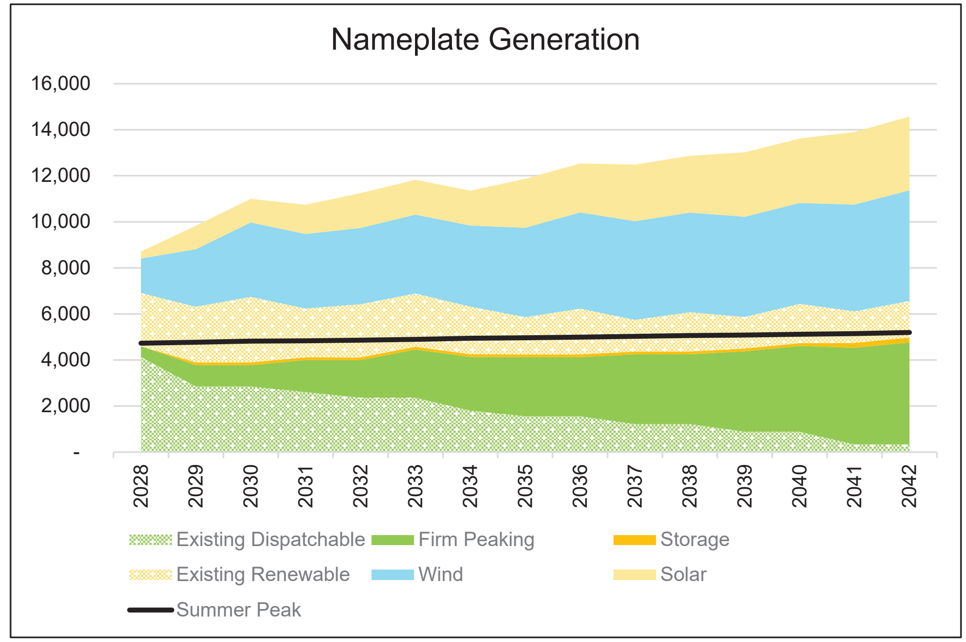
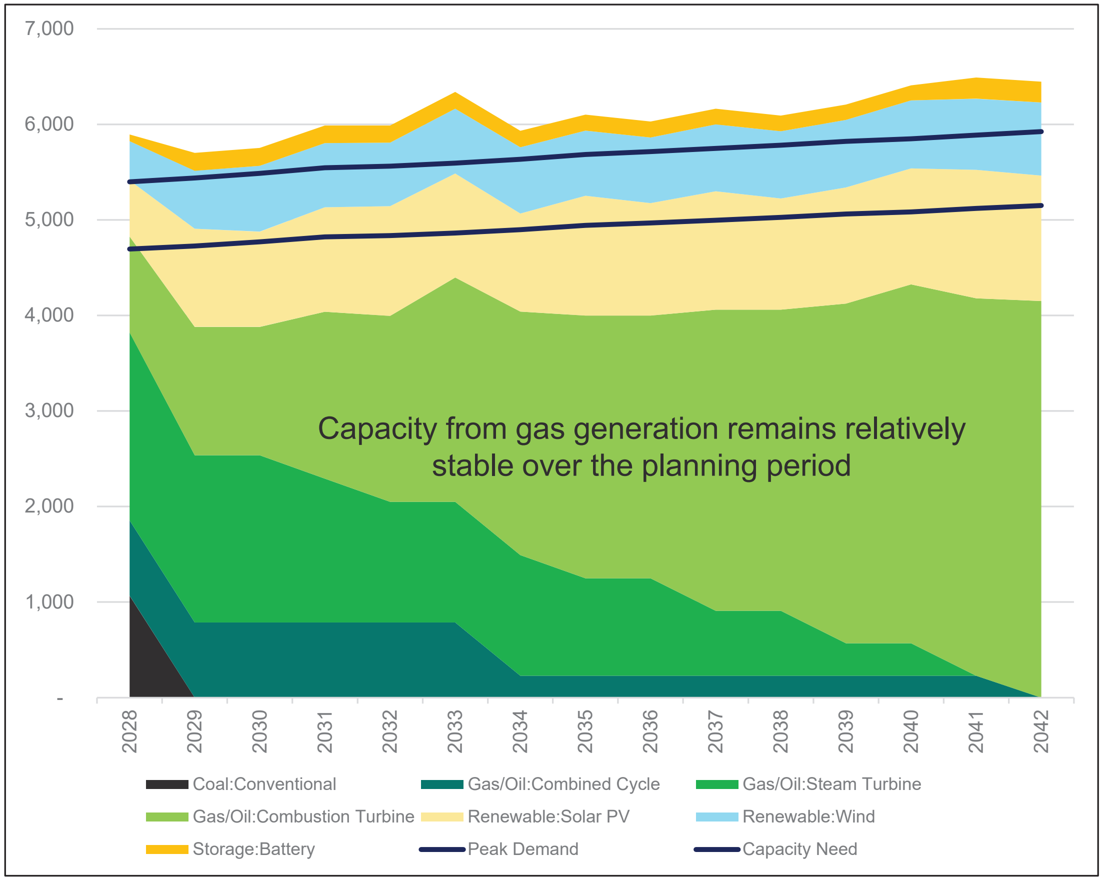
Nameplate Resource Additions

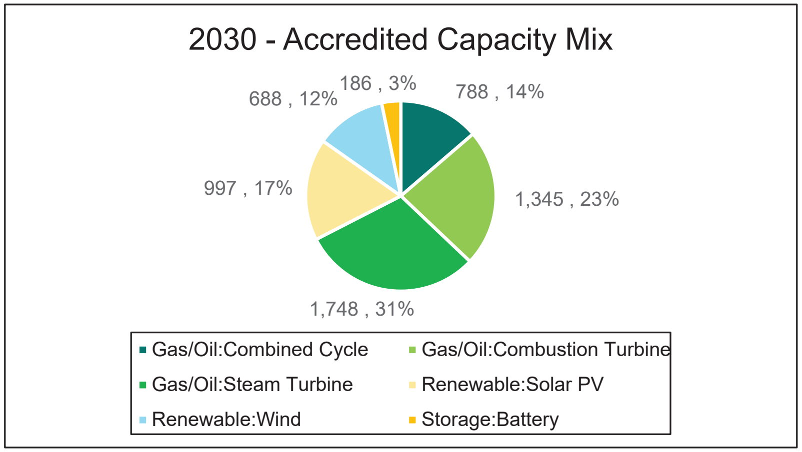


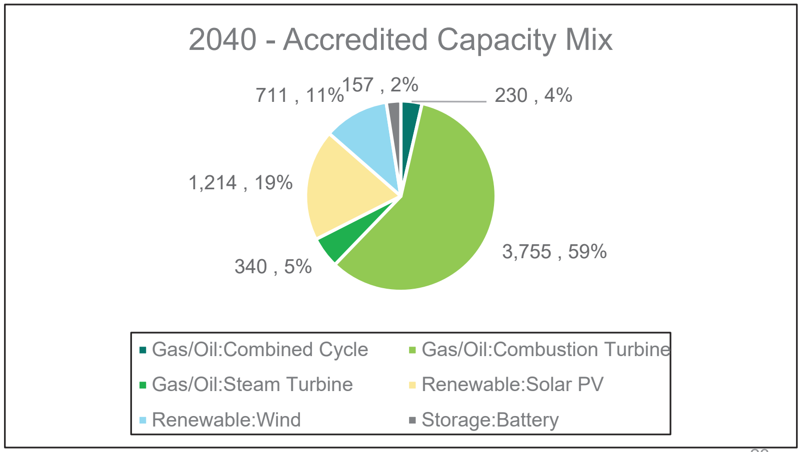


	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing Renewable	2,315	2,414	2,845	2,119	2,313	2,312	2,069	1,620	1,983	1,370	1,709	1,370	1,709	1,370	1,590
Existing Dispatchable	4,133	2,847	2,847	2,603	2,360	2,360	1,802	1,559	1,559	1,220	1,220	881	881	334	334
Storage	-	120	120	120	120	120	120	120	120	120	120	120	120	210	210
Wind	1,500	2,500	3,230	3,230	3,310	3,420	3,520	3,880	4,180	4,280	4,320	4,350	4,370	4,630	4,800
Solar	295	1,021	1,021	1,265	1,508	1,508	1,508	2,121	2,121	2,460	2,460	2,799	2,799	3,159	3,209
Firm Peaking	467	933	933	1,400	1,633	2,100	2,333	2,566	2,566	3,033	3,033	3,500	3,733	4,199	4,433
Total	**8,710**	**9,835**	**10,996**	**10,737**	**11,244**	**11,820**	**11,352**	**11,866**	**12,529**	**12,483**	**12,862**	**13,020**	**13,612**	**13,902**	**14,576**

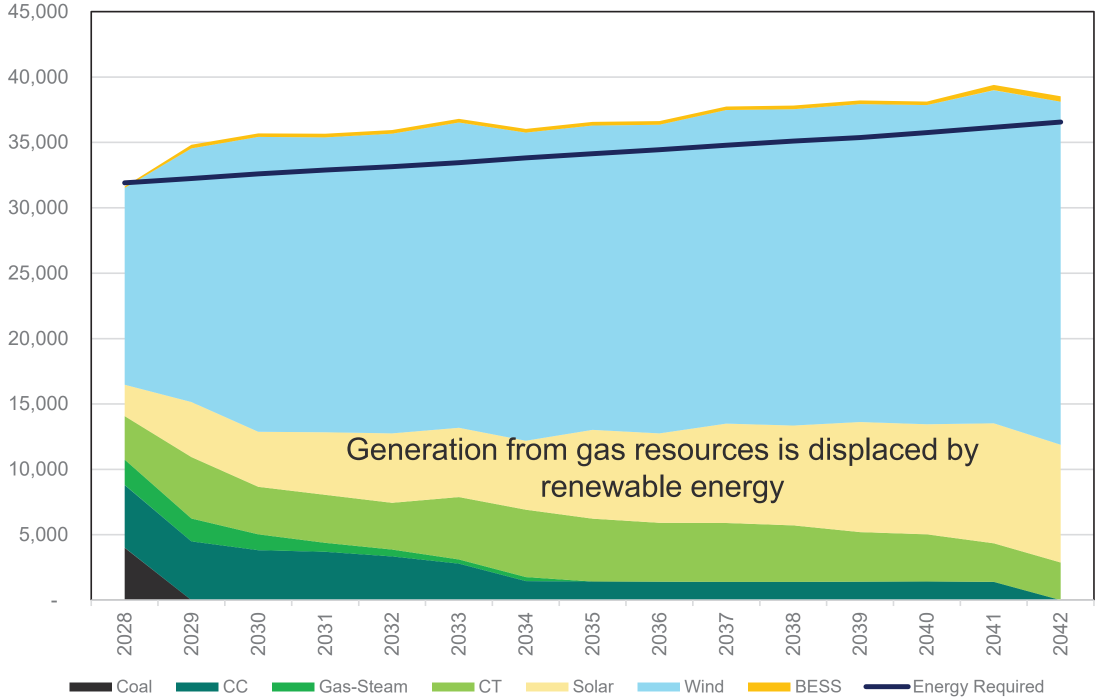
Accredited Capacity (MW)

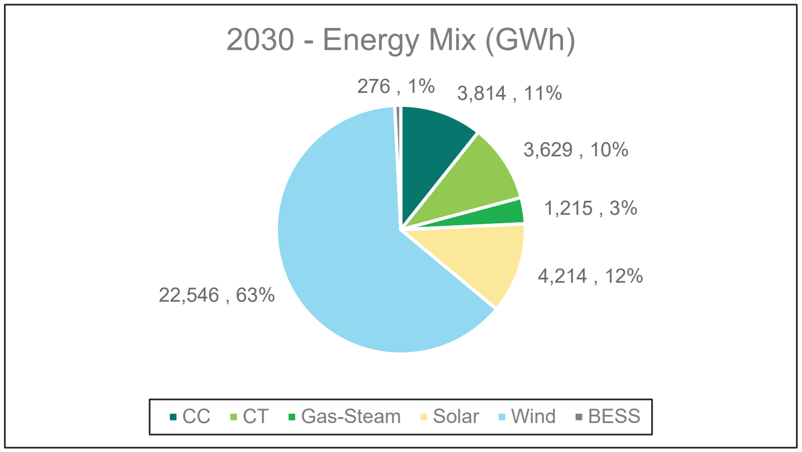


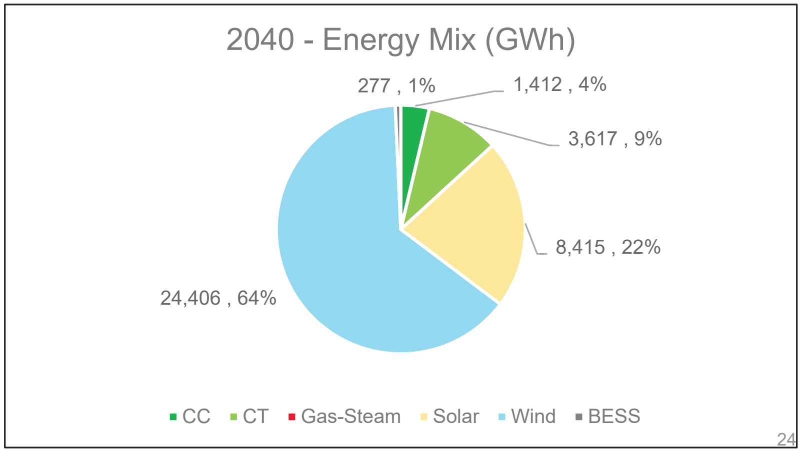




Energy (GWh)







- 76% renewable generation + BESS in 2030 increasing to 87% in 2040 which exceeds RPS Requirements 50% and 80%, respectively (Note: This analysis does not include an RPS constraint)

Key Takeaways

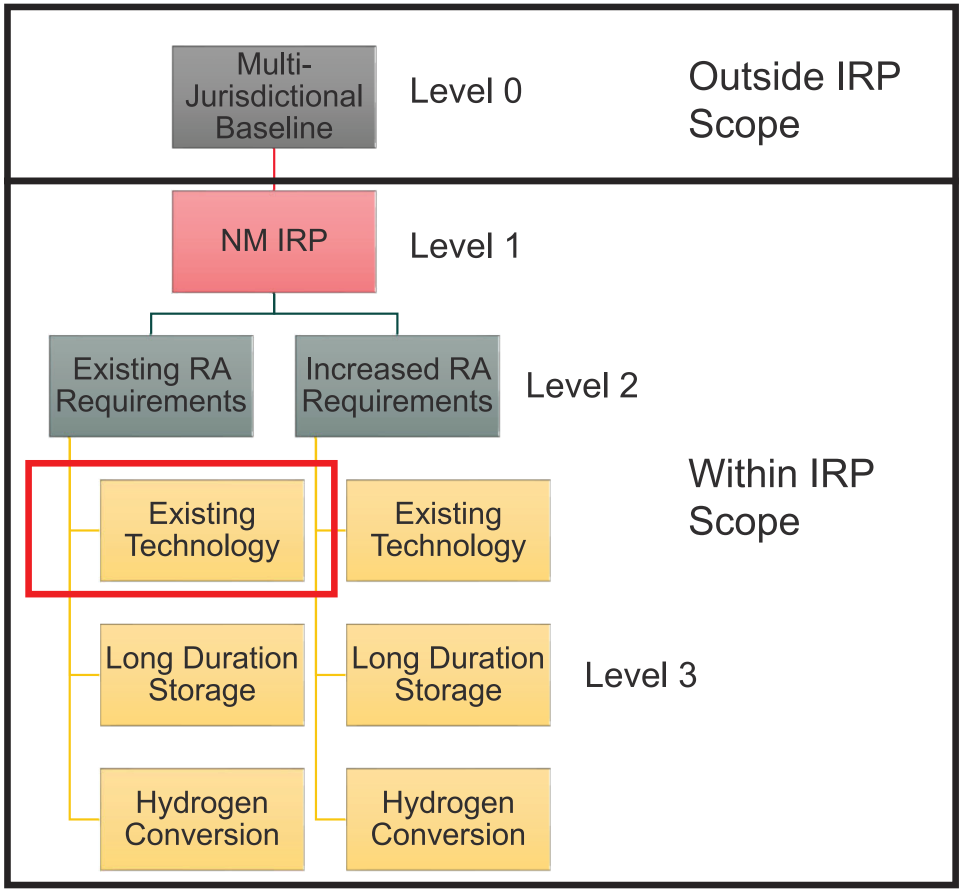
- Multi-Jurisdictional baseline under the financial load forecast (most conservative assumption) assuming a 15% PRM, requires the fewest new generating resources
- SPS's capacity need is 2,317 MW in 2030, increasing to 4,790 MW in 2040
- SPS's recently filed CCN solves approximately 600 MW of this need
- To fulfil the remaining capacity need, EnCompass adds:

Technology	2030	2040
Storage	120	120
Wind	3,230	4,370
Solar	1,021	2,799
Firm Peaking	933	3,733

- 76% renewable energy + BESS in 2030, increasing to 87% BESS in 2040
- Lowest Bookend for 2024 RFP would seek 1,053 MW of dispatchable resources and 4,251 MW of variable energy resources (subject to pricing and availability of projects submitted)

[COMMERCIALLY AVAILABLE] EXISTING CARBON-FREE TECHNOLOGIES

SPS – Modeling Hierarchy



SPS will evaluate the following sensitivities for each of its level 3 analysis:

Load
- Financial Forecast (50% percentile)
- Planning Forecast (85% percentile)
- Electrification & Emerging Technologies Load

Gas
- Base Gas
- Low Gas
- High Gas

Transmission Network Upgrade Sensitivities
- Base Transmission Network Upgrade Costs
- High Transmission Network Upgrade Costs

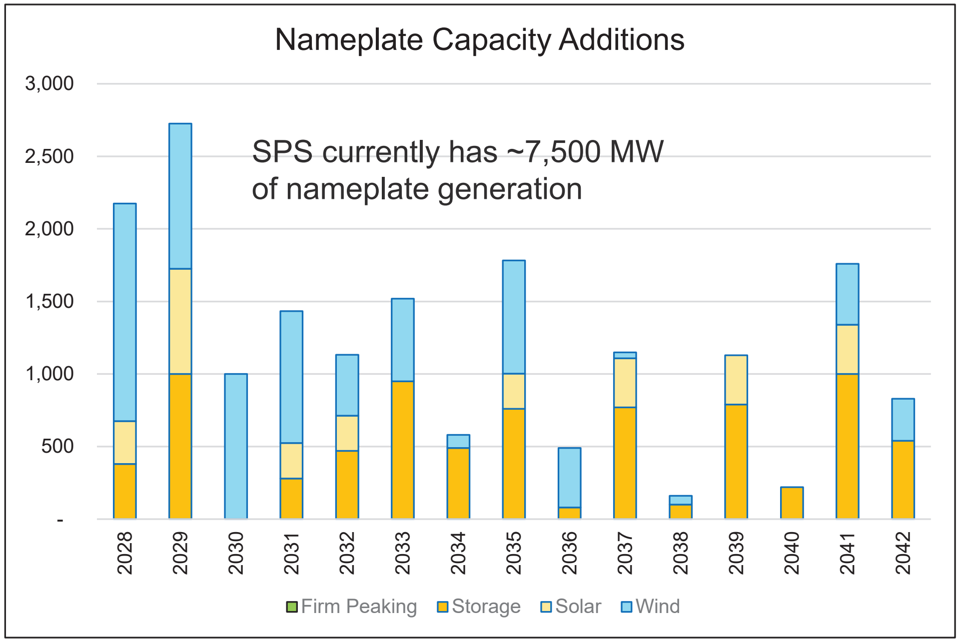
Summer Loads & Resources Table
(Financial Forecast)

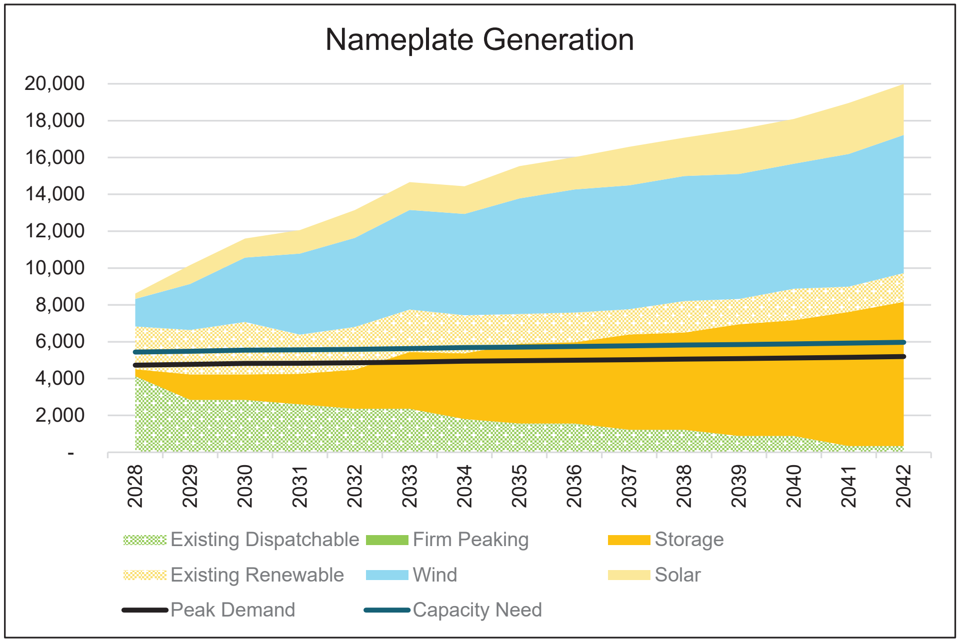
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Peak Demand	4,375	4,581	4,566	4,645	4,695	4,728	4,771	4,822	4,837	4,864
Planning Reserve Margin Requirement (15%)	656	687	685	697	704	709	716	723	726	730
Capacity Need	5,031	5,268	5,251	5,342	5,399	5,438	5,487	5,546	5,562	5,593
Accredited Capacity	5,418	5,411	5,158	4,918	4,472	3,178	3,170	2,916	2,636	2,635
Capacity Position	**387**	**142**	**(93)**	**(424)**	**(927)**	**(2,260)**	**(2,317)**	**(2,629)**	**(2,926)**	**(2,959)**

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Peak Demand	4,899	4,943	4,970	4,998	5,028	5,063	5,085	5,120	5,151	5,193
Planning Reserve Margin Requirement (15%)	735	742	745	750	754	759	763	768	773	779
Capacity Need	5,634	5,685	5,715	5,748	5,782	5,822	5,848	5,887	5,924	5,972
Accredited Capacity	2,075	1,773	1,740	1,399	1,398	1,058	1,058	511	490	490
Capacity Position	**(3,559)**	**(3,912)**	**(3,975)**	**(4,348)**	**(4,384)**	**(4,765)**	**(4,790)**	**(5,377)**	**(5,434)**	**(5,482)**

- The new resources selected from SPS’s 2022 RFP will resolve the capacity need through 2027
- However, even under the most conservative load growth assumptions, SPS has a substantial and growing capacity need over the next 20-years

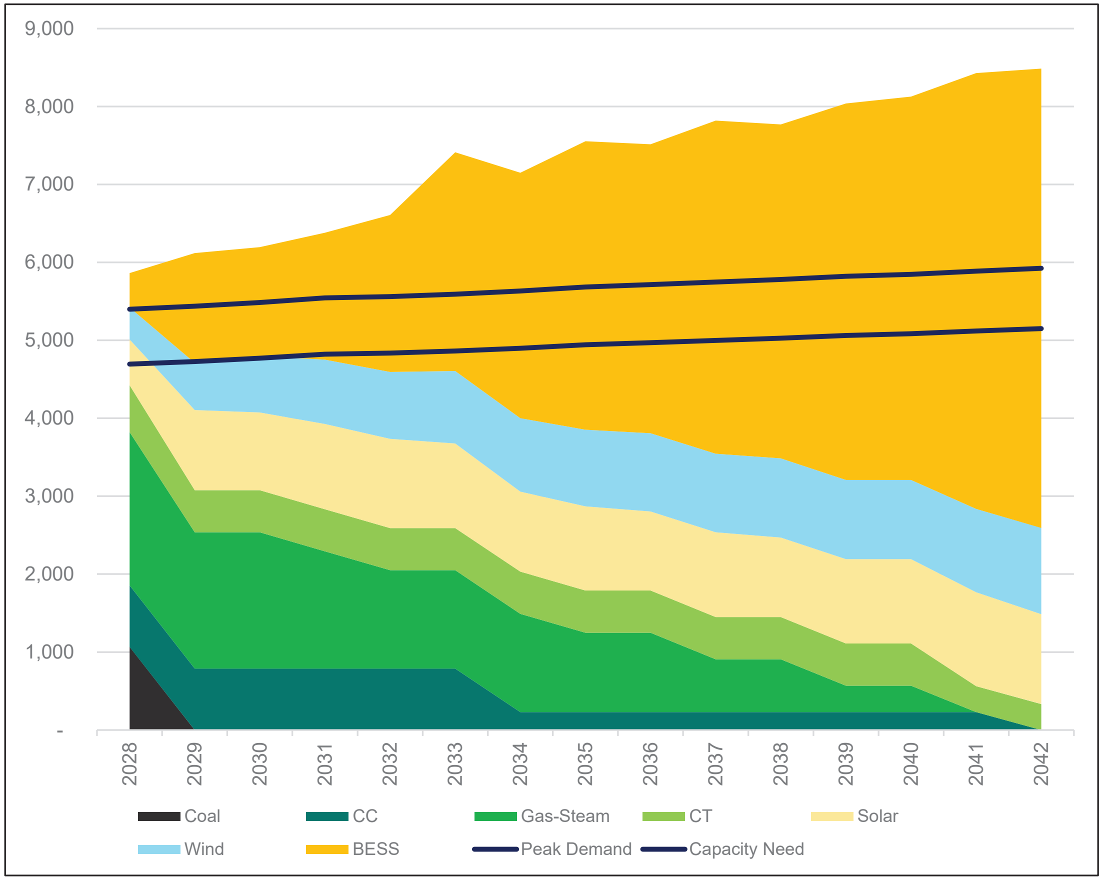
Nameplate Resource Additions

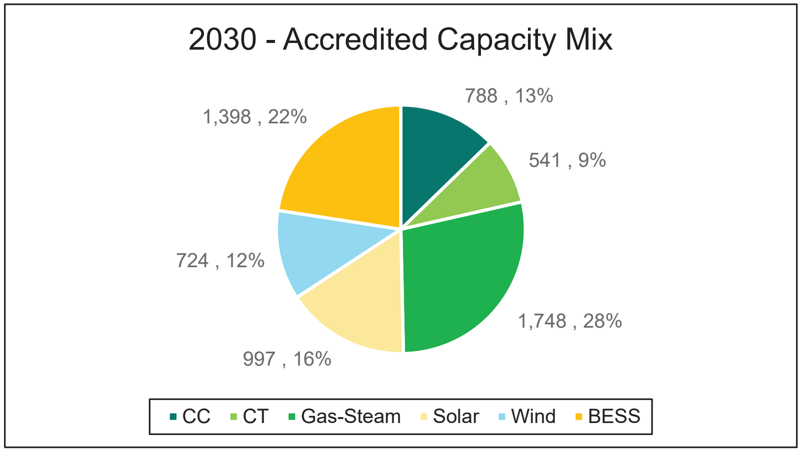


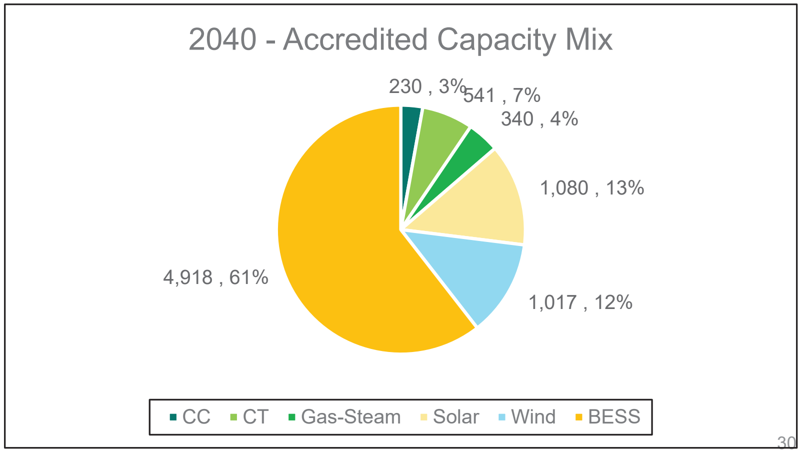


	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing Renewable	2,315	2,414	2,845	2,119	2,313	2,312	2,069	1,620	1,613	1,370	1,709	1,370	1,709	1,370	1,570
Existing Dispatchable	4,133	2,847	2,847	2,603	2,360	2,360	1,802	1,559	1,559	1,220	1,220	881	881	334	334
Storage	380	1,380	1,380	1,660	2,130	3,080	3,570	4,330	4,410	5,180	5,280	6,070	6,290	7,290	7,830
Wind	1,500	2,500	3,500	4,410	4,830	5,400	5,490	6,270	6,680	6,720	6,780	6,780	6,780	7,200	7,490
Solar	295	1,021	1,021	1,265	1,508	1,508	1,508	1,751	1,751	2,090	2,090	2,429	2,429	2,769	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**8,623**	**10,162**	**11,593**	**12,057**	**13,141**	**14,660**	**14,439**	**15,530**	**16,013**	**16,580**	**17,079**	**17,530**	**18,089**	**18,963**	**19,993**

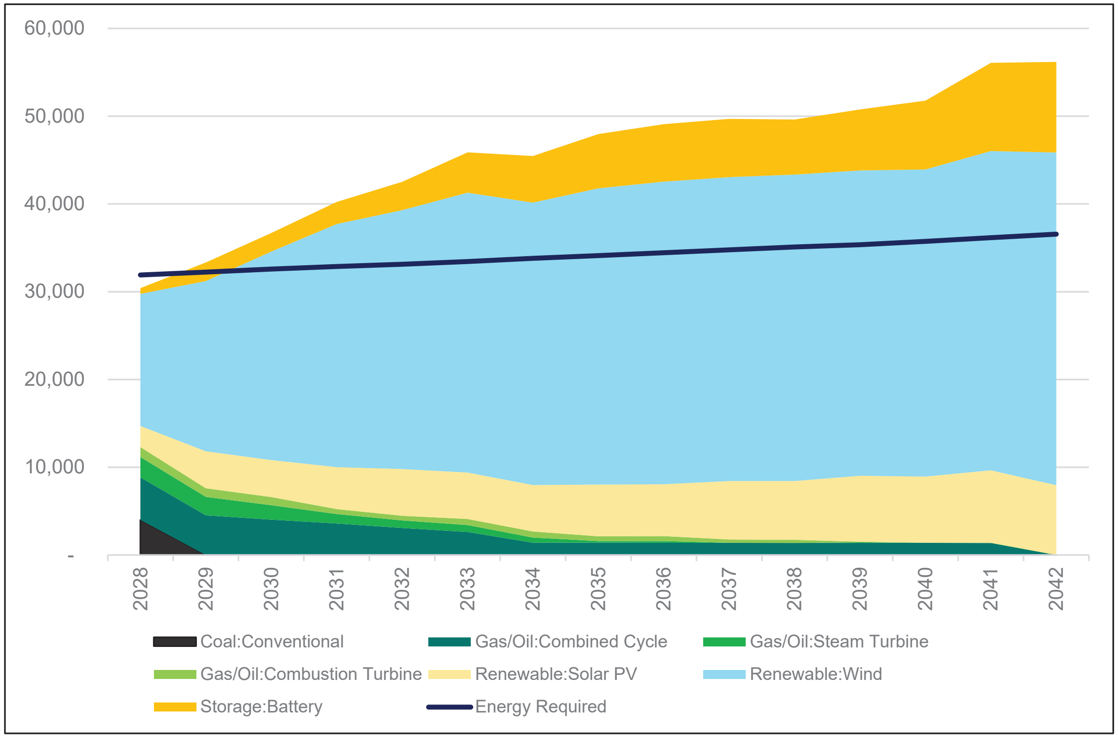
Accredited Capacity

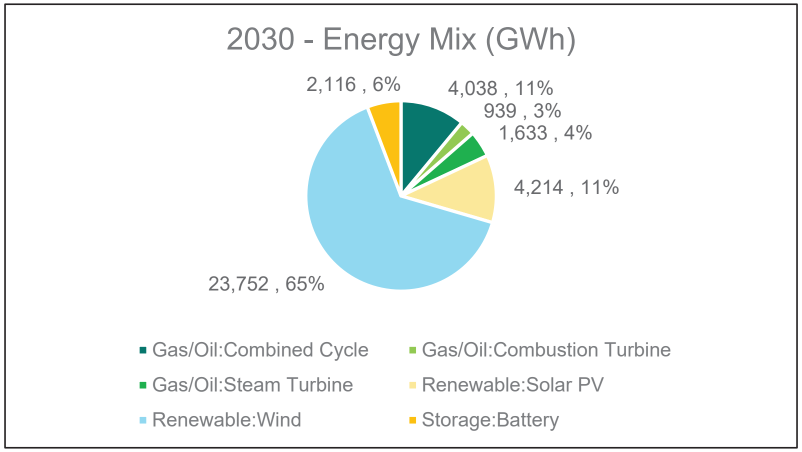


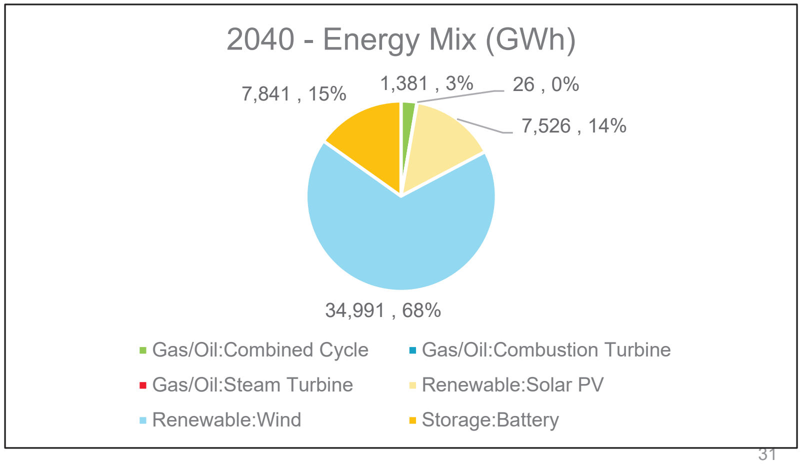




Energy (GWh)







- 81% renewable + BESS in 2030 increasing to almost 97% in 2040

Key Takeaways

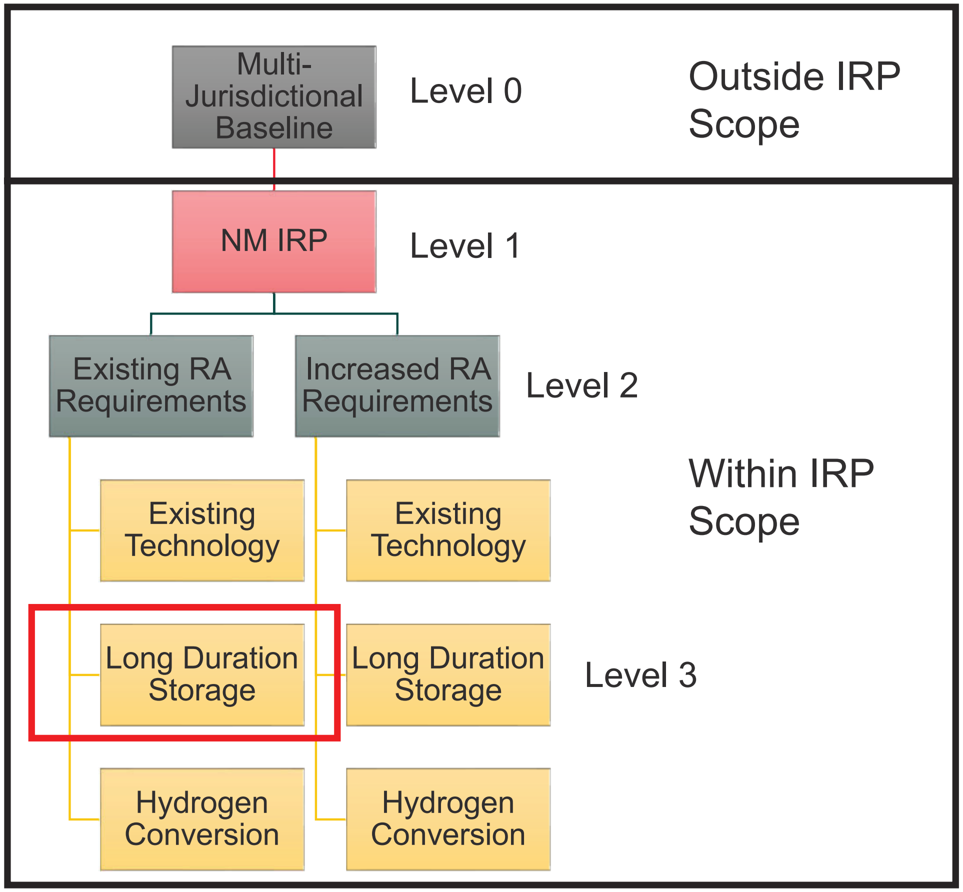
- SPS's capacity need is 2,317 MW in 2030, increasing to 4,790 MW in 2040
- SPS's recently filed CCN solves approximately 600 MW of this need
- To fulfil the remaining capacity need, EnCompass adds:

	2030	2040
Storage	1,380	6,290
Wind	3,500	6,780
Solar	1,021	2,429
Firm Peaking	-	-

- Outcome 79% renewable energy in 2030, increasing to 95% in 2040
- High Bookend for 2024 RFP would seek 1,380 MW of dispatchable resources and 4,521 MW of variable energy resources (subject to pricing and availability of projects submitted)

[COMMERCIALLY AVAILABLE] EXISTING CARBON-FREE TECHNOLOGIES + LONG DURATION BATTERY ENERGY STORAGE

SPS – Modeling Hierarchy



SPS will evaluate the following sensitivities for each of its level 3 analysis:

Load
- Financial Forecast (50% percentile)
- Planning Forecast (85% percentile)
- Electrification & Emerging Technologies Load

Gas
- Base Gas
- Low Gas
- High Gas

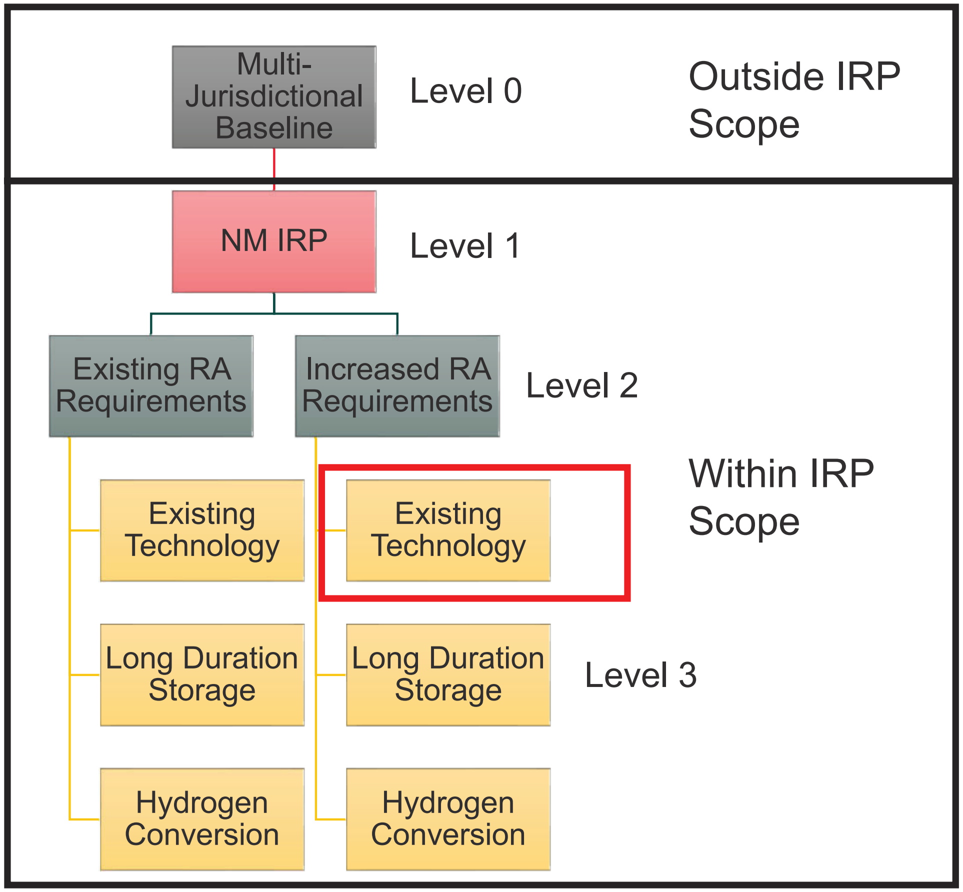
Transmission Network Upgrade Sensitivities
- Base Transmission Network Upgrade Costs
- High Transmission Network Upgrade Costs

PLACEHOLDER

- EnCompass did not select any long-duration battery energy storage projects (100-hours), therefore the results are identical to the existing technologies case
- SPS intends to ‘force’ a long-duration battery energy storage project into the EnCompass model to quantifiable the impact

INCREASED RESOURCE ADEQUACY REQUIREMENTS

SPS – Modeling Hierarchy



SPS will evaluate the following sensitivities for each of its level 3 analysis:

Load
- Financial Forecast (50% percentile)
- Planning Forecast (85% percentile)
- Electrification & Emerging Technologies Load

Gas
- Base Gas
- Low Gas
- High Gas

Transmission Network Upgrade Sensitivities
- Base Transmission Network Upgrade Costs
- High Transmission Network Upgrade Costs

Summer Loads & Resources Table
(Financial Forecast) – 18% PRM

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Peak Demand	4,375	4,581	4,566	4,645	4,695	4,728	4,771	4,822	4,837	4,864
Planning Reserve Margin Requirement (18%)	787	825	822	836	845	851	859	868	871	875
Capacity Need	5,162	5,406	5,388	5,481	5,540	5,580	5,630	5,690	5,707	5,739
Accredited Capacity	5,418	5,411	5,158	4,918	4,472	3,178	3,170	2,916	2,636	2,635
Capacity Position	**256**	**5**	**(230)**	**(563)**	**(1,067)**	**(2,402)**	**(2,460)**	**(2,774)**	**(3,071)**	**(3,105)**

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Peak Demand	4,899	4,943	4,970	4,998	5,028	5,063	5,085	5,120	5,151	5,193
Planning Reserve Margin Requirement (18%)	882	890	895	900	905	911	915	922	927	935
Capacity Need	5,780	5,833	5,864	5,898	5,933	5,974	6,000	6,041	6,078	6,128
Accredited Capacity	2,075	1,773	1,740	1,399	1,398	1,058	1,058	511	490	490
Capacity Position	**(3,706)**	**(4,060)**	**(4,124)**	**(4,498)**	**(4,535)**	**(4,917)**	**(4,943)**	**(5,530)**	**(5,588)**	**(5,638)**

- 18% Summer PRM increases SPS's capacity need by 131 MW to 156 MW between 2024 and 2043 under the financial load forecast
- The new resources selected from SPS's 2022 RFP will resolve the capacity need through 2027
- However, even under the most conservative load growth assumptions, SPS has a substantial and growing capacity need over the next 20-years

Additional Resource - Nameplate
(Financial Forecast) – 18% PRM

	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing Renewable	2,315	2,414	2,845	2,119	2,313	2,312	2,069	1,620	1,613	1,370	1,709	1,370	1,709	1,370	1,570
Existing Dispatchable	4,133	2,847	2,847	2,603	2,360	2,360	1,802	1,559	1,559	1,220	1,220	881	881	334	334
Storage	670	1,670	1,670	1,970	2,440	3,410	3,920	4,760	4,820	5,600	5,710	6,500	6,730	7,730	8,280
Wind	1,500	2,500	3,500	4,500	4,970	5,550	5,700	6,280	6,750	6,790	6,850	6,850	6,850	7,280	7,570
Solar	295	1,021	1,021	1,265	1,508	1,508	1,508	1,751	1,751	2,090	2,090	2,429	2,429	2,769	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**8,913**	**10,452**	**11,883**	**12,457**	**13,591**	**15,140**	**14,999**	**15,970**	**16,493**	**17,070**	**17,579**	**18,030**	**18,599**	**19,483**	**20,523**

	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing Renewable	2,315	2,414	2,845	2,119	2,313	2,312	2,069	1,620	1,613	1,370	1,709	1,370	1,709	1,370	1,570
Existing Dispatchable	4,133	2,847	2,847	2,603	2,360	2,360	1,802	1,559	1,559	1,220	1,220	881	881	334	334
Storage	380	1,380	1,380	1,660	2,130	3,080	3,570	4,330	4,410	5,180	5,280	6,070	6,290	7,290	7,830
Wind	1,500	2,500	3,500	4,410	4,830	5,400	5,490	6,270	6,680	6,720	6,780	6,780	6,780	7,200	7,490
Solar	295	1,021	1,021	1,265	1,508	1,508	1,508	1,751	1,751	2,090	2,090	2,429	2,429	2,769	2,769
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**8,623**	**10,162**	**11,593**	**12,057**	**13,141**	**14,660**	**14,439**	**15,530**	**16,013**	**16,580**	**17,079**	**17,530**	**18,089**	**18,963**	**19,993**

	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing Renewable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Existing Dispatchable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	290	290	290	310	310	330	350	430	410	420	430	430	440	440	450
Wind	-	-	-	90	140	150	210	10	70	70	70	70	70	80	80
Solar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Firm Peaking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**290**	**290**	**290**	**400**	**450**	**480**	**560**	**440**	**480**	**490**	**500**	**500**	**510**	**520**	**530**

IDENTIFIED RESOURCE NEED

Identified Resource Need Through 2030

Technology	Multi-Jurisdictional Baseline	Existing Technologies – 15% PRM	Existing Technologies – 18% PRM
Storage	120	1,380	1,670
Firm Peaking	933	-	-
Dispatchable	**1,530**	**1,380**	**1,670**
Wind	3,230	3,500	3,500
Solar	1,021	1,021	1,021
Variable Energy Resources	**4,251**	**4,521**	**4,521**

Under the Financial Forecast, SPS has identified a need of between 1,380 MW and 1,670 MW of dispatchable capacity and 4,251 MW to 4,521 MW of variable energy resources before Summer 2030

Actual capacity need is subject to firm pricing and resource availability

Identified Resource Need Through 2040

Technology	Multi-Jurisdictional Baseline	Existing Technologies – 15% PRM	Existing Technologies – 18% PRM
Storage	120	6,290	6,730
Firm Peaking	3,733	-	-
Dispatchable	**3,853**	**6,290**	**6,730**
Wind	4,370	6,780	6,850
Solar	2,799	2,429	2,429
Variable Energy Resources	**7,169**	**9,209**	**9,279**

Under the Financial Forecast, SPS has identified a need of between 3,853 MW and 6,730 MW of dispatchable capacity and 7,169 MW to 9,279 MW of variable energy resources before Summer 2040

Actual capacity need is subject to firm pricing and resource availability

2023 NEW MEXICO INTEGRATED RESOURCE PLANNING ("IRP")

Modeling Scenario Requests

Distributed Energy Resources

"I would be interested in modeling a battery powered virtual power plant program similar to the pilot program by the New Hampshire Electric Cooperative"

- *Jim DesJardins, REIA*

Existing PRM (15%)	Electrification & Emerging Technologies Load	Base	Base Upgrade Costs ($400/kW)	Long Duration Storage (100 hr)

Quantification:

SPS proposes to include DERs as selectable resources in EnCompass, capable of providing the equivalent of 5% of New Mexico total residential and small C&I sales. SPS will use NREL cost data to estimate to cost of the resources. If EnCompass does not economically select the DERs, SPS will run a case with these resources 'forced' into EnCompass to quantify the cost impact.

Demand Response

"Run a model which allows no cost demand response. This will enable to SPS to back out the value of demand response on its system compared to other resources. The demand response should be available year round, callable once per day, callable hours equal 100, callable at any time of day. This program should be incremental to any DR in the existing forecast.

- Michael Kenney, SWEEP

Existing PRM (15%)	Planning Load (85%)	Base	Base Upgrade Costs ($400/kW)	Long Duration Storage (100 hr)

Quantification:

SPS proposes to include a 200 MW demand response program using the parameters described above (or similar) at no cost. SPS will then provide the PVRR savings associated with the program

Time Of Use Rates

"Model an updated load forecast which reflects residential and small commercial load shift in response to dynamic rate such as time of use. I recommend shifting energy use from SPSs net peak period and into the overnight or midday period."

- Michael Kenney, SWEEP

Existing PRM (15%)	Electrification & Emerging Technologies Load	Base	Base Upgrade Costs ($400/kW)	Existing Technology Only - Wind, Solar, Battery (4hr, 6hr, 8hr)

Quantification:

SPS proposes to shift 5% of New Mexico residential and small C&I sales in the 4 peak hours to off-peak.

Early Compliance

"Please model early achievement of decarbonization goals. This would mean 80% carbon-free resources by 2030 and 95% by 2035 on the pathway to 2040 zero carbon target."

-Michael Keeney, SWEEP

Existing PRM (15%)	Planning Load (85%)	Base	Base Upgrade Costs ($400/kW)	Long Duration Storage (100 hr)

Reciprocating Engines

“Add reciprocating engine as candidate resource. You could assume an 3 engine increment (56 MW) as that's where economies of scale kick in on the balance of plant. I'll provide you in a separate email the cap ex, op ex, and physical parameters you need. I'll also provide "sub-hourly" credits for battery, RICE, and CT, which will be in $/MWh. This should be added as a "negative VOM," and should have the appropriate impact on the capacity factor of the unit. Alternatively I can provide as a fixed $/kw-yr adder. We've calculated these credits in PLEXOS using a SPP node in Carlsbad, NM. As for end state, I can provide a rough capex for a hydrogen conversion in 2044 or whenever you want to do the conversion. I assume you'll have a price forecast for the cost of the hydrogen fuel.”

-David Millar, Wartsila

Increased PRM (18%/20%)	Planning Load (85%)	Base	Base Upgrade Costs ($400/kW)	Hydrogen Conversion

ExxonMobil

"Demand side:
- Include the load demand information out to 2040 for SPS territory provided by the Permian electrification study, added to existing assumptions on other customer growth
- Present the load estimate data out to 2040 broken out by general customer groups, not necessarily rate classes, e.g. Large industry customers, residential, transport electrification, data centers, crypto mining.

Emissions:
- There are two potential emissions related models constraints we would like to have considered:

*1. A model that demonstrates the pathway to 84% renewable deployment for SPS grid (NM & TX) by 2030 per RBC June 7, 2023 conference for the electrification increased load model… external customers are basing their own future emission reduction targets and pathways in part on estimating the future carbon intensity of the gird. Understanding the pathway and likelihood of 84% renewable by 2030 for the SPS grid is important for customers with emissions targets. July 6 material showed 88% renewable by 2030, but not for the increased load anticipated with Permian O&G production electrification and other potential load growth." (**Continued on next pg.)***

ExxonMobil

2. A model that embraces industry leading hydrogen deployment and CCS deployment

a. All new source facilities (including TX given recent 88th session legislation incentives) having the ability to co-fire with 50% low-GHG hydrogen by volume by 2033 (technically feasible today and 2033 incentivizes hydrogen producers with certainty due to current IRA expiring in 2033). The source of hydrogen modelled should be lowest cost and low carbon, based on the known practical cost assumptions for hydrogen generation, transportation and turbine/facility upgrades, and not preferential to any specific color (i.e. green, pink, blue).

b. Existing natural gas base generation facilities blending 30% hydrogen by 2033 or existing natural gas facilities considered base generation retro-fitted with CCS by 2033 based on optimized cost.

-James Hall, ExxonMobil

Existing PRM (15%)	Electrification & Emerging Technologies	Base	Base Upgrade Costs	Hydrogen Conversion

Sierra Club

Existing PRM (15%)	Financial Load (50%)	Low	Base Upgrade Costs ($400/kW)	Existing Technology Only - Wind, Solar, Battery (4hr, 6hr, 8hr)

1. *SPS should conduct a sensitivity modeling the Impact of “high” renewable penetration under the Inflation Reduction Act on SPP import energy prices.*

2. *SPS should run sensitivities for compliance with EPA’s Section 111(b) and 111(d) regulations for new and existing EGUs with the following considerations:*
   a. *Tolk: Because Tolk plans to retire in 2028, no new controls would be required but the model should limit those units to their current emissions rate through 2028.*
   b. *Harrington: Because Harrington plans to convert to gas by 2025, the units should be modeled to include 111(b) limits for existing gas plants.*
   c. *Jones: SPS should explain whether Jones will continue to operate past 2032, and if so, whether the facility would exceed the 300 MW threshold for existing units under 111(b).*

(Continued on next pg.)

Sierra Club

d. *For any new gas plants added to the system: New resources and projects should be set up in EnCompass to represent the 3 categories of new gas plants that can be built. All new gas plants (regardless of capacity) will need to follow one of these pathways to be compliant with 111(d). The model should not be able to build any gas plants that do not follow one of these pathways.*

- *i. Peaking plants - Annual capacity factor set to a maximum of 20%.*
- *ii. Intermediate plants - Annual capacity factor set to a maximum of 50%. These plants must start burning fuel that is 30% hydrogen by volume in 2032.*
- *iii. Baseload plants - No capacity factor cap. Baseload plants can either follow the carbon capture and sequestration (CCS) pathway or the hydrogen pathway.*
  - *a. CCS resource requirements - Retrofit cost of CCS incurred in 2035. Increased FOM and VOM associated with CCS incurred in 203 onwards. Account for parasitic load of CCS.*
  - *b. Hydrogen pathway - These plants must burn fuel that is 30% hydrogen by volume in 2032 and fuel that is 96% hydrogen by volume in 2038.*
  - *c. General considerations for modeling 111(b) and 111(d)*

(Continued on next pg.)

Sierra Club

Optimization period:
When modeling retrofit costs in future years, the runs should be set to full optimization so that the model can see these future costs. If you need to run the model with a shorter optimization period for run-time constraints, the future retrofit costs should be levelized so that the future costs are considered during the capacity expansion decision.

Modeling hydrogen:
Model hydrogen endogenously or exogenously (i.e., are you planning on producing the hydrogen yourself or are you assuming a hydrogen economy will exist by the time you need it.). If endogenous, set up electrolyzer resources in EnCompass and connect them to renewable resource generation outputs using Flow Gate constraints. The Inflation Reduction Act's hydrogen PTC can currently be modeled using the variable cost of operating an electrolyzer. If exogenous, EPA assumed a hydrogen price of $1/kg (around $8/MMBtu) in its Regulatory Impact Analysis. Model low and high sensitivities for the price of hydrogen.

(Continued on next pg.)

Sierra Club

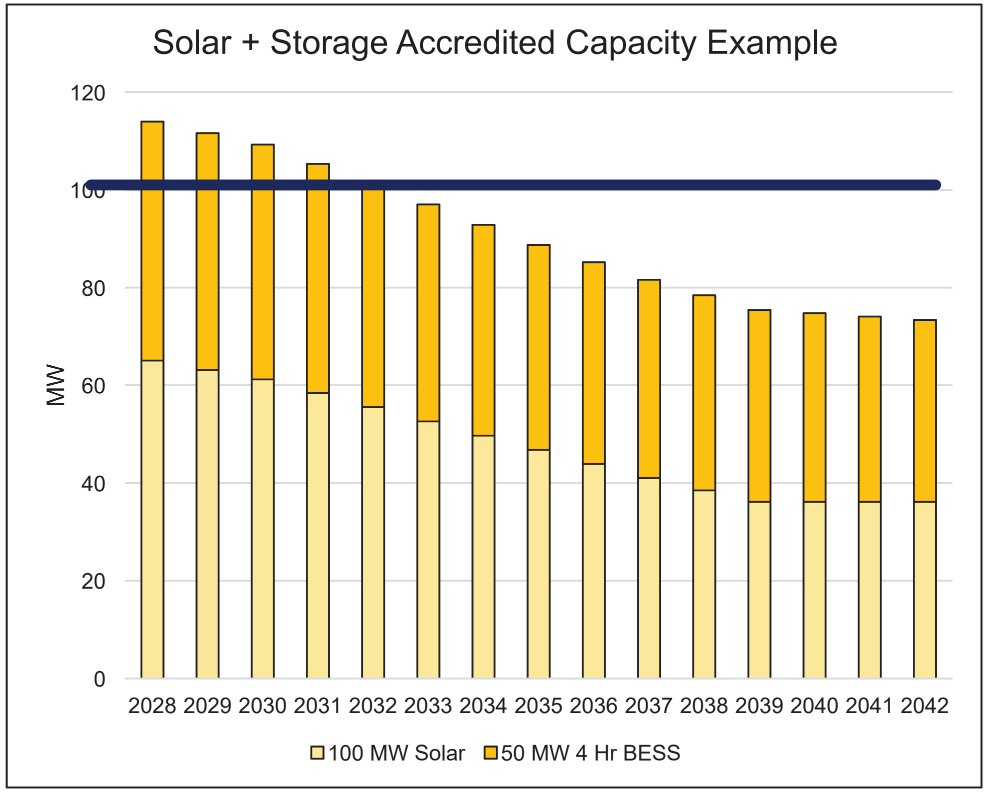
Modeling CCS:
Include capital costs for retrofit, incremental fixed O&M and variable O&M. Include parasitic load assumptions (EPA assumes approximately 11% and as a result, FOM, heat rate, and VOM need to be scaled). Include IRA tax credits.

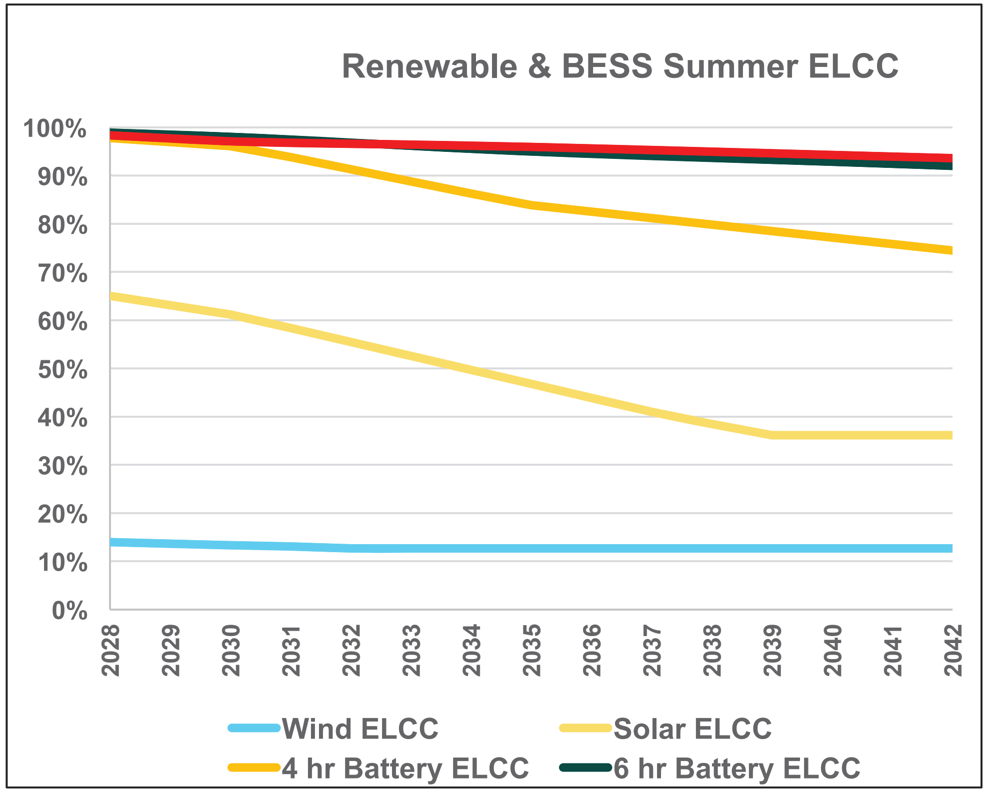
-Joshua Smith, Sierra Club

QUESTIONS ?

Solar + Storage

Assuming 100 MW solar facility with 50 MW 4 hours BESS (POI Limit 100 MW)





Welcome!

Stakeholder Engagement Workshop
Meeting #5

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

Aug. 1-2, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

GRIDWORKS

Note: this meeting is being recorded. A link to the recording will be included in the meeting summary and posted on the GRIDWORKS website.

The Agenda for this Meeting

	Tuesday, Aug. 1
1:00 PM	Welcome, Meeting Purpose and Outcomes, Announcements
1:15 PM	Statement of Need Input and Priority Needs Worksheet
2:00 PM	SPS Presentation on Draft Model Results to Date and Next Steps
5:00 PM	Recess Until Wednesday Please complete priority needs worksheet by 8 AM
	Wednesday, Aug. 2
9:00 AM	Observations, Insights, and Follow-up Questions on Modeling Results
10:15 AM	Stakeholder Requested Modeling Runs Update
10:45 AM	Break
11:00 AM	Priority Needs Results Discussion
11:30 AM	Summary of Next Steps, Meeting Survey
12:00 NOON	Adjourn

Purpose and Outcomes for the Workshop

Purpose:

- Prepare for September input to the Action Plan

Key outcomes:

- Measure of consensus regarding priority needs
- Understanding of modeling inputs/assumptions
- Insights from modeling results completed to date
- Awareness of stakeholder requested modeling runs

Meeting Schedule Change Announcements

- **August 29 meeting time change. New time is 1:00 PM – 5:00 PM MDT** (previously scheduled from 2 -3:30 PM)
- **September 13 is a new meeting. Time is 1:00 PM – 3:00 PM MDT**
- September 21 meeting is unchanged: 1:00 PM – 5:00 PM MDT
- October 26 meeting is unchanged: 2:00 PM – 3:30 PM MDT

We are Now Entering the Action Plan Phase of the Process

May - June	July – August	September - October
• May 16: 2 – 4:30 PM • June 1: 2 - 4 PM • June 13 & 14: 12–5 & 9–3 workshop in Roswell	• July 6: 1 – 5 PM • **August 1 & 2: 1-5 & 9-12 NOON** • **August 29: 1 – 5 PM**	• **Sept.13: 1 – 3 PM** • **Sept. 21: 1 – 5 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans, Check alignment with Statement of Need

3: IRP Reviews and Process Feedback

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Statement of Need and Priority Needs Input

- SoN document includes comments received during July 6 meeting.
- Will be reviewed again when modeling is complete.

- Priority needs input - another source of input for consideration.
- List of needs comes from SoN, IRP Rule Appendix A, and discussion by stakeholders in prior meetings.
- We request that you complete the worksheet by 8AM Wed.
- https://forms.gle/3Jiqj5gjqWNmguZm7

Priority Needs/Factors

Please complete the form before 8 AM on Wednesday:

https://forms.gle/3Jiqj5gjqWNmguZm7

Choose *only 5* factors that are your priority needs.

- [ ] Affordability for all Customers (per life cycle cost of portfolio)
- [ ] Reliability and Resiliency
- [ ] Accelerate State Carbon Reduction Timeframe
- [ ] Exceeding State Renewable Energy Requirements
- [ ] Maximizing Energy Efficiency, Demand Response and Demand-side Management Technology
- [ ] Fuel Diversity and Fuel Security
- [ ] Incorporation of New Technologies
- [ ] Orderly Transition for Workforce, Communities, and Customers
- [ ] Environmental Attributes (e.g., water use, air quality)
- [ ] Investments in Local Communities
- [ ] Other, expand using field below

Model Results to Date and Assumptions Update

- SPS presentation, 55 minutes
- Break
- Questions submitted via chat and moderated by Gridworks
- Responses, 25 minutes

- SPS presentation, 55 minutes
- Break (when needed)
- Questions submitted via chat and moderated by Gridworks
- Responses, 25 minutes

Southwestern Public Service

Updates on Model Assumptions and Model Results to Date

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Welcome Back to Day 2

	Wednesday, Aug. 2
9:00 AM	Observations, Insights, and Follow-up Questions on Modeling Results
10:15 AM	Stakeholder Requested Modeling Runs Update
10:45 AM	Break
11:00 AM	Priority Needs Results Discussion
11:30 AM	Summary of Next Steps, Meeting Survey
12:00 NOON	Adjourn

Modeling Observations, Insights, and Questions

- Follow up questions on 8/1 SPS presentations
- Discussion questions:
  - What excites you about results?
  - What requires further consideration in remaining steps of process?

Southwestern Public Service

Overview of Stakeholder Requested Model Runs

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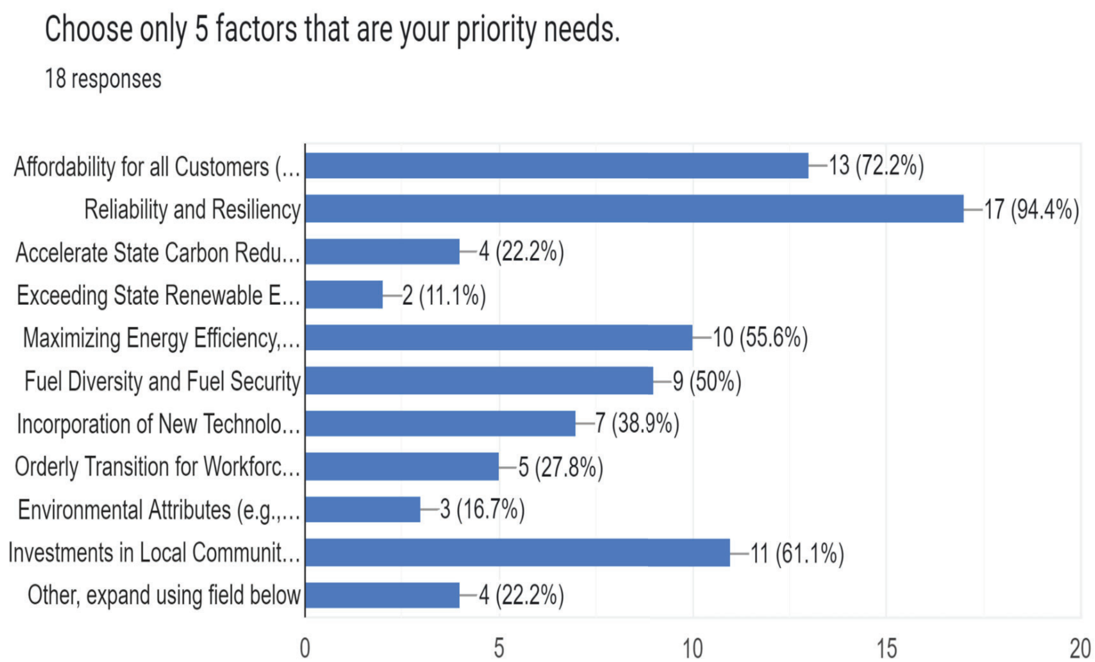
Results of Priority Needs



OTHER

- Ability to grow load-following supply as demand increases due to electrification projects
- Capacity and Resiliency: Ability to handle EVs, Heat Pump HVAC/H2O etc AND Distribution Level Resiliency with no single points of failure or dependence on the National Grid
- It may be interesting to see how this group responds to these priority needs, but the PRC Staff looks at the requirements of the IRP App A.
- Support the development of the world and human growth with accessible energy through fossil fuel availability and cleaner energy than what is being used in developing nations.

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Next Steps in the Process

- Aug. 29: **1 PM – 5 PM**, Meeting #6 via Zoom. Focus is understanding model results.
- **Sept 13: 1 PM – 3 PM, Meeting #6.5 via Zoom.** Focus is initial input into the Action Plan.
- Sept. 21: 1 PM – 5 PM, Meeting #7 via Zoom. Focus is final input into the Action Plan.
- Oct. 16 – IRP is filed.
- Oct. 26: 2 PM – 3:30 PM, Meeting #8. Focus is feedback on stakeholder process.

Your Feedback is Critical

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

…please:

Scan the QR Code to the right

OR

Visit this link: bit.ly/SPS-IRP-Feedback

GRIDWORKS

Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

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Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

or

https://gridworks.org/initiatives/new-mexico-energy-planning/

TO: Ben Elsey, SPS
CC: Jay Griffin, Gridworks
FROM: Cynthia Mitchell, PRC Staff Consultant
RE: Follow-up clarification questions SPS presentations
DATE: July 10, 2023

June 14, 2023 Slide Deck System Overview Recap

1. "Existing SPS Generating Resources": shows 522 MW wind 20-year PPAs expiring 2024 – 2027, and an additional 889 MW of solar and wind 20-year PPAs expiring 2031 – 2041.

   Q. What is the likelihood of all or a portion of these PPAs being renewed? To clarify (again), these projects are required to go through SPS' RFP process?

   A. SPS anticipates existing purchased power agreements will bid into future competitive solicitations (RFPs). It is impossible to know whether existing purchased power agreements will be successful in a future competitive solicitation as it would be highly dependent on many factors, including, but not limited to, the cost of the project and the cost of possible alternative projects (i.e., other bids).

June 14, 2023 Slide Deck Action Plan Update

2. "2022 RFP Bid Selection": SPS is continuing to explore battery energy storage proposals.

   Q. Are any of the ES proposals co-located?

   A. Yes. All battery energy storage proposals received in the 2022 request for proposals were 'co-located'. Stated differently, each battery was either paired with a new solar generator or located at an existing wind facility.

3. "Load vs Current and Recommended Future Resources Balance"
   Q. It appears with the addition of the 2022 RFP selected resources, SPS is not capacity short until 2028 (minimally), and 2029 (significantly).

   A. The resources selected in the 2022 RFP will resolve SPS's 527 MW capacity need through 2027. However, I respectively disagree that this will result in SPS's capacity need in 2028 being 'minimal'. As shown on slide 3 of the referenced presentation, SPS capacity need increases by 614 MW from 2027 – 2028. In my opinion, this is a significant increased capacity need. I completely agree with the characteristic that SPS's capacity need in 2029 is significant.

July 6, 2023 Slide Deck Modeling Results Demonstration Purposes

4. "For Demonstrative Purposes": updating several inputs to EnCompass including NREL.

   Q. When complete, could SPS provide us with a list of the =/- cost changes?

   A. SPS is currently conducting this comparison and will provide this information as it becomes available.

Note: The 2022 NREL data was published before passage of the Inflation Reduction Act. Therefore, any changes will be largely impacted by federal tax reform as opposed to changes to the underlying assumptions.

5. "Selecting the MCEP": EnCompass with solve for the MCEP that meets or exceeds SPS' PRM….new generation may be acquired years in advance of a retiring generator."

   Q. Will SPS please show us where in the scenarios this occurs?

   A. SPS will provide this information as the modeling is finalized.

6. "SPS' Capacity Need – Planning Forecast", Level 0 slide 12 and Level 1 slide 15.

   Q. Both slides are Effective Capacity? In either the Level 0 or 1 scenarios, does EnCompass add new generation in excess of SPS'PRM?

   A. Both are accredited capacity. Recently, most of SPS's EnCompass analyses have added more new generation than needed to meet the Summer PRM. However, EnCompass typically does not add new generation that exceeds the Winter PRM – (at least in the first 10 years). This is demonstrated on Slide 18 of the referenced presentation. In scenarios in which only relatively short-duration batteries are selected (e.g. 4 hours batteries), when conducting further reliability review of the portfolio, SPS may need to add additional batteries to solve expected emergency energy ("EUE"). Solving for EUE will likely result in capacity above the PRM.

   *EUE occurs when there is not enough Generation + Market Purchases + DR to meet the expected load in any given hour.

   SPS can provide this information for actual scenarios as the modeling is finalized.

7. "Expansion Plan" slide 17: Level 1 shows an additional 7,275 MW of storage than Level 0.

   Q. Is it reasonable to interpret the results as Storage (and some Solar) being the primary alternative to firm peaking CTs?

   A. Generally speaking, yes, that is a fair interpretation. I would add, as more solar generation is added to the system, firm and dispatchable resources, such a CTs and Storage are increasingly used to meet the system peak net of renewables.

Additional questions from 7/11

1. For the Base Case, Level 0, could SPS please provide a loads and resources table for the forecast period, listing all existing and new resources? For all resources, please provide MW capacity by nameplate and effective capacity, and output by GWh.

A. SPS will provide this information as the modeling is finalized.

2. 1050 MW of new firm load obligation is projected in the 2023 load forecast relative to the 2021 IRP. How much of the new load is attributable to the O&G sector and High Tech sector?

A. SPS is due to release a new load forecast before our next stakeholder meeting. In the interest of providing the 'latest' information, SPS will provide a response when the new load forecast is released.

Gridworks-provided Chat Log from Meeting

12:14:42 From Gridworks to Everyone:
https://forms.gle/zAxG6F1SeUfweyKc6
12:19:36 From Cynthia Mitchell to Everyone:
Are you going to develop a “donut” weighting scheme similar to PNM?
12:21:14 From Linda Hudgins to Everyone:
Brooke is ready to respond to a question.
12:21:40 From Linda Hudgins to Everyone:
We are trying to unmute
12:23:44 From Gary Oppedahl to Everyone:
"Increased Capacity" doesn't capture where or how
12:23:53 From Gary Oppedahl to Everyone:
respectfully
12:25:38 From Jim DesJardins to Everyone:
Agreed with Gary. Reliability & resiliency could also be about the types of resources selected and how they are integrated into the grid.
12:29:32 From Hall, James A to Everyone:
anyone have an audio issue?
12:29:53 From Ben Elsey to Everyone:
Please give me 1 minute to reconnect
12:29:55 From Gridworks to Ben Elsey(Direct Message):
Please un mute
12:30:21 From Margie Tatro (Gridworks) to Everyone:
please stand by as we reconnect Ben
12:31:42 From Athena Christodoulou to Everyone:
cant see presentation
12:34:45 From Cynthia Mitchell to Everyone:
Slide 5: does your high forecast capture/include the O&G Permian electrification forecast per James Hall model request?
12:37:01 From Margie Tatro (Gridworks) to Everyone:
please clarify the actual current (2023) summer demand peak, for slide 5. This helps stakeholders ground this forecast.
12:37:25 From Cynthia Mitchell to Everyone:
Slide 6: is your forecast annual load duration curve similar to your 2022 curve presented 5-16, slide 20 showing last 500 MW of demand occurring in the last 10% of hours
12:38:55 From Jeffry Pollock to Everyone:
Is Slide 7 sales at the meter or at the generator?
12:40:15 From Cynthia Mitchell to Everyone:
Ppt 7: Annual Energy Forecast: does not include energy required to charge BES. So don’t need additional capacity to charge batteries, using what is otherwise a surplus solar and wind energy?
12:45:23 From David Millar to Everyone:
what are the changes from 2022 ATB to 2023 ATB?
12:46:31 From Jeffry Pollock to Everyone:
Levelized Cost is not the same as the cost that would be included in rates. When a wind/solar resource is modeled, will it be modeled at the levelized cost or the regulated (rate base) cost?
12:47:05 From Cynthia Mitchell to Everyone:
Ppt 11: wind and solar LCOE: w T-upgrades, 2 x + cost; You just said you are using the $400/kw T-cost? More benefits to T-upgrades beyond the specific projects?
12:48:34 From Hall, James A to Everyone:
Q for the Q session: If SPS feel these LCOE costs may be low and revised during the RFP, this does not change the initial model output

seriatim even if this would be different with real world numbers. Is the 2024 RFP therefore technology agnostic?

12:48:56 From Cynthia Mitchell to Everyone:
Slide 12: any projections of the long duration battery costs coming down? Did you say this was also NREL data?

12:51:20 From Cynthia Mitchell to Everyone:
Ppt 13: ELCCs. Would W&S values improve w/ collating storage?

12:52:27 From Athena Christodoulou to Everyone:
I agree Cynthia, Wouldn't solar + battery level out the ELCC values

12:53:04 From Linda Hudgins to Everyone:
No questions in Hobbs right now

12:53:15 From Margie Tatro (Gridworks) to Everyone:
thank you

12:57:39 From Athena Christodoulou to Everyone:
Was there any carbon pricing included in the cost of natural gas price? slide 16

12:59:06 From Jeffry Pollock to Everyone:
What is driving the projected reduction on-peak market prices after 2026? Why are the projected off-peak market prices not changing at the same rate as on-peak prices?

12:59:10 From Jim DesJardins to Everyone:
Need to break to another meeting but plan to return. Thank you.

13:15:25 From Athena Christodoulou to Everyone:
Is SPS able to take advantage of the tax credits? Does it get a guaranteed rate of return for capital assets?

13:19:48 From Jim Bordegaray, NMSLO to Everyone:
Does your transmission upgrade cost include acquisition of fee or Rights of way?

13:21:57 From Erik Aaboe - NM RETA to Everyone:
Slide 11 - SPP is about to let a contract for TX upgrades (Crossroads-Hobbs-RoadRunner) that will make more (curtail less) renewables available in SE NM. Is that sort of upgrade not included in this phase of modeling?

13:31:53 From Gridworks to Jay Griffin(Direct Message):
this question is from Mark Bibeault @ Los Alamos - he is not on Zoom is on phone " What is the assumption for battery life?"

13:46:19 From Erik Aaboe - NM RETA to Everyone:
It appears that the renewable ELCCs that you present are significantly lower than those presented in SPP's November 20222 report (effective 6/1/23)
https://www.spp.org/documents/68289/2022%20spp%20elcc%20study%20wind%20and%20solar%20report.pdf

Commented [LLH1]: Ben corrected his understanding. See a few comments down.

13:54:49 From Gridworks to Jay Griffin(Direct Message):
More from Mark Bibeault @ Los Alamos "Then the cost of replacement needs to be accounted for each 15 years? And a significant amount of batteries will need to be replaced before 2045?

13:58:56 From Jay Griffin to Gridworks(Direct Message):
Ok. Will queue that question up on their modeling results with the build out of storage.

14:05:31 From Erik Aaboe - NM RETA to Everyone:
Understood. Thanks for correcting me, Ben

14:07:02 From Athena Christodoulou to Everyone:
I think it would be helpful to include wind + storage and solar +storage graphs to inform the public.

14:17:58 From Gridworks to Margie Tatro (Gridworks)(Direct Message):
are you seeing a notice on your screen when someone new joins zoom? Looks like it pops up on Ben's screen and mine - I am letting them into Zoom but hope it is not disruptive to him
14:19:04 From Margie Tatro (Gridworks) to Gridworks(Direct Message):
I do see those and have been also admitting them. He seems to be doing fine.
14:24:10 From Athena Christodoulou to Everyone:
Would certainly like a to see much more effort to add storage rather than gas peaking. Especially since upstream methane emissions are not in the carbon accounting.
14:33:13 From Athena Christodoulou to Everyone:
If solar better fits the peak demand and has a higher capacity than wind, shouldn't there be more solar assumed to be added?
14:35:48 From Athena Christodoulou to Everyone:
Might want to look at thie slides from recent DOE LDES webinar. https://docs.google.com/document/d/1HXilcIwhIFmwCt8NuMdDLDHZ2nzcz9jIdZD_qogRuv8/edit?usp=sharing
14:40:26 From David Millar to Everyone:
Other than the baseline the other runs have a zero carbon by 2045 constraint, correct?
14:42:03 From Cynthia Mitchell to Everyone:
Question on long duration storage, could you discuss the Xcel MN contact for 10-MW / 1,000 MWH LDES project in-service date late 2025. I assume this is cost effective
14:42:30 From Cynthia Mitchell to Everyone:
A FormEnergy project
14:43:58 From Margie Tatro (Gridworks) to Everyone:
I am having trouble tracking the takeaways for 2030 in terms of the needed resources, for the NM (not multi-jurisdictional) cases. Can we review these for folks?
14:54:13 From David Millar to Everyone:
sorry - did I miss my turn?
14:56:19 From Margie Tatro (Gridworks) to Gridworks(Direct Message):
The slide that ben just fixed real time on the screen has not been corrected on the version we have on our website....Could you check with Linda to be sure we have the latest to load tonight?
14:57:35 From Gridworks to Margie Tatro (Gridworks)(Direct Message):
Will do
14:57:42 From Cynthia Mitchell to Everyone:
Short Q on slide 41
14:58:35 From Gridworks to Linda Hudgins(Direct Message):
The slide that ben just fixed real time on the screen has not been corrected on the version we have on our website....Could you send me the latest version so I can post tonight?
15:02:01 From Linda Hudgins to Gridworks(Direct Message):
Replying to "The slide that ben j..."

Yes. I will make sure we get it.
15:02:43 From Gridworks to Linda Hudgins(Direct Message):
Replying to "The slide that ben j..."

Thank you - and can you send me a list of attendees in your room today?

15:04:23 From Linda Hudgins to Gridworks(Direct Message):
Replying to "The slide that ben j..."

I sent it just a minute ago.
15:04:54 From Gridworks to Linda Hudgins(Direct Message):
Replying to "The slide that ben j..."

got it! Thanks much
15:05:03 From Linda Hudgins to Gridworks(Direct Message):
Replying to "The slide that ben j..."

Absolutely!
15:06:28 From Gridworks to Jay Griffin(Direct Message):
From Mark Bibeault again " Another follow on question please. Understand that the batteries pay as they go over their lifetime. 8 MW or so of batteries is a lot of battery material that all other utilities will also want to get their hands on. It does not appear any analysis has been done on availably of battery material, when it will be needed and how that battery material will be disposed of. Have heard several statements that "we are hoping for technology improvements……". Are we ultimately basing our analysis on hope?"
15:07:58 From Jay Griffin to Gridworks(Direct Message):
Can we ask him to come online and ask his question?
15:09:22 From David Millar to Everyone:
My apologies since i'm sure you've already answered this question...in the 2 policy cases for NM, were the turbines allowed as candidate resources? If so, why are they selected in the baseline but not in the NM cases? This ties in with my question on the carbon constraint.
15:10:05 From Gridworks to Jay Griffin(Direct Message):
I just asked him to unmute his phone
15:10:44 From Jay Griffin to Gridworks(Direct Message):
Will check in after Ben finishes this response
15:11:27 From Jay Griffin to Gridworks(Direct Message):
Do you know which # he is?
15:14:14 From Gridworks to Jay Griffin(Direct Message):
5056651204
15:14:43 From Margie Tatro (Gridworks) to Everyone:
If there is time, slide 16 (market energy price forecast), what happens in 2025 that drives the inflection point in the three cases?
15:23:51 From Gridworks to Margie Tatro (Gridworks)(Direct Message):
Will my next slide be the Feedback slide?
15:26:45 From Gridworks to Everyone:
https://forms.gle/zAxG6F1SeUfweyKc6
15:28:11 From Cisco Brink (Roswell-Chaves County EDC) to Everyone:
where can we get digital copies of today's briefing products?
15:28:37 From Athena Christodoulou to Everyone:
Thank you Jay, Ben and Gridworks!
15:28:38 From Jim DesJardins to Everyone:
Thank you.
15:28:40 From David Millar to Everyone:
No need to discuss, but on the next set of results can you report NPVs of the portfolios?
15:29:17 From Gridworks to Everyone:
https://gridworks.org/initiatives/xcel-sps/

08:00:19 From Margie Tatro (Gridworks) to Everyone:
Welcome to part 2 of our Aug. 1-2 SPS IRP stakeholder conversation.
08:00:53 From Gridworks to Everyone:
https://gridworks.org/initiatives/xcel-sps/
08:02:38 From Linda Hudgins to Everyone:
A comment from the meeting room in Hobbs. From Jennifer Grassham. I appreciate the opportunity through the survey to provide feedback and guidance for what factors are most important to this process; however, I think we may have missed the mark a bit on this first survey. The survey is a great tool for allowing broad stakeholder participation in this process. I would like to suggest a secondary round of surveying where the top 5-6 responses (including the "other") from the first survey are fully defined, and the survey respondents are then allowed to rank order the factors. There was a huge difference between my first and last selections, and I didn't feel like I had the opportunity to have my voice heard as to what was truly important.

Kindest Regards,

Jennifer Grassham
08:05:39 From Cynthia Mitchell to Everyone:
Clarification: Ben, yesterday did you say that for the NM jurisdiction SPS would not acquire new gas gen?
08:06:21 From Jeffry Pollock to Everyone:
Follow-up for SPS: Regarding the use of LCOE in the modeling of renewable and BESS resources, will SPS also use LCOE to model the capital costs of the dispatchable resources?
08:16:04 From Jay Griffin to Everyone:
Please type any further questions
08:18:42 From Jim DesJardins to Everyone:
Thank you Ben & team.
08:48:08 From Cynthia Mitchell to Everyone:
Is the $400/kW annual or total?
08:57:11 From Edward Steele to Everyone:
I need to drop off - Thank You
08:57:25 From Cynthia Mitchell to Everyone:
I figured out what the $400/kW is; never mind my earlier Q.
09:16:32 From Cynthia Mitchell to Everyone:
Ben, please explain more about the BTM contributions; how sorting - figuring that out
09:21:42 From Cynthia Mitchell to Everyone:
James' request for early compliance run is b/c O&G industry NM has compliance targets, right?
09:24:13 From Jay Griffin to Everyone:
Cynthia - we can take these questions after reviewing the scenario request. Thank you!
09:27:07 From Cynthia Mitchell to Everyone:
You mean end of August meeting?
09:37:32 From Margie Tatro (Gridworks) to Everyone:
Cynthia - please put into the chat the suggestion you are making regarding a study concept for consideration as an action plan idea. I believe you are centering the idea on how much BTM resource might be added by the large C&I customers in the high electrification load scenario.

09:47:45 From Cynthia Mitchell to Everyone:
Slide 11: what is “flow gate constraints”? Thank you!
09:54:29 From Michael Kenney, SWEEP to Everyone:
I'll have to drop during the break. Thank you for the great information today.
09:56:03 From Margie Tatro (Gridworks) to Everyone:
on break until 11:05 local time
10:03:21 From Margie Tatro (Gridworks) to Everyone:
For our discussion on needs - Additional input regarding stakeholder needs is contained in the SoN input document, "Statement of Need Elements 7/24/23" posted on https://gridworks.org/initiatives/xcel-sps/ Both the document and the survey results will be reviewed as part of our action plan discussions in Sept.
10:20:27 From Gridworks to Everyone:
http://bit.ly/SPS-IRP-Feedback
10:23:13 From Gridworks to Linda Hudgins(Direct Message):
Please send Hobbs attendee list - thanks!

Link to recorded meetings:

SPS IRP Workshop - Meeting #5 - Day 1 8/1/23 - YouTube

SPS IRP Workshop - Meeting #5 - Day 2 - 8/2/23 - YouTube

August 29, 2023 Stakeholder Meeting

GRIDWORKS

Meeting #6, August 29, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

Approximately 37 stakeholder representatives from 23 different organizations plus a team of Xcel Energy/SPS professionals attended a meeting focused on developing input to Xcel Energy/SPS's Integrated Resource Plan. The purpose of the meeting was to prepare stakeholders as they input suggestions for the Action Plan.

Key outcomes of the meeting are:
- Insights from modeling results including results of stakeholder requested modeling runs
- Awareness of SPS's conclusions and selection of recommended portfolio
- Preview of process for collecting stakeholder input to the Action Plan

A recording of the meeting is available at: https://youtu.be/e1230RObDNI

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
- **Slide Deck – Gridworks SPS IRP Stakeholder Meeting #6 – 8/29/23**
- **Slide Deck – Xcel/SPS IRP Modeling – SPS Scenarios – 8/29/23**
- **Slide Deck – Xcel/SPS IRP Modeling Sensitivities – 8/29/23**
- **Xcel Energy – Action Plan Introduction – 8/29/23**
- **Statement of Need Elements 7/24/23**

Schedule Revisions

Revisions to the schedule for the remaining stakeholder meetings were announced:
- **September 6 is a Modeling Results Q&A Session. Time is 3:00 – 4:00 PM MDT. Questions submitted via chat during this meeting as well as those submitted to jgriffin@gridworks.org by 5 PM MDT on September 1 will form the content of this session. A recording of the session will be posted on the Gridworks.org website.**
- **September 13 is a new meeting. Time is 1:00 PM – 3:00 PM MDT**
- **September 21 meeting has been moved to Oct. 3. Time 1:30 PM – 3:30 PM MDT**
- October 26 meeting is unchanged: 2:00 PM – 3:30 PM MDT

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Modeling Results

The SPS team presented updates on modeling results and associated insights. Of key importance is the range of new capacities for dispatchable and variable resources needed over the planning period. SPS resource modeling included three different demand forecasts, two different Planning Reserve Margin requirements, and four scenarios with varying supply-side options. The analysis identified potential needs for 1043 – 4290 MW of new dispatchable (including storage) resources by 2030 and 4281 – 6631 MW of variable (solar and wind) resources by 2030. Stakeholders were reminded that SPS's current system has 7500 MW of installed capacity with an accredited capacity of 5400 MW and a system peak of 4200 MW. The change in net present value revenue requirements for the options considered were also presented.

The SPS team evaluated two different levels of costs for transmission investments and performed sensitivity analyses around gas prices and energy markets.

Stakeholder Requested Modeling Runs

Six stakeholder-requested modeling runs were completed by SPS. These are listed below:
- Early compliance with renewable energy and carbon free targets including a load forecast case of high electrification in the commercial and industrial sectors
- Aggregated virtual power plant (distributed energy resources)
- Dynamic load shifting for residential and small commercial customers scenario
- Demand response scenario
- Increased hydrogen blending scenario
- Inclusion of reciprocating engines as a resource option, including the sub-hourly credit options

The SPS team also incorporated the stakeholder request focused on EPA 111 compliance into the relevant SPS modeling runs.

Action Plan Context and Process for Submitting Action Plan Suggestions

SPS provided background information and requirements of the action plan as well as example actions. An update on actions resulting from the 2021 IRP was also provided. In addition to the capacity needs described by SPS, stakeholders were reminded of the Statement of Need (SoN) Elements document that was developed by the SoN Interim Committee. This document is posted on the Gridworks.org website under the Aug. 29 meeting materials.

Stakeholders are invited to submit action plan suggestions **by noon on Sept. 12**, per the following process:
- Submit suggestions via https://forms.gle/umvDwaGcYTbDdjEM7
- For those lacking access to google forms, send email with "SPS ACTION PLAN SUGGESTION" in the subject line to info@gridworks.org
- Submit form(s) - name, organization and email required

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- Discussion of ideas will be the foundation for the Sept 13 meeting

NEXT MEETINGS:
A "Modeling Results Q&A Session" is scheduled for Sept. 6. Meeting time is 3-4 PM. Questions will be taken from the Aug. 29 meeting chat and questions emailed to jgriffin@gridworks.org by 5 PM on Sept. The meeting will be recorded and will take place on ZOOM: us02web.zoom.us/j/8569536132
Meeting ID: 856 953 6132

The next meeting of the group, Meeting #6.5, is scheduled for Sept. 13. Meeting time is 1 PM – 5 PM. The focus will be discussion of action plan suggestions. The meeting will take place on ZOOM: https://us02web.zoom.us/j/8569536132
Meeting ID: 856 953 6132

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.

Please Access and Complete the Survey Now

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

…by either:

Scanning the QR Code to the right

OR

Visiting this link: bit.ly/SPS-IRP-Feedback

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SOUTHWESTERN PUBLIC SERVICE COMPANY
2023 New Mexico integrated resource plan
August 29, 2023
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IRP Modeling - SPS Scenarios

Key Modeling Takeaways
SPS Scenarios

STRENGTHS

- A continued and substantial need for new, low-cost, renewable generation through the end of the decade and beyond
- The build-out of new renewable generation requires additional dispatchable capacity that conforms with New Mexico's Energy Transition Act

OPPORTUNITIES

- There's an increasing need for alternative, carbon-free, dispatchable, and economic technologies over the 20-year planning period
- SPS's 2023 IRP analysis evaluated long-duration storage and hydrogen-fired combustion turbines technologies, however, alternative, carbon-free, and dispatchable technologies are/will become available and are encouraged to bid into RFP

WEAKNESSES

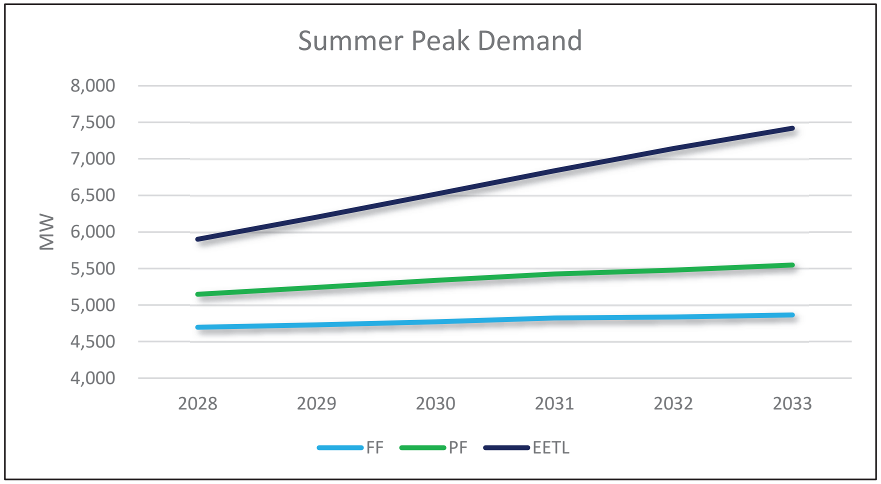
- Currently, lithium-ion battery energy storage is the predominate, commercially-available carbon-free, dispatchable technology – However, its duration is relatively limited (i.e., 4 – 8 hours)

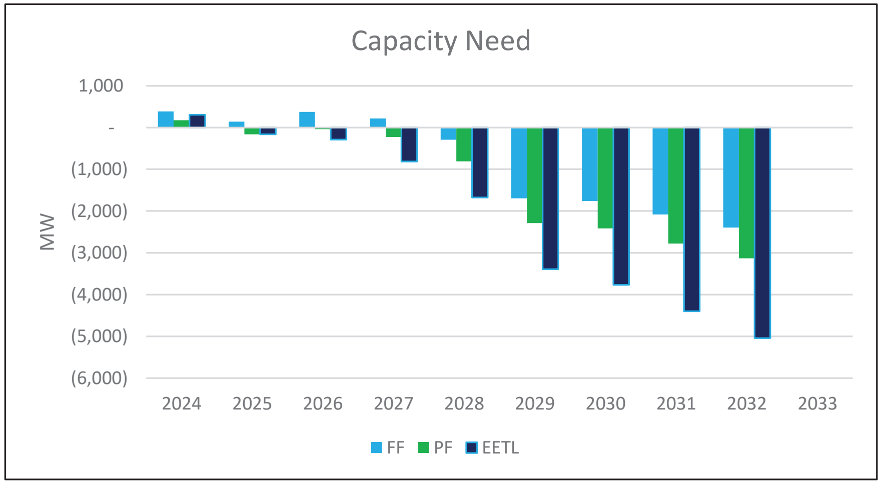
THREATS

- Relying solely on wind, solar, and short-duration battery energy storage is not economical and presents reliability challenges

Capacity Need Summary
Load Growth, Retirements, & Resource Adequacy Requirements

- SPS is forecasting a Summer peak demand of between 4,771MW and 6,517MW by 2030
- Assuming the existing Southwest Power Pool PRM of 15%, SPS's capacity need is between 1,760MW and 3,768MW in 2030
- Capacity need increases to 1,903MW and 3,963MW under a hypothetical 18% summer PRM requirement
- Includes retirement of 1,825 MW of thermal retirements by 2030





IRP Modeling Results
New Resources Added: 2028 - 2030

1. **All 3,500MW of available wind generation selected in 2028 – 2030 in most scenarios analyzed**

   SPS included an annual cap of 1,000MW of new wind generation per year, plus an additional 500MW of surplus wind generation

   *Wind selection is biased by generic pricing**

2. **Between 1,021MW and of 3,131MW of new solar generation added**

   SPS allowed 1,021 MW of new solar to replace retiring thermal units without incurring transmission network upgrade costs (i.e., replacing retiring existing generation with new solar and utilizing existing interconnection facilities)

3. **Added the following range of dispatchable resources**

   - *Planning Forecast:* *1,637MW – 2,530MW (15% PRM, MJB –> 18%, Existing Technologies)*
   - *Electrification Forecast:* *3,260MW – 4,290MW (15%, Long-Duration Storage –> 18%, Existing Technologies)*

**Important Note: SPS anticipates actual pricing and availability of resources bid into a competitive RFP will result in a more balanced portfolio of resources*

IRP Modeling Results

New Resources Added: 2028 - 2030

	PVRR DELTA			Resources Added 2028-2030 (Nameplate Capacity) Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Financial Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	933	-	130	**1,063**	3,390	1,021	**4,411**
Existing Technologies	$205	$1,829	$2,556	-	-	1,380	**1,380**	3,500	1,021	**4,521**
Long Duration Storage	$186	$1,023	$1,136	-	-	1,280	**1,280**	3,500	1,091	**4,591**
Hydrogen Conversion	$130	$1,292	$1,763	933	-	110	**1,043**	3,260	1,021	**4,281**
18%/20% PRM										
Existing Technologies	$304	$2,169	$2,927	-	-	1,670	**1,670**	3,500	1,021	**4,521**
Long Duration Storage	$279	$1,332	$1,472	-	-	1,540	**1,540**	3,500	1,091	**4,591**
Hydrogen Conversion	$188	$1,571	$2,097	933	-	410	**1,343**	3,500	1,021	**4,521**
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	$381	$2,753	$4,149	-	-	2,220	**2,220**	3,500	1,021	**4,521**
Long Duration Storage	$320	$1,348	$1,629	-	-	1,980	**1,980**	3,500	1,831	**5,331**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	170	**1,940**	3,500	1,071	**4,571**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	$433	$1,709	$2,000	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	360	**2,130**	3,500	1,021	**4,521**
Electrification & Emerging Technologies										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	933	2,511	10	**3,454**	3,500	1,211	**4,711**
Existing Technologies	$554	$4,208	$5,066	-	-	3,810	**3,810**	3,500	2,271	**5,771**
Long Duration Storage	$471	$2,125	$2,242	-	-	3,260	**3,260**	3,500	3,011	**6,511**
Hydrogen Conversion	$289	$2,657	$3,185	933	837	1,570	**3,340**	3,500	1,341	**4,841**
18%/20% PRM										
Existing Technologies	$707	$4,849	$5,813	-	-	4,290	**4,290**	3,500	2,371	**5,871**
Long Duration Storage	$674	$2,695	$2,863	-	-	3,580	**3,580**	3,500	3,131	**6,631**
Hydrogen Conversion	$427	$3,228	$3,838	933	837	1,990	**3,760**	3,500	1,021	**4,521**

**Multi-jurisdictional baseline provides information for SPS's other jurisdictions and does not incorporate New Mexico's Energy Transition Act. ET, LDS, HC as shown in this table are all NM ETA compliant.*

IRP Modeling Results

New Resources Added: 2028 - 2040

				Resources Added 2028-2040 (Nameplate Capacity)						
	PVRR DELTA			Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Financial Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	3,733	-	130	**3,863**	4,330	2,429	**6,759**
Existing Technologies	$205	$1,829	$2,556	-	-	6,290	**6,290**	6,780	2,429	**9,209**
Long Duration Storage	$186	$1,023	$1,136	-	-	3,560	**3,560**	7,460	2,499	**9,959**
Hydrogen Conversion	$130	$1,292	$1,763	933	837	3,050	**4,820**	6,120	2,429	**8,549**
18%/20% PRM										
Existing Technologies	$304	$2,169	$2,927	-	-	6,730	**6,730**	6,850	2,429	**9,279**
Long Duration Storage	$279	$1,332	$1,472	-	-	3,870	**3,870**	7,390	2,499	**9,889**
Hydrogen Conversion	$188	$1,571	$2,097	933	837	3,520	**5,290**	6,220	2,429	**8,649**
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	3,966	837	200	**5,003**	5,450	3,589	**9,039**
Existing Technologies	$381	$2,753	$4,149	-	-	8,430	**8,430**	8,600	2,429	**11,029**
Long Duration Storage	$320	$1,348	$1,629	-	-	4,920	**4,920**	9,160	3,239	**12,399**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	5,230	**7,000**	8,130	2,479	**10,609**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	8,970	**8,970**	8,660	2,429	**11,089**
Long Duration Storage	$433	$1,709	$2,000	-	-	5,350	**5,350**	9,130	3,179	**12,309**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	5,810	**7,580**	8,170	2,429	**10,599**
Electrification & Emerging Technologies										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	3,500	2,511	570	**6,580**	5,700	3,529	**9,229**
Existing Technologies	$554	$4,208	$5,066	-	-	11,200	**11,200**	8,730	3,340	**12,070**
Long Duration Storage	$471	$2,125	$2,242	-	-	6,750	**6,750**	9,080	4,419	**13,499**
Hydrogen Conversion	$289	$2,657	$3,185	933	837	8,130	**9,900**	8,740	2,410	**11,150**
18%/20% PRM										
Existing Technologies	$707	$4,849	$5,813	-	-	11,870	**11,870**	8,760	3,440	**12,200**
Long Duration Storage	$674	$2,695	$2,863	-	-	7,120	**7,120**	9,070	4,539	**13,609**
Hydrogen Conversion	$427	$3,228	$3,838	933	837	8,820	**10,590**	8,980	2,090	**11,070**

**Multi-jurisdictional baseline provides information for SPS's other jurisdictions and does not incorporate New Mexico's Energy Transition Act. ET, LDS, HC as shown in this table are all NM ETA compliant.*

IRP Modeling Results
Present Value Revenue Requirements

PVRR Production Cost	Delta ($M)	NPV ($M) 2024-2029	Delta ($M)	NPV ($M) 2024-2033	Delta ($M)	NPV ($M) 2024-2043
PL-15RA-MJB	$0	**$6,648**	$0	**$ 14,034**	$0	**$ 15,737**
PL-15RA-ET	$381	**$7,029**	$2,753	**$ 16,787**	$4,149	**$ 19,887**
PL-15RA-LDS	$320	**$6,968**	$1,348	**$ 15,382**	$1,629	**$ 17,367**
PL-15RA-HC	$240	**$6,888**	$1,630	**$ 15,665**	$2,255	**$ 17,992**
PL-18RA-ET	$479	**$7,127**	$3,156	**$ 17,191**	$4,577	**$ 20,315**
PL-18RA-LDS	$433	**$7,081**	$1,709	**$ 15,743**	$2,000	**$ 17,738**
PL-18RA-HC	$316	**$6,964**	$1,982	**$ 16,017**	$2,667	**$ 18,404**
FF-15RA-MJB	$0	**$5,843**	$0	**$ 11,733**	$0	**$ 13,039**
FF-15RA-ET	$205	**$6,048**	$1,829	**$ 13,562**	$2,556	**$ 15,595**
FF-15RA-LDS	$186	**$6,029**	$1,023	**$ 12,755**	$1,136	**$ 14,175**
FF-15RA-HC	$130	**$5,973**	$1,292	**$ 13,025**	$1,763	**$ 14,802**
FF-18RA-ET	$304	**$6,148**	$2,169	**$ 13,902**	$2,927	**$ 15,966**
FF-18RA-LDS	$279	**$6,123**	$1,332	**$ 13,065**	$1,472	**$ 14,511**
FF-18RA-HC	$188	**$6,031**	$1,571	**$ 13,304**	$2,097	**$ 15,136**
EETL-15RA-MJB	$0	**$6,930**	$0	**$ 16,431**	$0	**$ 18,125**
EETL-15RA-ET	$554	**$7,484**	$4,208	**$ 20,639**	$5,066	**$ 23,191**
EETL-15RA-HC	$289	**$7,219**	$2,657	**$ 19,088**	$3,185	**$ 21,310**
EETL-15RA-LDS	$471	**$7,401**	$2,125	**$ 18,557**	$2,242	**$ 20,367**
EETL-18RA-ET	$707	**$7,637**	$4,849	**$ 21,281**	$5,813	**$ 23,938**
EETL-18RA-HC	$427	**$7,358**	$3,228	**$ 19,659**	$3,838	**$ 21,963**
EETL-18RA-LDS	$674	**$7,604**	$2,695	**$ 19,126**	$2,863	**$ 20,988**

- Relying *solely* on today's commercially available, carbon-free technologies (i.e., wind, solar and 4-8 hours lithium-ion batteries) is not an economically viable solution
- To be clear, lithium-ion batteries will likely be crucial for achieving New Mexico's ETA, however, alternative emerging technologies are necessary in the future
- The actual cost and capabilities of alternative emerging technologies will become clearer over time and in future IRPs

PL – Planning Load, FF – Financial Load, EETL – Electrification & Emerging Technologies,

15RA – 15% PRM, 18RA 18% PRM,

MJB – Multi-jurisdictional baseline, ET – Existing Technologies, LDS – Long Duration Storage, HC – Hydrogen Conversion

IRP Modeling Results

New Generating Resources: Cost and Technical Capability Certainties

- SPS relied upon generic cost estimates and projected performance capabilities
- The level of accuracy is dependent upon the maturity of the technology
- Actual cost estimates and performance capabilities will be determined by future competitive solicitations
- SPS's 2023 IRP analysis concentrated on long-duration storage and hydrogen-fired combustion turbines technologies, however, other technologies are available and are encouraged to bid into RFPs

Commercially Available (Costs are well known)	Emerging Technologies (Costs are less known)
• Wind • Solar • Battery Energy Storage • Combustion Turbine Generators • Combined Cycle Generation	• Long-Duration Energy Storage • Hydrogen Infrastructure & Costs

IRP Modeling Results
Statement of Need Inputs

- All scenarios included a substantial build out of new renewable generation ranging from 4,281MW to 6,631MW of wind and solar generation between 2028 and 2030
- New dispatchable additions ranged from 1,043MW to 4,290MW during the same period
- Total resource additions ranged from 5,324MW to 10,211MW
- For context, SPS currently has ~7,500MW of installed capacity with an accredited capacity of 5,400 and a system peak of ~4,200MW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IRP Modeling Sensitivities

Key Modeling Takeaways
Sensitivity Analyses

- SPS's sensitivity analyses demonstrates that critical modeling inputs such as transmission network upgrade costs and natural gas & market energy price forecasts can fundamentally change the results of IRP Analyses
- The total cost and selected resources in each portfolio differs under sensitivity analyses
- However, the dispatchable and variable energy resources selected under the sensitivity analyses fall within the range of resources SPS presented in its base IRP modeling
- SPS is not proposing any changes to its statement of need based on its sensitivity analyses

Sensitivity Takeaways

SPS Sensitivity Analysis – $600/kW Transmission Network Upgrade Costs

- Unsurprisingly, the cost of all scenarios increases under a higher transmission network upgrade cost assumption
- The increase in costs ranges from $578M to $1.3B, on a PVRR basis
- The selected resources for each scenario remains relatively close to the $400/kW Transmission Network Upgrade case with the notable changes being:
  - ➢ Fewer solar generating resources selected in the long-duration storage case through 2030
  - ➢ Fewer wind generating resources in all cases between 2031 and 2040
  - ➢ Minor increase in new BESS *(Note: BESS was modeled without transmission network upgrade costs)*

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – $600/kW Transmission Network Upgrade Costs

	PVRR DELTA			Resources Added 2028-2030 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	$381	$2,753	$4,149	-	-	2,220	**2,220**	3,500	1,021	**4,521**
Long Duration Storage	$320	$1,348	$1,629	-	-	1,980	**1,980**	3,500	1,831	**5,331**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	170	**1,940**	3,500	1,071	**4,571**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	$433	$1,709	$2,000	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	360	**2,130**	3,500	1,021	**4,521**
Planning Forecast $600/kW TNU (Compared to $400/kW)										
15% PRM										
Existing Technologies	$31	$397	$578	-	-	-	**-**	-	-	**-**
Long Duration Storage	$124	$812	$1,208	-	-	90	**90**	-	(810)	**(810)**
Hydrogen Conversion	$87	$668	$847	-	-	-	**-**	-	(50)	**(50)**
18%/20% PRM										
Existing Technologies	$87	$779	$986	-	-	(310)	**(310)**	-	-	**-**
Long Duration Storage	$145	$852	$1,264	-	-	90	**90**	-	(750)	**(750)**
Hydrogen Conversion	$112	$709	$885	-	-	(190)	**(190)**	-	-	**-**

Sensitivity Modeling Takeaways
SPS Sensitivity Analysis – $600/kW Transmission Network Upgrade Costs

	PVRR DELTA			Resources Added 2028-2040 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	3,966	837	200	**5,003**	5,450	3,589	**9,039**
Existing Technologies	$381	$2,753	$4,149	-	-	8,430	**8,430**	8,600	2,429	**11,029**
Long Duration Storage	$320	$1,348	$1,629	-	-	4,920	**4,920**	9,160	3,239	**12,399**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	5,230	**7,000**	8,130	2,479	**10,609**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	8,970	**8,970**	8,660	2,429	**11,089**
Long Duration Storage	$433	$1,709	$2,000	-	-	5,350	**5,350**	9,130	3,179	**12,309**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	5,810	**7,580**	8,170	2,429	**10,599**
Planning Forecast $600/kW TNU (Compared to $400/kW)										
15% PRM										
Existing Technologies	$31	$397	$578	-	-	40	**40**	(170)	-	**(170)**
Long Duration Storage	$124	$812	$1,208	-	-	170	**170**	(750)	(810)	**(1,560)**
Hydrogen Conversion	$87	$668	$847	-	-	20	**20**	(200)	(50)	**(250)**
18%/20% PRM										
Existing Technologies	$87	$779	$986	-	-	50	**50**	(230)	-	**(230)**
Long Duration Storage	$145	$852	$1,264	-	-	150	**150**	(660)	(750)	**(1,410)**
Hydrogen Conversion	$112	$709	$885	-	-	20	**20**	(40)	-	**(40)**

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – High Natural Gas & Market Energy Prices

- As expected, the cost of all scenarios increases through 2040
- Under the existing technologies case, the total system cost decreases between 2041 and 2043 (compared to the base assumptions), presumably due to the increased revenue from market sales
- The increase in costs through 2040 ranges from $29M to $306M, on a PVRR basis
- Each scenario selects:
  - Fewer wind generating resources
  - Fewer battery energy storage resources and
  - Substantially more solar generating resources

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – High Natural Gas & Market Energy Prices

	PVRR DELTA			Resources Added 2028-2030 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	$381	$2,753	$4,149	-	-	2,220	**2,220**	3,500	1,021	**4,521**
Long Duration Storage	$320	$1,348	$1,629	-	-	1,980	**1,980**	3,500	1,831	**5,331**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	170	**1,940**	3,500	1,071	**4,571**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	$433	$1,709	$2,000	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	360	**2,130**	3,500	1,021	**4,521**
Planning Forecast High Natural Gas & Market Prices (Compared to base gas)										
15% PRM										
Existing Technologies	$242	$89	($215)	-	-	(150)	**(150)**	-	1,280	**1,280**
Long Duration Storage	$177	$169	$29	-	-	(200)	**(200)**	-	1,650	**1,650**
Hydrogen Conversion	$229	$306	$280	-	-	(170)	**(170)**	-	910	**910**
18%/20% PRM										
Existing Technologies	$197	$75	($133)	-	-	(150)	**(150)**	-	1,320	**1,320**
Long Duration Storage	$165	$157	$39	-	-	(220)	**(220)**	-	1,750	**1,750**
Hydrogen Conversion	$218	$296	$259	-	-	(140)	**(140)**	-	950	**950**

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – High Natural Gas & Market Energy Prices

	PVRR DELTA			Resources Added 2028-2040 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	3,966	837	200	**5,003**	5,450	3,589	**9,039**
Existing Technologies	$381	$2,753	$4,149	-	-	8,430	**8,430**	8,600	2,429	**11,029**
Long Duration Storage	$320	$1,348	$1,629	-	-	4,920	**4,920**	9,160	3,239	**12,399**
Hydrogen Conversion	$240	$1,630	$2,255	933	837	5,230	**7,000**	8,130	2,479	**10,609**
18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	8,970	**8,970**	8,660	2,429	**11,089**
Long Duration Storage	$433	$1,709	$2,000	-	-	5,350	**5,350**	9,130	3,179	**12,309**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	5,810	**7,580**	8,170	2,429	**10,599**
Planning Forecast High Natural Gas & Market Prices (Compared to base gas)										
15% PRM										
Existing Technologies	$242	$89	($215)	-	-	(20)	**(20)**	(340)	1,280	**940**
Long Duration Storage	$177	$169	$29	-	-	(150)	**(150)**	(480)	1,590	**1,110**
Hydrogen Conversion	$229	$306	$280	-	-	(10)	**(10)**	(160)	860	**700**
18%/20% PRM										
Existing Technologies	$197	$75	($133)	-	-	(20)	**(20)**	(370)	1,320	**950**
Long Duration Storage	$165	$157	$39	-	-	(160)	**(160)**	(390)	1,750	**1,360**
Hydrogen Conversion	$218	$296	$259	-	-	(50)	**(50)**	(90)	950	**860**

Sensitivity Modeling Takeaways
SPS Sensitivity Analysis – Low Natural Gas & Market Energy Prices

- As expected, the cost of all scenarios decreases under a low natural gas and market energy price assumption
- The decrease in costs ranges from $30M to $378M, on a PVRR basis
- Each scenario selects:
  - 200MW or less of incremental battery energy storage resources
  - Fewer wind generating resources
- The long duration storage scenario also selects less solar resources

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – Low Natural Gas & Market Energy Prices

	PVRR DELTA			Resources Added 2028-2030 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
15% PRM										
Multi-Jurisdictional Baseline*	$0	$0	$0	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	$381	$2,753	$4,149	-	-	2,220	**2,220**	3,500	1,021	**4,521**
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18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	$433	$1,709	$2,000	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	360	**2,130**	3,500	1,021	**4,521**
Planning Forecast High Natural Gas & Market Prices (Compared to base gas)										
15% PRM										
Existing Technologies	($246)	($281)	($197)	-	-	-	**-**	-	-	**-**
Long Duration Storage	($229)	($277)	($41)	-	-	140	**140**	-	(810)	**(810)**
Hydrogen Conversion	($257)	($374)	($378)	-	-	30	**30**	-	(50)	**(50)**
18%/20% PRM										
Existing Technologies	($282)	($325)	($256)	-	-	-	**-**	-	-	**-**
Long Duration Storage	($239)	($281)	($30)	-	-	100	**100**	-	(740)	**(740)**
Hydrogen Conversion	($264)	($330)	($335)	-	-	(10)	**(10)**	-	10	**10**

Sensitivity Modeling Takeaways

SPS Sensitivity Analysis – Low Natural Gas & Market Energy Prices

	PVRR DELTA			Resources Added 2028-2040 (Nameplate Capacity)						
				Dispatchable				Variable Energy Resources		
	2024-2030 NPV $(M)	2024-2040 NPV $(M)	2024-2043 NPV $(M)	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Planning Forecast										
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18%/20% PRM										
Existing Technologies	$479	$3,156	$4,577	-	-	8,970	**8,970**	8,660	2,429	**11,089**
Long Duration Storage	$433	$1,709	$2,000	-	-	5,350	**5,350**	9,130	3,179	**12,309**
Hydrogen Conversion	$316	$1,982	$2,667	933	837	5,810	**7,580**	8,170	2,429	**10,599**
Planning Forecast Low Natural Gas & Market Prices (Compared to base gas)										
15% PRM										
Existing Technologies	($246)	($281)	($197)	-	-	140	**140**	(390)	-	**(390)**
Long Duration Storage	($229)	($277)	($41)	-	-	200	**200**	(840)	(810)	**(1,650)**
Hydrogen Conversion	($257)	($374)	($378)	-	-	140	**140**	(580)	(50)	**(630)**
18%/20% PRM										
Existing Technologies	($282)	($325)	($256)	-	-	120	**120**	(350)	-	**(350)**
Long Duration Storage	($239)	($281)	($30)	-	-	190	**190**	(710)	(740)	**(1,450)**
Hydrogen Conversion	($264)	($330)	($335)	-	-	130	**130**	(510)	10	**(500)**

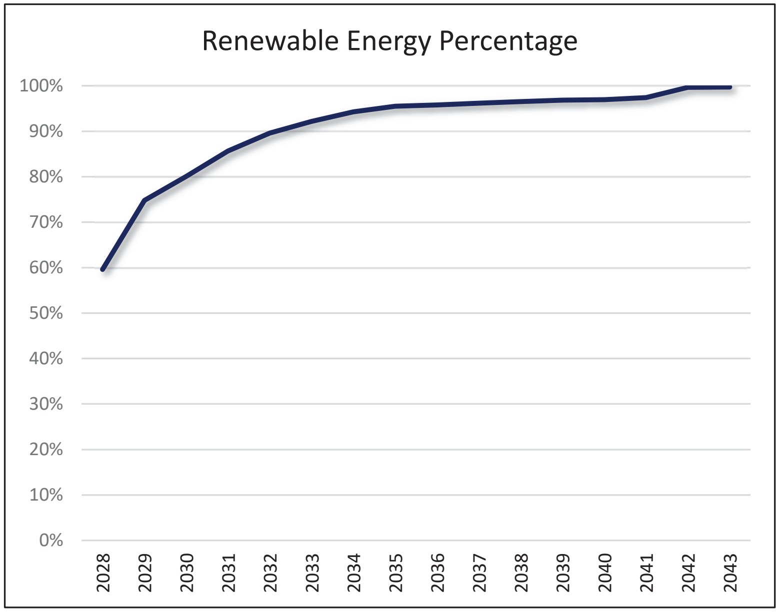
Stakeholder Requests

IRP Stakeholder Requests
Early Compliance

- SPS was requested to evaluate accelerated compliance with the Energy Transition Act including ‘80% carbon-free resources by 2030 and 95% by 2035 on the pathway to 2040 zero carbon target.’
- SPS was requested to evaluate this case under the ‘long-duration storage’ case assuming the ‘planning load’

Results

- SPS’s base analysis achieved 80% by 2030, 96% by 2035, and 97% by 2040, and 99.6% by 2042 without constraining the model
- To meet the 2040 zero carbon target, SPS will be required to accelerate the retirement of its remaining existing combustion turbine generators



IRP Stakeholder Requests
Virtual Power Plant

- SPS evaluated a scenario in which ~5% of SPS's existing NM residential and small C&I energy sales could be served by 113.3MW of distributed solar and 56.7MW of distributed battery energy storage
- As requested, this scenario was compared against the 'existing technologies' case under the 'electrification and emerging technologies' load assumption
- As the Hybrid solar and battery energy storage resource was not initially selected, SPS ran an additional case where the resources were 'forced' into the model

Results

- The additional hybrid resource avoided 30MW of battery energy storage and 50MW of solar resources, and
- Increased the overall cost of the portfolio by $82M on a PVRR basis

Comments

The economic viability of a distributed solar and battery energy storage is ultimately driven by the cost and technical capabilities of resources modeled. Additional, project specific, details are required to further evaluate the potential benefits and costs.

IRP Stakeholder Requests
Dynamic Load Shifting

- SPS evaluated a scenario in which ~5% of SPS's existing NM residential and small C&I can be shifted from 'net on-peak' to 'net off-peak'
- The program was sized at 119.3MW and could be called up once per day, 365 days a year, for a duration of no more than 4 hours
- The accredited capacity of the program (i.e., resource) was grossed up 15% to 137.2MW on the assumption SPS would avoid carrying planning reserves
- The program was evaluated at 'zero-cost'
- The program was compared against the 'existing technologies case' under the 'electrification and emerging technologies' load assumption

Results

- The program avoided 30MW of wind, 10MW of solar, and 250MW of lithium-ion battery energy storage through 2043, and reduced costs by $294M on a PVRR basis.

Comments

As the program was evaluated at 'zero-cost', it is not surprising the program shows costs savings. The costs savings should be evaluated against the potential cost of implementing such a program

IRP Stakeholder Requests

Demand Response

- SPS evaluated a scenario which included an additional 200MW demand response program
- The program was sized at 200MW and could be called upon once per day, 365 days per year, for a duration of no more than 4 hours
- The program was evaluated at 'zero-cost'
- The program was compared against the 'long duration storage' case under the 'planning' load assumption

Results

- The additional DR program avoided 400MW of storage, 170MW of wind, and *added* 120MW of solar
- Total system costs were reduced by $439M on a PVRR basis

Comments

As the program was evaluated at 'zero-cost', it is not surprising the program shows costs savings. The costs savings should be evaluated against the potential cost of implementing such a program. Furthermore, projected savings are based on a DR program that is callable 365 days per year.

IRP Stakeholder Requests
Increased Hydrogen Blending

- SPS incorporated the following assumptions as part of its own Hydrogen Conversion analysis (conforming with potential EPA requirements):
  - 30% Hydrogen (by volume) by 2032, 96% Hydrogen (by volume) by 2038

- As requested SPS evaluated an increased Hydrogen Blending case using the following assumptions:
  - ***50%*** Hydrogen (by volume) by 2032, 96% Hydrogen (by volume) by 2028

- The program was compared against the 'Hydrogen Conversion' case under the electrification and emerging technologies load assumption

Results

- Under the increased hydrogen blending case, the portfolio of resources essentially remained the same (the only difference being an additional 10MW of battery energy storage).

- The portfolio cost increased by $16M on a PVRR basis

Comments

The increase in portfolio cost does not assume any changes for the cost of hydrogen infrastructure (e.g., pipeline) compared to the base case. Project specific information is required to calculate the cost impact of increased hydrogen blending

IRP Stakeholder Requests

Reciprocating Engines – Without Sub-hourly Credit

- SPS added Reciprocating Engines to the list of resources available for selection
- Wartsila provided the cost and technical characteristics for the resources
- The program was compared against the ‘Hydrogen Conversion’ case under the ‘planning load’ assumption
- SPS limited the addition of Reciprocating Engines to 2 new resources (consisting of 3 units each) per year

Results

- EnCompass replaced 3,390MW of battery energy storage and 940MW of wind generation with 1,807 MW of RICE (the maximum available) and an incremental 690MW of solar
- The scenario decreased costs by $519M, on a PVRR basis

Comments

SPS did not include any incremental hydrogen delivery costs (i.e., pipeline) for the additional RICE resources. Any additional costs will lower the calculated savings

IRP Stakeholder Requests
Reciprocating Engines – With Sub-hourly Credit

- SPS re-ran the RICE stakeholder request to include a credit for resources with a sub-hourly start time
- The sub-hourly credit was calculated by Wartsila and was incorporated as a negative fixed cost to BESS, RICE, and CTG
  - ➢ As an 'instantaneous' resource, the sub-hourly credit was highest for BESS
  - ➢ RICE resources received the second highest sub-hourly credit
  - ➢ Fast-start CTs received the lowest sub-hourly credit

Results

- EnCompass replaced all CTs and most RICE resources with new BESS and adds additional wind. EnCompass also selects fewer wind resources.
- As this sensitivity fundamentally changes the cost of all new dispatchable resources, SPS cannot compare the cost impact

QUESTIONS ?

Welcome!

Stakeholder Engagement Workshop
Meeting #6

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

1:00 PM - 5:00 PM, Aug. 29, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

GRIDWORKS

Note: this meeting is being recorded. A link to the recording will be included in the meeting summary and posted on the GRIDWORKS website.

The Agenda for this Meeting

1:00 PM	Welcome, Meeting Purpose and Outcomes, Schedule Change Announcement
1:10 PM	Modeling Results: Stakeholder Requested Runs, SPS Runs, and Group Discussion
2:30 PM	Break
2:45 PM	SPS Recommended Portfolio and Group Discussion
3:50 PM	Break
4:00 PM	Implications for Action Plan
4:45 PM	Summary of Next Steps, Meeting Survey
5:00 PM	Adjourn

Purpose and Outcomes for the Workshop

Purpose:

- Prepare for September input to the Action Plan

Key outcomes:

- Insights from modeling results including results of stakeholder requested modeling runs
- Awareness of SPS's conclusions and selection of recommended portfolio
- Preview of process for collecting stakeholder input to the Action Plan

We are Now Entering the Action Plan Phase of the Process

IRP Filing
Oct. 13

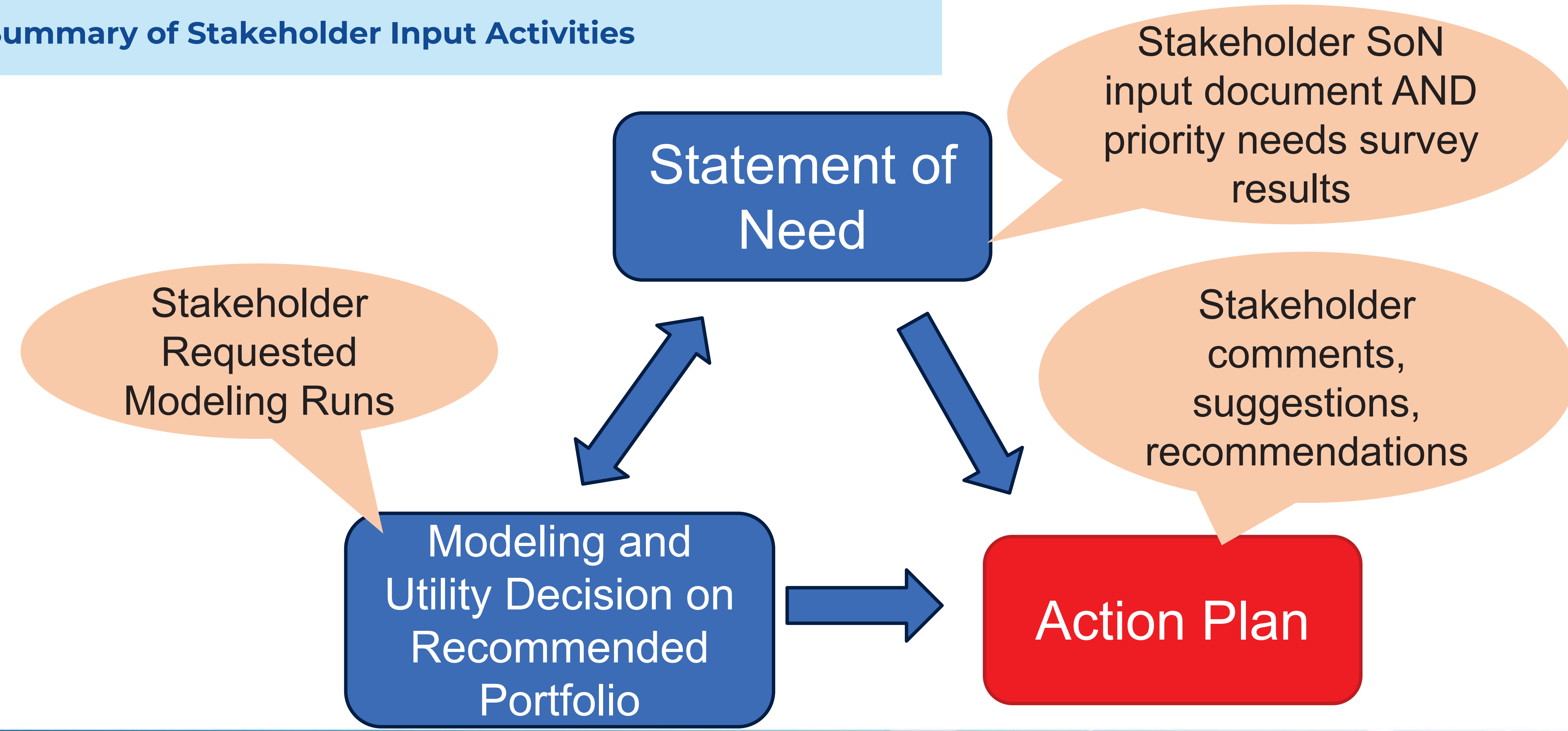
May - June	July – August	September - October
• May 16: 2 – 4:30 PM • June 1: 2 - 4 PM • June 13 & 14: 12–5 & 9–3 workshop in Roswell	• July 6: 1 – 5 PM • August 1 & 2: 1-5 & 9-12 NOON • August 29: 1 – 5 PM	• **Sept.13: ~~1 – 3 PM~~ NOW 1 - 5PM** • **~~Sept. 21: 1 – 5 PM~~ MOVED** • **Oct 3: 1:30 – 3:30 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans, Check alignment with Statement of Need

3: Input to Action Plan & Process Feedback

Summary of Stakeholder Input Activities



Model Results and SPS Conclusions

- Stakeholder Requested Runs and
  - Reactions from Requestors
- SPS Runs, including:
  - Which sensitivities caused large changes in resource portfolios?
  - Identification of sensitivities/variations that did not cause changes
  - Questions of clarification and understanding results
  - Process for answering questions, given limited time

1:10 – 2:30
80 min

Break (15 min)

- SPS Discussion of Recommended Portfolio(s) and factors considered
  - NPV comparison of short-listed portfolios
  - Questions

2:45 – 3:50
65 min

Southwestern Public Service

Model Results

GRIDWORKS

Context and Process for Action Plan Input

30 min

- Refresher on Action Plan, SPS
  - Elements and activities underway from prior action plan
  - Outline/structure/template of SPS's Action Plan
  - Questions

15 min

- Process for submitting action plan suggestions:
  - Submit suggestions via https://forms.gle/umvDwaGcYTbDdjEM7
  - Browse responses from others for inspiration and collaborative input
  - For those lacking access to google forms, send email with "SPS ACTION PLAN SUGGESTION" in the subject line to info@gridworks.org
  - Submit form(s) - name, organization and email required
  - Responses due by NOON MDT on Sept 12
  - Discussion of ideas during Sept 13 meeting
  - Questions

Next Steps in the Process

- **Questions from today due via email to jgriffin@gridworks.org by Friday, Sept 1 at 5 PM MDT. Answers will be provided in a recorded Q&A session on Wednesday, Sept. 6 at 3 PM MDT. Watch for a ZOOM invitation.**

- **Sept. 13: 1 PM – 5 PM (NOTE EXTENSION OF END TIME),** Meeting #6.5 via Zoom. Focus is developing input for the Action Plan. Stakeholders are invited to submit action plan suggestions by Sept. 12, NOON, MDT.

- **Sept. 21: Rescheduled for Oct. 3.**

- **Oct. 3: 1:30 PM – 3:30 PM,** Meeting #7 via Zoom. Focus is review of the Action Plan.
- Oct. 13 – IRP is filed by SPS.
- Oct. 26: 2 PM – 3:30 PM, Meeting #8. Focus is feedback on stakeholder process.

Your Feedback is Critical

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...please:

Scan the QR Code to the right

OR

Visit this link:
bit.ly/SPS-IRP-Feedback

GRIDWORKS

Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

GRIDWORKS

Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

ACTION PLAN INTRODUCTION

Zoë E. Lees, Regional Vice President Regulatory Policy

Brooke A. Trammell, Regional Vice President Regulatory Pricing

August 29, 2023

RULE REQUIREMENTS FOR STATEMENT OF NEED

17.7.3.10 STATEMENT OF NEED:

A. The statement of need is a description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies.

B. The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

RULE REQUIREMENTS FOR ACTION PLAN

17.7.3.11 ACTION PLAN:

A. The utility's action plan shall:

(1) detail the specific actions the utility shall take to implement the IRP spanning a three year period following the filing of the utility's IRP;

(2) detail the specific actions the utility shall take to develop any resource solicitations or contracting activities to fulfill the statement of need as accepted by the commission; and

(3) include a status report of the specific actions contained in the previous action plan.

B. The utility shall update the commission by filing two reports describing the utility's implementation of the action plan. These reports shall be filed in the existing IRP docket one year after the filing of the IRP, and two years after the filing of the IRP, respectively.

C. An action plan does not replace or supplant any requirements for applications for approval of resource additions set forth in New Mexico law or commission regulations.

D. The utility shall promptly notify the commission and participants of material events that would have the effect of changing the results of the utility's action plan had those events been recognized when the action plan was developed.

E. In accepting the action plan, the commission shall take into consideration contractual obligations as between the utility and any regional transmission organizations or balancing authorities of which the utility is a member.

EXAMPLES OF ACTIONS TO BE IDENTIFIED IN AN ACTION PLAN NMAC 17.7.3.11(A)

- Identify actions to be taken to issue an RFP (next slide)
- Identify regulatory filings and timing of those filings following the RFP
- Identify whether SPS will evaluate existing generation units for extending service lives and/or PPA extensions
- Identify any necessary DSM studies, such as a TOU Study
- Evaluate DSM offerings for Energy Efficiency filings, such as ICO tariffs

EXAMPLES OF ACTIONS TO BE IDENTIFIED IN AN ACTION PLAN NMAC 17.7.3.11(B)

- Identify actions to be taken to issue an RFP
  - Develop model PPA for RFP
  - Develop RFP bid evaluation criteria and other RFP documents
- Identify capacity need for the RFP based on IRP modeling conducted
- Identify technical characteristics of resources to fill need (e.g., intermittent, dispatchable)
- The RFP will incorporate stakeholder feedback from the IRP process
  - Encouraging the bidding of emerging technologies
  - Structuring as an all-source solicitation to obtain bids with technological and geographic diversity
- SPS will work with the independent monitor appointed by the Commission pursuant to NMAC 17.7.3.14

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STATUS REPORT OF 2021 IRP ACTION PLAN
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6

STAKEHOLDER Input to the Statement of Need – SPS IRP

Based on input from July 6, 2023, Stakeholder Meeting

(It was noted at the July 6 meeting that the elements in this document are not prioritized).

SUMMARY

- When it comes to procurement, the technical characteristics of resources that should be considered:
    - Cost of resources
    - Capacity contribution of resources
        - Dispatchability
        - Location of resource (geographic diversity)
    - Emerging technologies that allow for integration of generation that meets the REA requirements, including distributed energy resources
    - Effect of resources on SAIDI, SAIFI, NERC and WECC requirements
- The objectives we're trying to solve for:
    - Cost effective resource portfolio
    - Meet the RPS requirements
    - Meet projected load growth and secure replacement energy and capacity for retiring resources (Q for modeling: Load growth requirements v. replacement resources)
    - Reliability and resiliency
    - Robust energy system that furthers diverse economic development in the state
    - Meet evolving resource adequacy requirements
    - Ensuring affordability to all SPS customers, including residential and low-income customers, as the system transitions
    - Providing a just and orderly transition for workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements.
    - Engaging customers to help the utility reliably serve during grid constrained events
- There are resource needs by 2027 that are currently being addressed by the 2021 IRP Action Plan. SPS/Xcel Energy also has capacity need of ___MWs by 2028-2030, which requires commencement of the resource procurement process as soon as possible, under:
    - Description of level 1-3 modeling process, with details regarding the following:
        - Level 1 - Base case
        - Level 2 - Scenario X, modeled by increased Planning Reserve Margin
        - Level 3 (e.g. higher load)
- Based on generic pricing, Recommended/Preferred Portfolio has potential for:
    - ___ MW new clean energy
    - ___ MW from dispatchable (resource that can be called upon at anytime that is needed)
    - ___ MW storage
    - ___MW Demand Side Resources

- NOTE THAT SOME RESOURCES MAY MEET MORE THAN ONE CATEGORY. For example, some assets (such as hydrogen and/or CCS retrofits of existing generation) may be both clean and dispatchable.)
- Will energy needs also need to be stated (along with capacity needs)?

- POSSIBLE ACTION PLAN IDEA - engage customers to help the utility reliably serve all during grid constrained events, including new rate structures. (SEE EXAMPLES BELOW IN "OTHER RATEMAKING PROPOSALS")

- Ultimate portfolio depends on bids submitted/received
- Rule/state law compliance
  - "technical characteristics of proposed new resources"
- Timeline considerations
  - 2028-2030 need identified
  - it takes time to get new large capacity resources on line. Near term resource needs are being met by 2021 action plan
  - timeline for transmission interconnection to SPP is a consideration (FERC jurisdiction), recognizing that certain resources may be interconnected more quickly than others
  - interconnection of distributed resources to the SPS system (NM PRC jurisdiction) is also a consideration
  - note that it takes less time to get smaller resources on line

RELIABILITY

- Timeframe to come on line
- PRM requirements are expected to increase in the future
- More Infrastructure - will need investment in distribution and transmission assets to support new generation and meet resource needs. Note that hosting capacity of existing circuits could be a consideration for distributed resources.
- Location considerations -
  - generation closer to the load makes the resource more valuable.
  - Larger facilities could encounter land use conflicts or other local government permitting challenges.
  - RFP results will also consider location
- Address transmission infrastructure needed to integrate more renewables
- Should be planning for increased resource adequacy requirements
- System analysis for inadequate load supply (blackout/brownout) and designation of critical infrastructure?

MORE GENERATION

- Make individual solar affordable (as a way to decrease load)
- No regrets (new resources & pathway). Do not put new resources on line that emit fossil fuel emissions, especially in the electricity generation sector. Clean electricity sooner is better. Need to deal with upstream emissions as well as stack emissions.
- Most economical and reliable portfolio to meet SPS's capacity needs

- Lifecycle environmental cost considerations, including decomissioning costs. “Cradle to grave” materials considerations.
- Incorporate evolving technologies
  - batteries
  - carbon free or low emissions, dispatchable technologies
  - technologies that may have previously been considered non dispatchable
- Maximize investment opportunities (how to measure the benefits of these investments is challenging)
  - can the investment facilitate economic development in the state?
  - to meet needs over the long term
  - support a diversity of businesses that support NM’s economy
- Cost effective, including fuel

ENVIRONMENTAL

- Climate Crisis
- Carbon-free ASAP
- In recognition of climate change concerns, make steady progress toward meeting requirements of renewable energy act
  - consider modeling of accelerated RPS goal achievements (prior to 2045)

TRANSITION – HUMAN IMPACT

- Affected workforce support
- Reinvestment in impacted communities
- Involve individuals – both homeowners and renters (community solar?)
- Consider community reinvestment, workforce transitions, training support

LOAD GROWTH - NOTE THAT MODELING RESULTS WILL INFORM THIS SECTION, Demand-side Resources modeling scenario(s) are being developed.

- Electric supply/infrastructure growth rate to include industrial electrification projects in addition to projected business growth. Note a reference offered by K. Stanley…..https://www.ercot.com/files/docs/2023/03/17/Presentation%20to%20ERCOT%20planning.pdf …
  - S&P Global's study identified a current 2.3GW demand gap to supply power to O&G loads in the SPP area, and that gap increasing to 5.3GW by 2032 if the current growth continues. See slide 10.
- Changing load (increased electrification)
  - Environmental regulations driving combustion equipment to electric
- Evaluate probability of new load becoming a reality
  - High side/low side and the potential lag in grid buildout to meet demand
- Demand Response - increased role of DR….specifics discussion in IRP on current and potential demand response programs and impact on load in each IRP scenario. Include information on cost of DR programs as an alternative to additional generation
- Partial Requirement Tariff (standby tariff), Case 22-00285-UT

OTHER RATEMAKING PROPOSALS

Tools to engage customers to help the utility reliably serve customers during grid constrained events, including:

- Real-time day ahead pricing tariff designed to expose customers to market prices such that the customer would respond; change usage behavior in market constrained events, reducing peak load and associated system costs.
- Interruptible load tariff designed to compensate customers for self-curtailment at a cost lower than market purchases in the same time period, reducing peak load and associated system costs.
- Future possible regulatory scenarios
- Behind the meter solar plus storage as tools for the utility to call upon to dispatch as needed.

Gridworks-provided Chat Log from Meeting

00:36:12 Deborah Shields - Gridworks:https://gridworks.org/initiatives/xcel-sps/
00:39:41 Deborah Shields - Gridworks:Jay Griffin - jgriffin@gridworks.org
00:41:37 Jay Griffin: Please type your questions in the meeting chat
00:46:42 Jeffry Pollock: How were the thermal retirements by 2030 determined? Were the plant retired due to age alone or are the retirements based on economics (going forward revenues < going forward costs)?
00:59:45 Athena Christodoulou: What is defined as long duration storage? Is it paired at all with Li-4hr?
01:00:13 Jeffry Pollock: Slides 6-7: Are the reserve margin and EUE metrics generally the same or similar under each of the scenarios? Is it possible to see the capacity additions, revenue requirements, reserve margin, and EUE for each year of the analysis?
01:00:29 Athena Christodoulou: Why isn't Hydrogen lumped into the emerging technologies area?
01:00:33 Chad Crowley (He/Him): How do you see load patterns shifting over the forecast period (i.e., how does the ELCC of technologies change in your view?) Does wind ELCC increase over time if net load shifts to mornings/evenings? Does solar ELCC drastically reduce - if so, how rapidly and with what build volume?
01:00:49 Hall, James A: Do you expect the LCOE inputs for wind and solar from NREL that were modelled to have significantly underestimated the real world costs you may see in the 2024 rfp
01:01:12 Jeffry Pollock: Slide 9: Is SPS going to consider the potential for adding SMRs (small modular nuclear reactors)?
01:02:33 Hall, James A: Slide 10 states SPS has 7500MW installed capacity. Is this SPS only in NM or SPS in both NM and TX
01:03:17 Jeffry Pollock: SPS is not alone in considering thousands of MW of new renewable resources. Should we be concerned that the wind/solar industry can accommodate all of the demands for this technology?
01:07:33 Cynthia Mitchell: PRC Staff offers these questions in chat as the start of a more complete document by the due date will be this Friday. Given the time constraints and other stakeholder questions, we are comfortable with waiting to the next meeting to address our questions,

1. The scenario results are multi-jurisdictional, correct? And the ballpark split between TX and NM is 50/50%, right?
2. Does SPS have a preferred scenario of the four shown?
3. For the base case that includes 700 MW CT and 837 CC, are the gas gen additions 40-year depreciation? How would the PVRR change if modeled as 20-year depreciation?
01:08:05 Cynthia Mitchell: 4. How were they able to force in LDES? Do you think the results are generally reasonable?
5. Did you say you modeled for LDES at 100 hour? Does it make sense to consider LDES less than 100 hour, or does it not matter for purposes of this generic modeling analysis?
6. The reason the PVR for H2gas is lower than LDES in the near term is because there are no hydrogen conversion costs included, right?
7. For SPS' 2024 RFP, will CTs be included, or simply "dispatchable" resource? Does the NM

RFP process inform your service in TX and how?
8. Could we please get the cost inputs to H2gas (conversion, fuel, transport, storage) and the timing of those costs)
9. Could you discuss (sometime) how SPS might react/move forward on the electrification forecast?
01:09:45 Margie Tatro (Gridworks): Please explain again the PVRR Delta section of slides 6 and 7. Why is long duration storage less costly than hydrogen conversion in the 2030 case but more costly in the 2040 and 2043 cases?
01:11:43 Deborah Shields - Gridworks:Questions from today due via email to jgriffin@gridworks.org by Friday, Sept 1 at 5 PM MDT. Answers will be provided in a recorded Q&A session on Wednesday, Sept. 6 at 3 PM MDT. Watch for a ZOOM invitation.
01:12:48 Cynthia Mitchell: Margie, I think that is because the H2gas case incurs hydrogen conversion costs beginning in 2033.
01:15:19 Athena Christodoulou: LDES chart defining LDES on pg 1. Can go to DOE for entire webinar
https://docs.google.com/document/d/1HXilcIwhIFmwCt8NuMdDLDHZ2nzcz9jIdZD_qogRuv8/edit?usp=sharing
01:16:05 Margie Tatro (Gridworks): CORRECTION, SORRY. Please explain again the PVRR Delta section of slides 6 and 7. Why is long duration storage more costly than hydrogen conversion in the 2030 case but less costly in the 2040 and 2043 cases?
01:18:09 Athena Christodoulou: If you're only blending to 50% H2, how are you claiming net 0 carbon emissions?
01:18:41 Chad Crowley (He/Him): Replying to "If you're only blend..."

Athena, they step up the blending towards the statutory requirement.
01:18:46 Cara Lynch: SPS proposes that the ratios of hydrogen and natural gas will change over time. I missed the ratio changes over time . . .what were those?
01:19:34 Athena Christodoulou: Unless gas goes to 0% then they will never reach net 0. Especially if you include upstream emissions
01:22:04 David Millar: @Athena Christodoulou not true. Most if not all Net Zero scenarios allow some amount of fossil fuel emissions which are offset by biogenic or other types of carbon sequestration. That's why it's "Net Zero" not zero.
01:22:35 Mclee Kerolle NMPRC: Reacted to "@Athena Christodoulo..." with 👍
01:23:07 Athena Christodoulou: @David Millar that is a false hope...CCS has little chance to fully succeed and biogenic releases already sequestered C
01:25:18 Athena Christodoulou: Is the electric industry ready to take on the reconstruction costs of climate change?
01:25:54 Athena Christodoulou: And the health impacts?
01:27:51 David Millar: You're entitled to your opinion about what technologies are likely to succeed or not. The US EPA certainly has put their money on CCS and hydrogen with the proposed GHG regulation. BECCS plays a prominent role in IEA and many other decarb studies.
01:28:54 Athena Christodoulou: Because the O/G industry owns EPA and IEA
01:29:26 Athena Christodoulou: I, personally see through the lies by that industry.

Not opinion. Facts.
01:30:18 Athena Christodoulou: As an energy & environmental engineer/scientist
01:31:00 Hall, James A: Are these SPS numbers e.g 80% by 2030 renewable for SPS territory or NM only
01:38:50 Athena Christodoulou: slide 17 - why not compare against 4hr Li, or existing tech?
01:45:57 David Millar: Interesting results! Yes I agree...this was a first order simplistic approach but shows flexible resources (RICE and batteries) are undervalued using hourly models.
01:46:36 Athena Christodoulou: We are in a climate emergency and I for one don't believe the O/G industry to reduce their fugitive emissions, low performing well emissions, CCS etc. Shouldn't even consider NEW FF infrastructure at all. Scientists are freaking out.
01:51:05 Josh Smith: Does the 111b assumption for gas plants include a 50% capacity factor limit?
01:52:32 Cynthia Mitchell: I forgot which scenario the dynamic load shifting and demand response cases were run on?
01:55:25 Cara Lynch: Yes, no derogatory interpretation assumed. I'm just curious in the implementation costs ☺
01:59:42 Deborah Shields - Gridworks: Resume in 11 minutes
02:28:10 Athena Christodoulou: What will be the criteria to make RFP choices? future costs? customer costs? avoiding decisions causing future regrets?
02:28:29 Cynthia Mitchell: 2028 is the first year of new resource need? Is it an RFP or more RFI that you are after in 2024? Isn't RFI quicker turnaround?
02:36:54 Chad Crowley (He/Him): You mentioned no NU's for the first 1,021 MWs of solar - is this through a fuel switching process? How are you approaching fuel switching and how are you evaluating what resources can serve as a fuel-switching resource?
02:38:01 Cynthia Mitchell: I suggest that Athena and all look at App A of the IRP rule; it provides a listing of criteria and considerations
02:48:48 Margie Tatro (Gridworks): Please comment on SPSs confidence level of the 18% PRM and the Electrification forecast ...to help people understand the upper end of the resource needs range.
02:57:15 Chad Crowley (He/Him): (@Jay Griffin, If there's time I'd love to ask my earlier ELCC question at this point. If not, no worries)
03:06:54 Deborah Shields - Gridworks: Questions from today due via email to jgriffin@gridworks.org by Friday, Sept 1 at 5 PM MDT. Answers will be provided in a recorded Q&A session on Wednesday, Sept. 6 at 3 PM MDT. Watch for a ZOOM invitation.
03:07:11 RJ McIntosh: Awesome work !
03:08:00 Athena Christodoulou: Thank you!
03:09:59 RJ McIntosh: I do have a serious question about "digitalization" of any grid and the DOE position about going forward through several fed grants coning from the Office of Electrification. You can respond after meeting or on our next meeting. Thank You
03:10:02 Deborah Shields - Gridworks: See you back at 4pm MDT
03:41:29 Athena Christodoulou: How much battery?
03:42:39 Cynthia Mitchell: And these resources are in the scenarios, right?

03:42:47 Athena Christodoulou: Was that new gas?
03:43:28 Cynthia Mitchell: Do you have a write up on this Brooke (short summary)?
03:51:30 Deborah Shields - Gridworks:https://forms.gle/xLRdK16ByVreYdcMA
03:57:59 Cynthia Mitchell: Need to drop off. Thank you Ben and team.
03:59:14 Deborah Shields - Gridworks:http://bit.ly/SPS-IRP-Feedback
04:01:20 Athena Christodoulou: Thank you Gridworks and Zoe, Brooke, Jay and Ben

Link to Video Recording

https://youtu.be/e1230RObDNI

September 13, 2023 Stakeholder Meeting

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Meeting #6.5, Sept. 13, 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

Approximately 21 stakeholder representatives from 17 different organizations plus a team of SPS/Xcel Energy professionals attended a meeting focused on developing input to Xcel Energy/SPS's Integrated Resource Plan. The purpose of the meeting was to assess the level of agreement on SoN and develop input to the Action Plan.

Key outcomes of the meeting are:
- ❑ Comparison of stakeholder and utility SoN elements, assessment of similarities and differences
- ❑ Collection and initial mapping of Action Plan suggestions.

A recording of the meeting is available at: https://youtu.be/gWtuS6tBbDw

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

- Slide Deck – Gridworks/SPS IRP Stakeholder Meeting 9/13/23
- Action Plan Mapping Worksheet – post meeting doc 9/13/23
- Staff SPS Memo re: SoN 9/12/23

Statement of Need (SoN)

The SPS team reviewed the key components of the utility's SoN analysis. Of key importance is the range of new capacities for dispatchable and variable resources needed over the planning period. Three different demand forecasts, two different Planning Reserve Margin requirements, and four portfolio options resulted in the need for 1043 – 4290 MW of new dispatchable (including storage) resources by 2030 and 4281 – 6631 MW of variable resources by 2030.

Key elements of the stakeholders' input to the statement of need (available at **Statement of Need Elements 7/24/23**) were also reviewed and participants were asked to comment on their level of agreement with the SPS SoN components. The following concerns, requests, and differences of opinion were expressed:
- Two stakeholders requested that the term "dispatchable" resources be further described as including the following three scenarios: lithium-ion storage (no new gas), long duration storage, and new gas generation with future conversion to hydrogen. One stakeholder expressed a preference for scenarios without future fossil fuel-based resources.
- One stakeholder organization does not agree with inclusion of the electrification (high load growth) assumption and suggests that the high end of the new resource requirements is not appropriate without additional actions to mitigate costs of high load growth on all customers.

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This stakeholder recommended two sets of actions to address this concern, which have been incorporated into the common set of action plan items for further discussion with SPS.

- One stakeholder requested the addition of a statement regarding the range of demand side resources and energy efficiency included in the need analysis. (Note that the stakeholder working group's version of the SoN elements includes demand side resources in the summary.)

Action Plan

Discussion regarding the action plan was structured to identify those ideas that were supported by both SPS and stakeholders. SPS provided background information regarding action plan items that they are considering. A summary of action plan suggestions from stakeholders (as of Sept. 12) were also shared. Stakeholders were then provided with opportunities to comment on ideas already submitted and to offer new ideas. Ideas that were generally supported by both stakeholders and SPS were noted as COMMON ITEMS. A mapping of all ideas discussed is included in the ACTION PLAN MAPPING WORKSHEET (ADD LINK).

Dialogue covered many topics, including: the scope and evaluation criteria envisioned in the next RFP for new resource; demand side resource related actions; life extension of existing SPS-owned assets and PPA provided resources; and resiliency; a potential RFI for long lead time dispatchable technologies; reliability and affordability interests; and several study or analysis ideas.

The next step in the process is for SPS to consider the input received and decide how to address it in the IRP. An update will be provided during the next meeting.

NEXT MEETING:

The next meeting of the group, Meeting #7, is scheduled for Oct. 3. Meeting time is 1:30 PM – 3:30 PM. The focus will be discussion of the SoN and Action Plan. The meeting will take place on ZOOM: https://us02web.zoom.us/j/8569536132

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.

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Please Access and Complete the Survey Now

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...by either:

Scanning the QR Code to the right

OR

Visiting this link: bit.ly/SPS-IRP-Feedback

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Welcome!

Stakeholder Engagement Workshop

Meeting #6.5

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

1:00 PM - 5:00 PM, Sept. 13, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

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Note: this meeting is being recorded. A link to the recording will be included in the meeting summary and posted on the GRIDWORKS website.

The Agenda for this Meeting

1:00 PM	Welcome, Meeting Purpose and Outcomes
1:10 PM	Review and Discussion of SoN (stakeholder and SPS elements)
2:15 PM	Break
2:30 PM	Next Steps in Consideration of SoN Input Context and Guidance for Action Plan Discussion of Action Plan Suggestions Received to Date
3:45 PM	Break
4:00 PM	Action Plan Mapping Framework
4:45 PM	Summary of Next Steps, Meeting Feedback Request
5:00 PM	Adjourn

Purpose and Outcomes for the Workshop

Purpose:

- Assess level of agreement on SoN and
- Develop input to the Action Plan

Key outcomes:

- Comparison of stakeholder and utility SoN elements, assessment of similarities and differences
- Collection of Action Plan suggestions

We are Now In the Action Plan Phase of the Process

IRP Filing
Oct. 13

May - June	July – August	September - October
• May 16 • June 1 • June 13 & 14	• July 6 • August 1 & 2 • August 29	• **Sept.13: 1 – 5 PM** • **Oct 3: 1:30 – 3:30 PM** • **Oct. 26: 2 – 3:30 PM**

1: Grounding and Statement of Need, Prepare for Modeling

2: Model Runs and Produce Action Plans, Check alignment with Statement of Need

3: Input to Action Plan & Process Feedback

RULE REQUIREMENTS FOR STATEMENT OF NEED

17.7.3.10 STATEMENT OF NEED:

A. The statement of need is a description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies.

B. The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

Xcel Energy®

SoN Elements – SPS, Slide 10 Aug. 29 Presentation

IRP Modeling Results
Statement of Need Inputs

- All scenarios included a substantial build out of new renewable generation ranging from 4,281MW to 6,631MW of wind and solar generation between 2028 and 2030
- New dispatchable additions ranged from 1,043MW to 4,290MW during the same period
- Total resource additions ranged from 5,324MW to 10,211MW
- For context, SPS currently has ~7,500MW of installed capacity with an accredited capacity of 5,400 and a system peak of ~4,200MW

SoN Elements - Stakeholders Resource Need Input

- There are resource needs by 2027 that are currently being addressed by the 2021 IRP Action Plan. SPS/Xcel Energy also has capacity need of ___MWs by 2028-2030, which requires commencement of the resource procurement process as soon as possible, under:
  - Description of level 1-3 modeling process, with details regarding the following:
    - Level 1 - Base case
    - Level 2 - Scenario X, modeled by increased Planning Reserve Margin
    - Level 3 (e.g. higher load)
- Based on generic pricing, Recommended/Preferred Portfolio has potential for:
  - ___ MW new clean energy
  - ___ MW from dispatchable (resource that can be called upon at anytime that is needed)
  - ___ MW storage
  - ___MW Demand Side Resources

Do Stakeholders Agree with the SPS Resource Need Analysis?

SoN Agreement Check

- Are the quantity and type of new capacity needs appropriate for the 2028-2030 timeframe?
  - 4281-6631 MW of variable renewable generation
  - 1043-4290 MW of dispatchable resources
- Do you agree with this characterization of the resource need?

- If you do not agree, please speak up, as we want to understand your views.

A Reminder Regarding Other Stakeholder Input...

For the full document, see [Statement of Need ELEMENTS July 24.docx (gridworks.org)]

- The objectives we're trying to solve for:
  - Cost effective resource portfolio
  - Meet the RPS requirements
  - Meet projected load growth and secure replacement energy and capacity for retiring resources
  - Reliability and resiliency
  - Robust energy system that furthers diverse economic development in the state
  - Meet evolving resource adequacy requirements
  - Ensuring affordability to all SPS customers, including residential and low-income customers, as the system transitions
  - Providing a just and orderly transition for workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements.
  - Engaging customers to help the utility reliably serve during grid constrained events

Next Steps in Consideration of Stakeholder Input

SPS - please share your next steps in consideration of the stakeholder input to the IRP.

Guidance Regarding the Action Plan

Per the IRP Rule, 17.7.3.11 utility's action plan shall:

1) detail the specific actions the utility shall take to implement the IRP spanning a three-year period following the filing of the utility's IRP;
2) detail the specific actions the utility shall take to develop any resource solicitations or contracting activities to fulfill the statement of need as accepted by the commission; and
3) include a status report of the specific actions contained in the previous action plan

Action Plan Suggestions from Stakeholders

From the SoNIC – engage customers to help the utility reliably serve all during grid constrained events, including new rate structures.

Via email on 9/8 - The end result of any plan or recommended action should ensure reliability, affordability and resiliency. If affordability and dispatchability is not serious consider you haven't done your job.

I want to see SPS address in their action plan how they will ensure system reliability and resiliency. Affordability to consumers and a continued investment in our Local Communities.

…suggests that Xcel prioritize they will ensure system reliability and resiliency as well as continued expansion of and investment in the electrical grid serving Eddy County. Our county's industrial base continues to expand, and the infrastructure for the needs of this growth must be proactive to ensure its sustainability.

Analysis / study of how to reduce O&G connected load through voluntary program(s).

Analysis / study of interruptible tariff(s) for high-tech and other loads.

SPS Suggested Action Plan Items

- Develop All Source RFP for resource need in the 2028-2030 time frame
- Engage Independent Evaluator per NMPRC rules
- Develop RFP bid evaluation documents, including reliability assessments and fuel security
- Select portfolio of resources for the 2028-2030 time frame based on bid evaluation
- File CCN/PPA approval

SPS is considering:

- Develop RFI for long-lead time emerging tech resources ahead of next IRP cycle
- Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate

Proposed Framework for Action Plan Items

Next Steps in the Process

- **Oct. 3: 1:30 PM – 3:30 PM,** Meeting #7 via Zoom. Focus is the Action Plan.
- Oct. 13 – IRP is filed by SPS.
- Oct. 26: 2 PM – 3:30 PM, Meeting #8. Focus is feedback on stakeholder process.

Gridworks report to the NM PRC is to be delivered by Jan. 31, 2024. It will include results of both NM IRP Facilitated Stakeholder Processes (SPS and PNM).

Your Feedback is Critical

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...please:

Scan the QR Code to the right

OR

Visit this link:
bit.ly/SPS-IRP-Feedback

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Thank you for attending.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

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Materials for this and future meetings available at: [Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks]
or
https://gridworks.org/initiatives/new-mexico-energy-planning/

Proposed Framework for Action Plan Items

SPS SUGGESTED ACTION PLAN ITEMS

COMMON ITEMS

STAKEHOLDER SUGGESTED ACTION PLAN ITEMS

SPS ITEMS

- Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions
- Engage Independent Evaluator per NMPRC rules
- Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security.
- Select portfolio of resources for the 2028-2030 time frame based on bid evaluation
- File CCN/PPA approval
- Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle
- Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate

COMMON ITEMS

- Evaluate existing generation life extensions for SPS owned units
- Priority of reliability, resiliency and affordability…Actions TBD
- Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate….add elements from SH list
- Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle (under SPS internal consideration)
- Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions
- Engage Independent Evaluator per NMPRC rules
- Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security.
- Select portfolio of resources for the 2028-2030 time frame based on bid evaluation
- File CCN/PPA approval

STAKEHOLDER ITEMS

- The end result should ensure reliability, affordability and resiliency. If affordability and dispatchability is not serious consider you haven't done your job.
- I want to see SPS address in their action plan how they will ensure system reliability and resiliency. Affordability to consumers and a continued investment in our Local Communities.
- …suggests that Xcel prioritize they will ensure system reliability and resiliency as well as continued expansion of and investment in the electrical grid serving Eddy County.
- Analysis / study of how to reduce O&G connected load through voluntary program(s) and/or Special Service contracts. (question: other large loads beyond O&G)
- Analysis / study of interruptible tariff(s) for high-tech and other loads.
- engage customers to help the utility reliably serve all during grid constrained events, including new rate structures.
- Explore PPA extensions.
- Determine value of demand response (based on modeled scenario) and initiate a stakeholder process to design an appropriate DR program.
- Load mgt time of use – pursue time varying rates as part of grid modernization.
- Include fugitive methane emissions in the upcoming RFP analysis.
- Compare EE procurements through the established three-year EE plan review process with the assumptions in the IRP modeling effort.
- Include carbon emissions in RFP evaluation criteria.
- Conduct an independent analysis of life cycle emissions relevant to NM electric utilities (might require legislation)
- Incorporate the contributions from the SPS Grid Mod and EE/DR proceedings into the IRP.

TO: Ben Elsey and Jay Griffin
CC: Margie Tatro
FROM: Ed Rilkoff and Cynthia Mitchell
RE: SPS SoN ppt deck for Sept 13, 2023 meeting
DATE: September 12, 2023

Thank you for the early review of SPS' proposed SoN. We appreciate how forthcoming SPS has been throughout this process.

Slide 8 asks whether stakeholders agree with the SPS Resource Need Analysis, specifically, whether the quantity and type of **new** capacity needs are appropriate for the 2028-2030 timeframe. (bold emphasis added).

- 4281-6631 MW of variable renewable generation
- 1043-4290 MW of dispatchable resources[1]

The multi-jurisdictional forecast range -- 5,324 to 10, 921 MW – calls for substantial capacity additions in a short period of time. Capacity need is driven by two key factors: accelerated retirements of a large portion of SPS' existing coal and gas generation fleet, and significant load growth – high tech and O&G (new and electrification).

Staff does **not** support an RFP for the 2028-2030 period that includes the high forecast electrification numbers.

Per SPS' slide 9, Objective 7, Staff agrees that "Ensuring affordability to all SPS customers, including residential and low-income customers, as the system transitions", is critical.

To this end, Staff offers two recommendations:

1. To the extent feasible and cost-effective, SPS should extend / renew expiring gas and renewable PPAs, and its own fleet of gas generation.
2. SPS should include in its action plan Staff's requests provided to SPS and Gridworks in a separate email 9/12/23:
    a. Analysis / study of how to meet O&G connected load through Special Service Contracts.
    b. Analysis / study of interruptible tariff(s) for high-tech and other loads.

Staff may support the mid-range planning forecast at this time recognizing that we take all analyses including but not limited to the load forecasts, the production costing and reliability modeling, and the O&G electrification study, at face value.

[1] SPS slide 7, second bullet point, lists dispatchable and storage separately. Per slide 8, please clarify that LDS is included as a dispatchable resource.

Gridworks-provided Chat Log from Meeting

00:22:20 Deborah Shields - Gridworks: https://gridworks.org/initiatives/xcel-sps/
00:33:53 Deborah Shields - Gridworks: https://gridworks.org/wp-content/uploads/2023/08/Statement-of-Need-ELEMENTS-July-24.docx.pdf
00:48:26 Austin Rueschhoff: Has the referenced Staff memo been shared with all stakeholders? Sorry if I missed that somewhere.
00:50:27 Austin Rueschhoff: Thanks!
00:56:49 John Dailey (NextEra): Sorry - I'm on a bus and not able to weigh in verbally. We believe the book ends look reasonable.
01:06:37 Deborah Shields - Gridworks: Short Break - resume in 11 minutes
01:30:23 Athena Christodoulou: Action Plan - Considers affordability, reliability, and future viability with respect to reduced cradle to end-of-life greenhouse gas emissions (ie. No new fossil fuel infrastructure, don't count on CCS, retire gas early) Fugitive methane emissions must be assessed at least 120 times more warming potential than CO2.
02:39:45 Athena Christodoulou: All for some RFIs. yes carbon free...add thermal energy storage to possibilities
02:41:08 Athena Christodoulou: Resources need to be assessed from cradle through generation
02:41:24 Athena Christodoulou: With respect to environmental impacts
03:04:21 Athena Christodoulou: Add a grid modernization plan (overall) for next IRP
03:11:12 Cynthia Mitchell: Incorproprate the contributions from the SPS Grid Mod and EE/DR proceedings into the IRP.
03:31:15 Athena Christodoulou: Thank you SPS and Gridworks.
03:31:55 Deborah Shields - Gridworks: bit.ly/SPS-IRP-Feedback

Link to Video Recording

https://youtu.be/gWtuS6tBbDw

October 3, 2023 Stakeholder Meeting

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Meeting #7, Oct 3 2023

Xcel Energy/Southwestern Public Service Company's Integrated Resource Plan

MEETING SUMMARY

Approximately 18 stakeholder representatives from 13 different organizations plus a team of SPS/Xcel Energy professionals attended a meeting focused on reviewing stakeholder input to Xcel Energy/SPS's Integrated Resource Plan. (Note that two additional attendees from unknown organizations attended and are not included in the numbers above.) The purpose of the meeting was to assess the level of agreement on SoN and the Action Plan.

A recording of the meeting is available at: https://youtu.be/PneLwi6geTM

Meeting materials (listed below) are available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks

- **Slide Deck – Gridworks IRP 10/3/23 Stakeholder Engagement Meeting**
- **Slide Deck – Xcel Energy/SPS SoN and Action Plan 10/2/23**
- **Action Plan Mapping Worksheet – post meeting doc 9/13/23** (Note that a more current version of the action plan mapping is included in the Xcel Energy Slide deck listed above.)

Statement of Need (SoN)

The SPS team reviewed elements of the utility's SoN and commented on how the concerns and requests from stakeholders were addressed. The four key issues were:

- clarifying which "dispatchable" resources are contributing to capacity need
- request to avoid new fossil-based resources
- mid- and high-end ranges of resource need
- range of demand side resources

Stakeholders who raised these issues (if present) were asked if they were satisfied with the treatment of the issue. All stakeholders were provided the opportunity to comment. The first issue was resolved and the second was not resolved (as the concerned stakeholder was not present). On the third issue, the stakeholder is currently non-committal, and Xcel has committed to update their demand projections during development of the all-source RFP, including refining the range of resource needs if appropriate based on the new forecast. On the fourth issue, the concerns were not yet resolved, but SPS committed to following up with two stakeholder organizations prior to filing the IRP regarding the treatment of demand response resources in the SoN. One stakeholder requested information on how stakeholder requested modeling runs and results will be incorporated into the IRP. SPS will initiate a discussion with this stakeholder prior to IRP filing.

Action Plan

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SPS provided an update on elements of the Action Plan, including many stakeholder suggestions that were offered at the Sept. 13 meeting. Stakeholder suggestions that were not adopted were also described. When asked, no stakeholder raised objections to the list of “unadopted” actions.

Stakeholders were provided with opportunities to ask questions and provide comments on the action plan suggestions that are being considered. One stakeholder asked if analysis of transmission needs is appropriate in the 3-year action plan period. SPS responded that there will be additional reliability/resiliency analyses to review transmission needs during the RFP process.

Gridworks suggested the development of a summary and timeline of action items to assist stakeholders' understanding of how the actions fit with regulatory processes.

Next Steps

Additional stakeholder comments on the SoN and Action Plan can be emailed to INFO@Gridworks.org before 12 NOON MDT on Friday, Oct. 6. Please include the words “SPS IRP” in subject line of the email. This information will be documented and posted on the Gridworks website under the Oct. 3 meeting materials.

SPS noted that the content of both the SoN and Action Plan is not finalized and that the material presented during the meeting is subject to SPS Internal Review and Final Executive Approvals. SPS will be processing stakeholder input as they prepare the IRP for filing on Oct. 13.

The schedule of events that follow the IRP filing was presented. Stakeholders were encouraged to stay involved in the subsequent steps. SPS and Gridworks offered appreciation for the stakeholder engagement in this important process and invited feedback on both this meeting as well as the overall 6-month Facilitated Stakeholder Process.

Final Meeting for the Facilitated Stakeholder Process

The final meeting of this process is scheduled for Oct. 26 from 2 PM – 3:30 PM. The focus is feedback on the six-month process. It will include questions such as:

- What worked well for you during this facilitated stakeholder process?
- What changes do you suggest for future IRP processes?

Input is welcome during the meeting on Oct. 26 or via email to INFO@gridworks.org any time before November 10. Please include the words “SPS FSP FEEDBACK” in the subject line.

Meeting Feedback

Participants were given time to complete an on-line meeting survey.

ACTION REQUEST: For those who completed the survey, thank you. The survey instrument is available anytime (see below). Please take a few minutes to provide your feedback.

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Please Access and Complete the Survey Now

Feedback allows us to:
1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...by either:

Scanning the QR Code to the right

OR

Visiting this link: bit.ly/SPS-IRP-Feedback

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Xcel Energy®
SOUTHWESTERN PUBLIC SERVICE COMPANY
2023 New Mexico integrated resource plan
October 3, 2023
REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL
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Statement of Need – 2030 Resource Needs

There are resource needs by 2027 that are currently being addressed by the 2021 IRP Action Plan. SPS/Xcel Energy also has capacity need ranging from 1,760 to 3,963 MWs by 2028-2030, depending on planning assumptions. This translates to a resource need ranging 5,314 MW to 10,211 MW, depending on planning assumptions and the nature of resources modeled to meet the capacity need. These needs require commencement of the resource procurement process as soon as possible. Key inputs to the planning assumptions underlying the capacity needs and resources projected to fill such capacity needs are:

- Load Forecasts:
    1. Planning
    2. Electrification and emerging technologies
    3. Financial
- Technology Cases:
    1. Multi-jurisdictional Baseline ("MJB"),
    2. Existing Commercially Available Carbon Free Dispatchable Technology Resources ("ET"),
    3. Long Duration Storage,
    4. Gas-to-hydrogen Conversion

- Based on generic pricing, Recommended/Preferred Portfolio has potential for:
    - A range of 4,271 to 6,631 MW of new clean energy resources (wind/solar)
    - A range of 1,043 to 4,290 MW from dispatchable resources (i.e., resources that can be called upon at anytime)
    - Dispatchable storage resources range from 10 to 4,290 MW (depending on planning assumptions)

Projects bid into the RFP and selected through the resource procurement process will determine the most effective cost portfolio that SPS ultimately identifies.

Statement of Need – 2030 Resource Needs

	Resources Added 2028-2030 (Nameplate Capacity)						
	Dispatchable				Variable Energy Resources		
	Firm Peaking	CC	Storage	Total	Wind	Solar	Total
Financial Forecast							
15% PRM							
Multi-Jurisdictional Baseline*	933	-	130	**1,063**	3,390	1,021	**4,411**
Existing Technologies	-	-	1,380	**1,380**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,280	**1,280**	3,500	1,091	**4,591**
Hydrogen Conversion	933	-	110	**1,043**	3,250	1,021	**4,271**
18%/20% PRM							
Existing Technologies	-	-	1,670	**1,670**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,540	**1,540**	3,500	1,091	**4,591**
Hydrogen Conversion	933	-	410	**1,343**	3,500	1,021	**4,521**
Planning Forecast							
15% PRM							
Multi-Jurisdictional Baseline*	700	837	100	**1,637**	3,500	1,301	**4,801**
Existing Technologies	-	-	2,220	**2,220**	3,500	1,021	**4,521**
Long Duration Storage	-	-	1,980	**1,980**	3,500	1,831	**5,331**
Hydrogen Conversion	933	837	170	**1,940**	3,500	1,051	**4,551**
18%/20% PRM							
Existing Technologies	-	-	2,530	**2,530**	3,500	1,021	**4,521**
Long Duration Storage	-	-	2,310	**2,310**	3,500	1,771	**5,271**
Hydrogen Conversion	933	837	360	**2,130**	3,500	1,021	**4,521**
Electrification & Emerging Technologies							
15% PRM							
Multi-Jurisdictional Baseline*	933	2,511	10	**3,454**	3,500	1,211	**4,711**
Existing Technologies	-	-	3,810	**3,810**	3,500	2,271	**5,771**
Long Duration Storage	-	-	3,260	**3,260**	3,500	3,011	**6,511**
Hydrogen Conversion	933	837	1,580	**3,350**	3,500	1,341	**4,841**
18%/20% PRM							
Existing Technologies	-	-	4,290	**4,290**	3,500	2,371	**5,871**
Long Duration Storage	-	-	3,580	**3,580**	3,500	3,131	**6,631**
Hydrogen Conversion	933	837	1,990	**3,760**	3,500	1,021	**4,521**

**Multi-jurisdictional baseline provides information for SPS's other jurisdictions and does not incorporate New Mexico's Energy Transition Act. ET, LDS, HC as shown in this table are all NM ETA compliant.*

REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Statement of Need – Planning Period

The resource needs through the Planning Period (2028 – 2043) are projected to range from12,595 MW and 23,610 MW, depending on the following planning assumptions:

- Load Forecasts:
    1. Planning
    2. Electrification and emerging technologies
    3. Financial

- Technology Cases:
    1. Multi-jurisdictional Baseline (“MJB”),
    2. Existing Commercially Available Carbon Free Dispatchable Technology Resources (“ET”),
    3. Long Duration Storage,
    4. Gas-to-hydrogen Conversion

Based on generic pricing, Recommended/Preferred Portfolio has potential for:

- 7,799 to 13,859 MW of new clean energy resources
- 4,470 to 11,200 MW from dispatchable resources (i.e., resources that can be called upon at anytime)
- Dispatchable storage resources range from 130 to 11,200 MW (depending on planning assumptions)

Statement of Need – Planning Period

	Resources Added 2028-2043 (Installed Capacity)							
	Dispatchable				Variable Energy Resources			
	Firm Peaking	CC	Storage	Sub Total	Wind	Solar	Sub Total	Grand Total
Planning Forecast								
MJB	4,899	837	390	**6,126**	6,120	4,209	**10,329**	**16,455**
ET	-	-	10,390	**10,390**	9,840	2,769	**12,609**	**22,999**
LDS	-	-	6,000	**6,000**	10,210	3,649	**13,859**	**19,859**
HC	933	837	7,090	**8,860**	9,640	2,799	**12,459**	**21,299**
Electrification & Emerging Technologies								
MJB	3,500	2,511	570	**6,580**	5,700	3,869	**9,569**	**16,149**
ET	-	-	11,200	**11,200**	8,730	3,680	**12,410**	**23,610**
LDS	-	-	6,530	**6,530**	9,080	4,759	**13,839**	**20,369**
HC	933	837	8,140	**9,910**	8,740	2,750	**11,490**	**21,400**
Financial Forecast								
MJB	4,666	-	130	**4,796**	4,740	3,059	**7,799**	**12,595**
ET	-	-	7,960	**7,960**	7,720	2,769	**10,489**	**18,449**
LDS	-	-	4,470	**4,470**	8,140	2,839	**10,979**	**15,449**
HC	933	837	4,710	**6,480**	7,080	2,769	**9,849**	**16,329**

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REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Statement of Need
Objectives

- Reliability and resiliency
- Cost effective resource portfolio
- Meet the RPS requirements to the best of ability while considering affordability and system reliability
- Meet projected load growth and secure replacement energy and capacity for retiring resources Robust energy system that furthers diverse economic development in the state
- Meet evolving resource adequacy requirements
- Ensuring affordability to all SPS customers, including residential and low-income customers, as the system transitions
- Providing a just and orderly transition for workforce, customers, and communities, including consideration of replacement generation in communities affected by accelerated retirements.
- Engaging customers to help the utility reliably serve during grid constrained events

Action Plan Items – as of 9/13/23 Stakeholder Meeting

SPS Suggested Action Plan Items

Common Items

Stakeholder Suggested Action Plan Items

SPS Items	COMMON ITEMS	STAKEHOLDER ITEMS
• Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions • Engage Independent Evaluator per NMPRC rules • Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security. • Select portfolio of resources for the 2028-2030 time frame based on bid evaluation • File CCN/PPA approval • Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle • Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate	• Evaluate existing generation life extensions for SPS owned units • Priority of reliability, resiliency and affordability…Actions TBD • Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate….add elements from SH list • Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle (under SPS internal consideration) • Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions • Engage Independent Evaluator per NMPRC rules • Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security. • Select portfolio of resources for the 2028-2030 time frame based on bid evaluation • File CCN/PPA approval	• The end result should ensure reliability, affordability and resiliency. If affordability and dispatchability is not serious consider you haven't done your job. • I want to see SPS address in their action plan how they will ensure system reliability and resiliency. Affordability to consumers and a continued investment in our Local Communities. • …suggests that Xcel prioritize they will ensure system reliability and resiliency as well as continued expansion of and investment in the electrical grid serving Eddy County. • Analysis / study of how to reduce O&G connected load through voluntary program(s) and/or Special Service contracts. (question: other large loads beyond O&G) • Analysis / study of interruptible tariff(s) for high-tech and other loads. • engage customers to help the utility reliably serve all during grid constrained events, including new rate structures. • Explore PPA extensions. • Determine value of demand response (based on modeled scenario) and initiate a stakeholder process to design an appropriate DR program. • Load mgt time of use – pursue time varying rates as part of grid modernization. • Include fugitive methane emissions in the upcoming RFP analysis. • Compare EE procurements through the established three-year EE plan review process with the assumptions in the IRP modeling effort. • Include carbon emissions in RFP evaluation criteria. • Conduct an independent analysis of life cycle emissions relevant to NM electric utilities (might require legislation) • Incorporate the contributions from the SPS Grid Mod and EE/DR proceedings into the IRP.

REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Action Plan Items – Adjusted per Stakeholder Discussion

SPS Suggested Action Plan Items

SPS Items

- Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions
- Engage Independent Evaluator per NMPRC rules **
- Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security.
- Select portfolio of resources for the 2028-2030 time frame based on bid evaluation
- File CCN/PPA approval
- Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle
- Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate

**Please note the Commission engages Independent Monitor and SPS works with IM through RFP process

Common Items

COMMON ITEMS

- Evaluate existing generation life extensions for SPS owned units
- Priority of reliability, resiliency and affordability…Actions TBD
- Evaluate Demand Response options, including Interruptible Credit Option, and request regulatory approval where appropriate….add elements from SH list
- Develop RFI for long-lead time emerging dispatchable, tech resources ahead of next IRP cycle (under SPS internal consideration)
- Develop All Source RFP for resource need in the 2028-2030 time frame including PPA extensions
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- Develop RFP bid evaluation documents, including reliability and resiliency assessments and fuel security.
- Select portfolio of resources for the 2028-2030 time frame based on bid evaluation
- File CCN/PPA approval
- Include Interruptible tariff request in upcoming Energy Efficiency Reconciliation Filing
- Once approved, evaluate Renewable*Connect Voluntary Program for large industrial customers and analyze whether to expand the program and analyze other possible program offerings
- SPS currently has time varying rates. However, SPS will conduct a TOU Study per Rate Case Stipulation

Stakeholder Suggested Action Plan Items

STAKEHOLDER ITEMS

- The end result should ensure reliability, affordability and resiliency. If affordability and dispatchability is not serious consider you haven't done your job.
- I want to see SPS address in their action plan how they will ensure system reliability and resiliency. Affordability to consumers and a continued investment in our Local Communities.
- …suggests that Xcel prioritize they will ensure system reliability and resiliency as well as continued expansion of and investment in the electrical grid serving Eddy County.
- Analysis / study of how to reduce O&G connected load through voluntary program(s) and/or Special Service contracts. (question: other large loads beyond O&G)
- Analysis / study of interruptible tariff(s) for high-tech and other loads.
- engage customers to help the utility reliably serve all during grid constrained events, including new rate structures.
- Explore PPA extensions.
- Determine value of demand response (based on modeled scenario) and initiate a stakeholder process to design an appropriate DR program.
- Load mgt time of use – pursue time varying rates as part of grid modernization.
- Include fugitive methane emissions in the upcoming RFP analysis.
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REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Stakeholder Suggested Action Plan Items

Action Plan Items – Unadopted Items and Discussion of Rationale

STAKEHOLDER ITEMS
•~~The end result should ensure reliability, affordability and resiliency. If affordability and dispatchability is not serious consider you haven't done your job.~~
•~~I want to see SPS address in their action plan how they will ensure system reliability and resiliency. Affordability to consumers and a continued investment in our Local Communities.~~
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•Analysis / study of how to reduce O&G connected load through ~~voluntary program(s)~~ and/or Special Service contracts. (question: other large loads beyond O&G) (Category 1)
•~~Analysis / study of interruptible tariff(s) for high-tech and other loads.~~
•engage customers to help the utility reliably serve all during grid constrained events, including new rate structures. (Category 2)
•~~Explore PPA extensions.~~
•Determine value of demand response (based on modeled scenario) and initiate a stakeholder process to design an appropriate DR program. (Category 2)
•~~Load mgt time of use – pursue time varying rates as part of grid modernization~~.
•Include fugitive methane emissions in the upcoming RFP analysis. (Category 3)
•Compare EE procurements through the established three-year EE plan review process with the assumptions in the IRP modeling effort. (Category 2)
•Include carbon emissions in RFP evaluation criteria. (Category 3)
•Conduct an independent analysis of life cycle emissions relevant to NM electric utilities (might require legislation) (Category 3)
•Incorporate the contributions from the SPS Grid Mod and EE/DR proceedings into the IRP. (Category 2)

1. Category 1: Requires more discussion in future forums
2. Category 2: Addressed through other Commission proceedings
3. Category 3: Legal and Regulatory Issues/Considerations with Request

REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Welcome!

Stakeholder Engagement Workshop
Meeting #7

2023-2043 Integrated Resource Plan, Southwestern Public Service Company

1:30 PM - 3:30 PM, Oct. 3, 2023

Read-ahead materials available at:

https://gridworks.org/initiatives/xcel-sps/ or Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks,

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Note: this meeting is being recorded. A link to the recording will be included in the meeting summary and posted on the GRIDWORKS website.

The Agenda for this Meeting

1:30 PM	Welcome, Meeting Purpose and Outcomes
1:40 PM	Update on SoN, Discussion, Identification of Agreements and Unresolved Issues
2:30 PM	Break
2:40 PM	Update on Action Plan, Discussion, Identification of Agreements and Unresolved Issues
3:20 PM	Summary of Next Steps, Meeting Feedback Request
3:30 PM	Adjourn

Purpose and Outcomes for the Workshop

Purpose:

- Update stakeholders on SoN and Action Plan, Assess level of agreement on both
- Prepare stakeholders to provide feedback on overall process

Update from SPS on SoN

Presentation by SPS regarding SoN.

Questions from stakeholders as they arise.

Stakeholder Comments Regarding SoN

Were the issues raised previously by stakeholders addressed in the updated SoN?

- clarifying which "dispatchable" resources are contributing to capacity need
- fossil-based resource response
- mid- and high-end ranges of resource need
- range of demand side resources

Are the stakeholders who raised these issues satisfied with the way they were addressed?

Do stakeholders have additional concerns or comments?

Update from SPS on Action Plan

Presentation by SPS regarding Action Plan.

Questions from stakeholders as they arise.

Stakeholder Commentary Regarding the Action Plan

Is the language for the common items acceptable? Is each item clear regarding what it entails?

Were the issues raised previously by stakeholders addressed in the updated Action Plan?

Do stakeholders have comments regarding the unadopted list of action plan items?

Do stakeholders have any concerns or comments?

Would stakeholders find value in a summary of actions, a timeline, and other proceeding references related to the action plan items?

Action Plan Items – Adjusted per Stakeholder Discussion

SPS Suggested Action Plan Items

SPS Items

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Stakeholder Suggested Action Plan Items

STAKEHOLDER ITEMS

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REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Stakeholder Suggested Action Plan Items

Action Plan Items – Unadopted Items and Discussion of Rationale

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REPRESENTATIONS SUBJECT TO SPS INTERNAL REVIEW AND FINAL EXECUTIVE APPROVAL

Summary of Discussion

SPS closing comments

- what issues in the SoN and Action Plan are resolved?
- are there any unresolved topics?
- how will stakeholders be informed of "future forums" of interest?

Any additional stakeholder comments on the SoN and Action plan can be emailed to INFO@Gridworks.org before 12 NOON MDT on Friday, Oct. 6. **Please include the words "SPS IRP" in subject line of the email.**

Next Steps in the Process

Stakeholder Process

- Oct. 6: NOON, stakeholder comments on SoN and Action Plan emailed to INFO@Gridworks.org. Please include the words "SPS IRP" in subject line.
- Oct. 26: 2 PM – 3:30 PM, Meeting #8. Focus is feedback on stakeholder process.
- Jan. 31: Gridworks report delivered to the NM PRC

IRP Process

- Oct. 13: SPS files the 2023 IRP
- 30 days after filing – written public comments filed (Nov. 13)
- 60 days after filing – SPS written response to public comments (Dec. 13)
- 90 days after filing – PRC Utility Division files statement regarding compliance of SoN and Action Plan with the IRP rule (Jan. 13)
- 120 days after filing – if the commission has not acted, the SoN and Action Plan are deemed compliant (Feb. 13)
- See the IRP rule for more details on RFP process.

THERE WILL BE OTHER OPPORTUNITIES FOR STAKEHOLDERS TO ENGAGE IN FOLLOW-ON ACTIVITIES (ACTION PLAN ITEMS, RFP PROCESSES, ETC.)

Stakeholder Feedback on the Process Over the Past 6 Months

Next (& final) Meeting Oct. 26 - 2 PM - 3:30 PM

- What worked well for you?
- What changes do you suggest for future IRP processes?
- All input is appreciated.

Input welcome during the meeting on Oct. 26 or by email to INFO@gridworks.org before November 10. Please include the words "SPS FSP FEEDBACK" in the subject line.

Your Feedback Regarding Today's Meeting is Critical

Feedback allows us to:

1. Measure effectiveness of this new process for the NM PRC
2. Improve Gridworks' facilitation effectiveness
3. Hear your concerns and suggestions

...please:

Scan the QR Code to the right

OR

Visit this link:
bit.ly/SPS-IRP-Feedback

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Thank you for your engagement and contributions to this process.

Questions? Please contact Margie Tatro at:
mtatro@gridworks.org
505-205-0838
or Deborah Shields at INFO@gridworks.org

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Materials for this and future meetings available at: Xcel Energy/Southwestern Public Service Company (SPS) – Gridworks
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https://gridworks.org/initiatives/new-mexico-energy-planning/

Gridworks-provided Chat Log from Meeting

00:51:04 Gridworks: https://gridworks.org/initiatives/xcel-sps/
01:04:15 Linda Hudgins: Apologies. I was disconnected
01:11:20 Cynthia Mitchell: Re. Mid- and high-end ranges of resource need:
01:20:34 Cynthia Mitchell: Staff is noncommittal as to whether the upper end of the MW range (10,000 MW) is the quantity of new capacity appropriate for the 2028-2030 timeframe. Staff looks forward to the SPS update(s) to its load forecast, including the O&G loads, and more information regarding possible extensions of existing gas generation and PPA renewals prior to the issuance of its 2024 RFP in June or July.
01:28:07 Cynthia Mitchell: Staff supports SWEEPs comments re DSM and appreciate Zoey’s offer to discuss with Michael how to frame it in the IRP
01:33:22 Hall, James A: I did have a quick transmission question
01:42:15 Gridworks: We are taking a short break - be back in 6 minutes
01:48:51 Gridworks: Welcome back
01:56:06 Cynthia Mitchell: I have a question evaluation of extension of existing ga
02:06:16 Cynthia Mitchell: Staff appreciates SPS’ assignment of Category 1 to our action item request for analyze/study to how to serve O&G loads via Special Service contracts or other mechanisms.
02:07:56 Brooke Trammell - Xcel Energy (SPS): Reacted to "Staff appreciates SP..." with
02:15:45 Cynthia Mitchell: I believe these questions are most relevant to the SoN. These do not need to be discussed now but just noted please.
Staff has the following requests for additional information and data, to be included either in their IRP or provided after the filing.
1. For the Financial Forecast 5000 MW 2030, how much is for fossil fuel replacement under the ETA.
2. What is the revenue req in the MJB case from 8/29/23.
3. What are the O&G loads in Planning Forecast.
4. In total, what are the O&G loads by existing energy processes with growth distinct from electrification.
02:38:13 Gridworks: Bit.ly/SPS-IRP-Feedback

October 3, 2023

Link to recorded meeting

https://youtu.be/PneLwi6geTM

Appendix N

Applicable Electric Utility IRP Rule Requirements and Where Addressed in SPS's Filing

Southwestern Public Service Company
Applicable Electric Utility IRP Rule Requirements and Where Addressed in SPS's Filing

NMAC	Requirement	Where Addressed
17.7.3.8	**INTEGRATED RESOURCE PLANS FOR ELECTRIC UTILITIES**	
A.	A public utility supplying electric service to customers shall file with the commission every three years a proposed integrated resource plan (IRP) to meet the service needs of its customers over the planning period. The plan shall show the resource options the utility intends to use to meet those needs. The plan shall also specify how the implementation and use of those resource options would vary with changes in supply and demand. The utility is only required to identify a resource option type, unless a commitment to a specific resource exists at the time of the filing. The utility shall also discuss any plans to reduce emissions from existing resources through sales, leases, deratings, or retirements.	IRP Filed October 13, 2023
B.	The IRP submitted to the commission by an electric utility shall contain the utility's New Mexico jurisdictional information as follows:	
1.	description of existing resources, see Appendix A;	Section 3
2.	current load forecast, see Appendix A;	Section 4
3.	load and resources table, see Appendix A;	Section 5
4.	new load and facilities arising from special service agreements, economic development projects, and affiliate transactions;	Section 6
5.	identification of resource options, see Appendix A;	Section 7
6.	statement of need, see 17.7.3.10 NMAC;	Section 8
7.	determination of the resource portfolio, see Appendix A; and	Section 9
8.	action plan, see 17.7.3.11 NMAC.	Section 10
C.	The utilities shall file their IRP on a staggered schedule, as follows:	
2.	Southwestern public service company shall file an IRP pursuant to 17.7.3.8 NMAC on or before September 1, 2024.	IRP Filed October 13, 2023
	APPENDIX A	
	DESCRIPTION OF EXISTING RESOURCES:	
A.	The mandate of the energy transition act to incorporate 80% renewable energy onto the grid by 2040 requires utilities operating in New Mexico to develop flexible management of grid resources. Utilities may categorize resources into the following four functional groups to reflect their role in serving this need:	
(1)	load modifying resources – includes but not limited to energy efficiency, distributed generation, and time of use tariffs;	Subsections 3.06, 3.07
(2)	renewable load serving resources – includes both utility scale solar and wind technologies;	Subsections 3.02, 3.03
(3)	conventional load serving resources – includes coal, nuclear, and gas technologies; and	Subsection 3.02
(4)	grid balancing resources – includes demand response, storage technologies, natural gas combustion engines, and reciprocating engines.	Subsections 3.02, 3.03
B.	The utility's description of its existing resources used to serve its jurisdiction load shall include:	
(1)	name(s) and location(s) of utility-owned generation facilities;	Subsection 3.02
(2)	rated capacity of utility-owned generation facilities;	Subsection 3.02
(3)	fuel type, heat rates, annual capacity factors, and availability factors projected for utility-owned generation facilities over the planning period;	Subsection 3.02
(4)	cost information, including capital costs, fixed and variable operating and maintenance costs, fuel costs, and purchased power costs;	Subsection 3.02, Appendix A
(5)	existing generation facilities' expected retirement dates;	Subsection 3.02
(6)	amount of capacity obtained or to-be-obtained through existing purchased power contracts or agreements relied upon by the utility, including the fuel type, if known, and contract duration;	Subsection 3.03
(7)	estimated in-service dates for utility-owned generation facilities for which certificates of public convenience and necessity (CCN) have been granted but which are not in-service;	Subsection 3.04
(8)	amount of capacity and, if applicable, energy purchased via the utility's participation in regional energy markets;	Subsection 3.05
(9)	description of existing demand-side resources, including:	Subsection 3.06
(a)	demand-side resources deployed at the time the IRP is filed; and	Subsection 3.06
(b)	demand-side resources approved by the commission, but not yet deployed at the time the IRP is filed;	Subsection 3.06
(i)	information provided concerning existing demand-side resources shall include, at a minimum, the expected remaining useful life of each demand-side resource and the energy savings and reductions in peak demand, as appropriate, made by the demand-side resource;	Subsection 3.06

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NMAC	Requirement	Where Addressed
(10)	description of each existing energy storage resource, including energy storage resources approved but not yet deployed at the time the IRP is filed, and at a minimum, the expected remaining useful life of the resource, its maximum capacity, dispatch characteristics, and operating costs;	Subsection 3.08
(11)	reserve margin and reserve reliability requirements with which the utility must comply, and the methodology used to calculate its reserve margin;	Subsection 3.09
(12)	existing transmission capabilities:	Subsection 3.10
(a)	the utility shall report its existing and under-construction transmission facilities of 115 kV and above, including associated switching stations and terminal facilities;	
(b)	the utility shall specifically identify the location and extent of transfer capability limitations on its transmission network that may affect the future siting of supply-side resources; and	Subsection 3.10
(c)	the utility shall describe all transmission planning or coordination groups to which it is a party, including state and regional transmission groups, transmission companies, and coordinating councils with which the utility may be associated;	Subsection 3.10
(13)	existing distribution capabilities:	Subsection 3.11
(a)	the utility shall report its existing distribution facilities, under-construction distribution facilities, or distribution facilities approved but not-yet-deployed at the time the IRP is filed, including all substations, switching stations, power lines and other equipment, below 115 kV, including associated transformers and feeder lines;	Subsection 3.11
(b)	the utility shall specifically identify the location and extent of capability limitations on its distribution network that may affect the future siting of distributed energy resources; and	Subsection 3.11
(c)	the utility shall describe all distribution planning or coordination groups to which it is a party;	Subsection 3.11
(14)	details of any planned or anticipated transmission and distribution network upgrades;	Subsection 3.12
(15)	environmental impacts of existing supply-side resources:	Subsection 3.13
(a)	the utility shall provide the percentage of megawatt-hours generated by each fuel used by the utility on its existing system for the latest year for which such information is available;	Subsection 3.13
(b)	to the extent feasible, for each existing supply-side resource on its system, the utility shall present emission rates (expressed in pounds emitted per megawatt-hour generated) of criteria pollutants as well as carbon dioxide and mercury; and	Subsection 3.13, Table 3-11
(c)	to the extent feasible, for each existing supply-side resource on its system, the utility shall present the water consumption rate;	Subsection 3.13, Table 3-11
(16)	a summary of back-up fuel capabilities and options; and	Subsection 3.14
(17)	an assessment of the critical facilities susceptible to supply-source disruptions, extreme weather events, or other failures.	Subsection 3.15
	APPENDIX A TO THE RULE	
	CURRENT LOAD FORECAST:	
A.	The IRP shall contain a load forecast for each year of the planning period.	Section 4
B.	The load forecast shall incorporate the following information and projections:	
(1)	annual sales of energy, net load, and reliability reserves on a system-wide basis, by customer class, and disaggregated among commission jurisdictional sales, FERC jurisdictional sales, and sales subject to the jurisdiction of other states;	Section 4, Appendix E
(2)	weather normalization adjustments	Section 4, Appendix E
(3)	assumptions for economic and demographic factors relied on in load forecasting;	Section 4, Appendix E
(4)	expected capacity and energy impacts of existing and proposed demand-side resources; and	Section 4, Appendix E
(5)	typical historic day and week load patterns on a system-wide basis for each major customer class.	Appendix F
C.	The utility shall develop an expected growth forecast, a high-growth forecast, and a low-growth forecast, or an alternative forecast that provides an assessment of uncertainty (e.g., probabilistic techniques).	Section 4
D.	Required detail.	
(1)	The utility shall explain how the utility's load forecasts account for the demand-side savings attributable to actions other than the utility-sponsored demand-side resources for each major customer class, as well as the effect of those utility-sponsored demand-side resources for each major customer class on the load forecasts.	Subsection 4.11

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NMAC	Requirement	Where Addressed
(2)	The utility shall compare the annual forecast in its most recently filed resource plan to the annual forecast in the current resource plan.	Subsection 4.13
(a)	In its initial IRP filing, the utility shall provide information demonstrating how well its forecasts predicted demand (during the preceding four years.)	Subsection 4.14
(3)	The utility shall explain and document the assumptions, methodologies, and any other inputs upon which it relied to develop its load forecast.	Section 4
	LOAD AND RESOURCES TABLE:	
A.	The IRP shall contain a table of the utility's existing loads and resources at the time of filing.	Section 5, Table 5-1
B.	The load and resources table, to the extent practical, shall contain the appropriate components from the load forecast.	Section 5
C.	Resources shall include:	
(1)	utility-owned generation;	Section 5
(2)	energy storage resources;	Section 5
(3)	existing and future contracted-for purchased power, including qualifying facility purchases	Section 5
(4)	purchases through net metering programs, as appropriate;	Section 5
(5)	demand-side resources, as appropriate; and	Section 5
(6)	other resources relied upon by the utility, such as pooling, wheeling, or coordination agreements effective at the time the IRP is filed.	Section 5
	IDENTIFICATION OF RESOURCE OPTIONS	
A.	The utility shall identify additional resource options in its IRP that it evaluated for selection as part of the utility's portfolio.	Section 7
B.	In identifying additional resource options, the utility should consider all supply-side, energy storage, and demand-side resources.	Section 7
C.	The utility shall describe the assumptions and methodologies used in evaluating its resource options, including, as applicable:	
(1)	life expectancy;	Section 7
(2)	whether the resource is replacing or adding capacity or energy;	Sections 7 and 9
(3)	dispatchability;	Section 7
(4)	lead-time requirements;	Section 7
(5)	flexibility, including blackstart capability;	Section 7
(6)	load-modifying or grid-balancing capabilities;	Section 7
(7)	efficiency; and	Section 7
(8)	ability to most effectively provide reasonable and consistent progress toward satisfaction of the renewable portfolio standard.	Section 9
D.	For supply-side resource options, the utility shall identify the assumptions actually used for capital costs, fixed and variable operating and maintenance costs, fuel costs forecast by year, and purchased power demand and energy charges forecast by year, fuel type, heat rates, annual capacity factors, availability factors and, emission rates (expressed in pounds emitted per kilowatt-hour generated) of criteria pollutants as well as carbon dioxide and mercury.	Section 7
E.	The utility shall describe its existing rates and tariffs that incorporate load management or load modifying concepts. The utility shall also describe how changes in rate design might assist in meeting, delaying or avoiding the need for new capacity.	Subsection 7.03
F.	In identifying resource options, the utility shall include a description of the projected emissions of carbon dioxide for any resources proposed to be owned by the utility and for any new generic resources included in the utility's modeling for its resource plan;	Section 7
	DETERMINATION OF THE RESOURCE PORTFOLIO:	
A.	To identify the most cost-effective resource portfolio, utilities shall evaluate all supply-side resources, energy storage, and demand-side resource options on a consistent and comparable basis, taking into consideration risk and uncertainty, including but not limited to financial, competitive, operational, fuel supply, price volatility, downstream impacts on transmission and distribution investments, extreme-weather events, and anticipated environmental regulation costs.	Section 9
B.	The utility shall evaluate the cost of each resource through its projected life with a life-cycle or similar analysis.	Section 9
C.	The utility shall consider and describe ways to mitigate ratepayer risk.	Subsection 9.03

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NMAC	Requirement	Where Addressed
D.	Each electric utility shall provide a summary of how the following factors were considered in, or affected, the development of resource portfolios:	
(1)	load management or modification and energy efficiency requirements;	Subsection 9.04
(2)	renewable energy portfolio requirements;	Subsection 9.04
(3)	existing and anticipated environmental laws and regulations, and, if determined by the commission, the standardized cost of carbon emissions;	Subsection 9.04
(4)	fuel diversity;	Subsection 9.04
(5)	susceptibility to fuel interdependencies;	Subsection 9.04
(6)	transmission or distribution constraints; and	Subsection 9.04
(7)	system reliability and planning reserve margin requirements.	Subsection 9.04
E.	Alternative portfolios. In addition to the detailed description of what the utility determines to be the most cost-effective resource portfolio, the utility shall develop alternative portfolios by altering risk assumptions and other parameters developed by the utility.	Subsection 9.05

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S 2023 INTEGRATED RESOURCE PLAN FOR NEW MEXICO	)	
	)	**CASE NO. 23-00073-UT**
SOUTHWESTERN PUBLIC SERVICE COMPANY,	)	
APPLICANT	)	

CERTIFICATE OF SERVICE

I certify that a true and correct copy of *Southwestern Public Service Company's 2023 Integrated Resource Plan* was electronically sent to each of the following on this 13th day of October 2023:

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