# 2020 Tolk Analysis: Session 2 of the 1st Technical Conference

09/01/2020

# Today's Meeting Agenda

1. Prior and Future Technical Conferences
2. Updates from Prior Technical Conference
    A. Independent Evaluator
    B. Request for Information for generating resources
3. Encompass – Production Cost Modeling Software
4. Responses to Parties Comments and Questions
    A. SPS Load Forecast Update
    B. Sierra Club Modeling Questions

# Agenda for Future Technical Conferences

Future Technical Conferences will include the following topics:

1. Harrington Station
2. Tolk Analysis – Retirement dates and operating scenarios
3. Value of Tolk water rights
4. Modeling Parameters

# Agenda Item 1: Prior and Future technical conferences

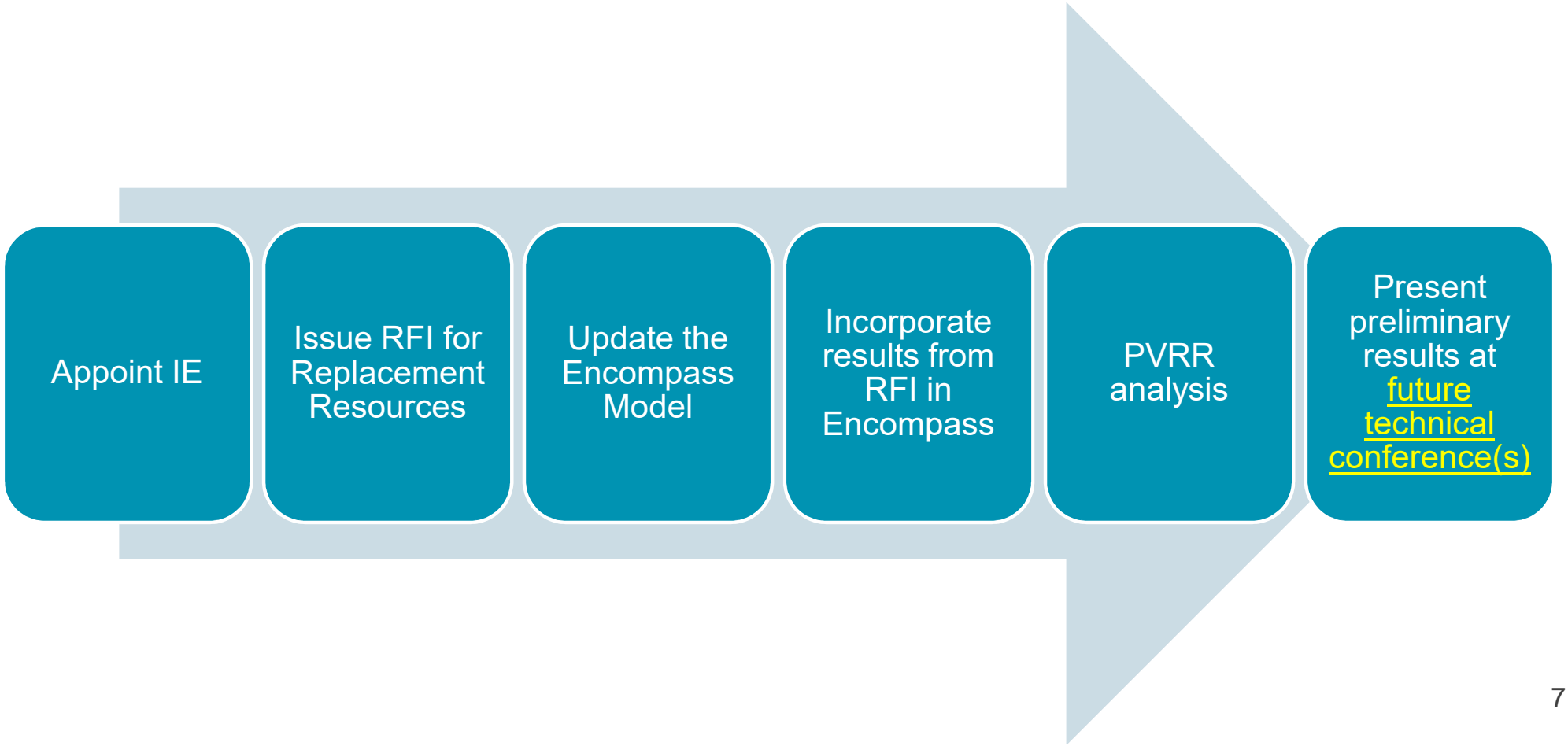
# Prior & Future Technical Conferences

- SPS held the first technical conference on June 18th 2020
- Agenda Items included:
  - SPS's general approach to the Tolk Analysis
  - Request for Proposal ("RFP") to acquire the services of an IE
  - Draft Request for Information ("RFI") to obtain pricing of replacement resources
  - Outline of the scenarios SPS is proposing to evaluate
- Originally planned to address all other outstanding requirements in this technical conference
- SPS is now proposing to schedule regular technical conferences to adequately address parties concerns, questions and comments

# General Approach

- A Present Value Revenue Requirement (“PVRR”) Analysis using the Encompass production cost modeling software
- Encompass will be discussed in detail later in this presentation
- Evaluate multiple retirement and operating scenarios
- Each scenario will include an optimized expansion and generator replacement plan
- Type, technical characteristics, and cost of replacement generators available will be the result of an RFI process
- An IE will oversee the RFI process and Tolk Analysis

# Process


Appoint IE
Issue RFI for Replacement Resources
Update the Encompass Model
Incorporate results from RFI in Encompass
PVRR analysis
Present preliminary results at future technical conference(s)

# Agenda Item 2A: Independent Evaluator

# Independent Evaluator

**Actions taken during, or since, the previous technical conference:**

- Solicitated feedback for draft RFP and associated questionnaire
- Issued the RFP to obtain the services of an Independent Evaluator
- Recommended selection of Guidehouse (f/k/a Navigant Consulting, Inc.)
- Appointed Guidehouse as the Independent Evaluator

**Next Steps**

- None – Task Complete

# Introduction to Guidehouse

- Expert-based, international consulting firm with diverse technical capabilities and a deep understanding of resource planning & procurement, interconnection studies, infrastructure planning and grid operations
- Over a decade of experience conducting Independent Evaluation for resource procurement engagements
- Over 25 years of experience with supply resource solicitations & bid evaluations
- Comprehensive knowledge spans from RFP development, issuance & administration, to bid evaluation, PPA development & negotiation, regulatory support, and expert testimony
- Expertise in power resource procurement that spans more than three decades with a thorough understanding of industry practices across multiple jurisdictions
- Core Team's industry experience from 14 to over 35 years

# Agenda Item 2B: Request for Information

# Recap: RFI for Replacement Resources

- SPS will issue an all-source solicitation for replacement generating resources to provide capacity and associate energy
- SPS will consider all ownership structures including, but not limited to, purchased power agreements, build-own-transfers, and company self-built facilities
- Bidders will be required to provide information necessary to accurately model the proposed resources – including, but not limited to: pricing, project type & location, technical characteristics, generator output, commercial operation date

# Request for Information

**Actions taken during, or since, the previous technical conference:**

- Solicitated feedback during first technical conference for draft RFI
- Provided draft RFI to Guidehouse for IE review

**Next Steps**

- Issue RFI within 5 business days
- Receive proposals within 60 days of issuance

# Southwestern Public Service Company
# Request for Information

## Introduction:

This announcement constitutes a Request for Information ("RFI") notice soliciting current pricing, technical characteristics, and other relevant information for potential generating resources. This is not a Request for Proposals ("RFP") or solicitation for formal proposals. This RFI does not constitute a commitment, implied or otherwise, that SPS will take action in this matter. SPS will not be responsible for any costs incurred in furnishing SPS responsive information.

SPS is interested in understanding the current availabilities, flexibilities, and preferences of market participants interested in providing capacity and associated energy to SPS from all generating resource types, including energy storage, whether existing or yet-to-be constructed. SPS is considering the availability of capacity resources for possible future owned generation, build-own-transfers ("BOTs"), and purchased power agreements ("PPAs").

## General Background:

- SPS is a New Mexico corporation and wholly-owned electric utility subsidiary of Xcel Energy.
- SPS's total company service territory encompasses a 52,000-square-mile area in eastern and southeastern New Mexico, the Texas Panhandle, and the Texas South Plains and its primary business is generating, transmitting, distributing, and selling electric energy.
- SPS has a long history of providing safe, reliable, value-added service to our customers
- SPS serves 394,220 electric retail customers in Texas and New Mexico.
- As prescribed in the Uncontested Comprehensive Stipulation ("Stipulation") filed at the New Mexico Public Regulation Commission on January 13, 2020 and approved by the New Mexico Public Regulation Commission ("NMPRC") in Case No. 19-00170-UT, the Stipulation requires SPS to submit a robust analysis of the possible abandonment of its Tolk Generating Station Units 1 and 2 (Tolk) and potential means of replacement of those resources (the "Tolk Analysis"). The Tolk Analysis shall include replacement resources priced based on an RFI solicitation. The Tolk Analysis will also consider a scenario in which all SPS's coal-burning units are retired or replaced before 2030.
- SPS will be evaluating multiple scenarios with various capacity replacement dates. The minimum net capacity need is approximately 500 MW beginning summer 2023. The maximum net capacity need is approximately 2,200 MW beginning summer 2025.

## Qualifications and Assumptions:

- Expressions of interest should be from existing or proposed generating facilities within the SPS zone or delivered to the SPS zone from existing or proposed sites within the Southwest Power Pool.
- Expressions of interest should include a proposed Commercial Operation Date ("COD") if the submission is a future resource.
- Expressions of interest should include all capacity, energy, environmental attributes such as Renewable Energy Credits (RECs), and other generation-related services.
- For purposes of this RFI, "renewable energy" refers to electrical power generated by solar, wind, biomass, or other commercially viable renewable energy technologies including energy storage.
- SPS is interested in the availability of capacity and associated energy resources for possible future owned generation, BOTs, and PPAs.
- PPA durations are recommended to be 25 and/or 30 years.
- Interested parties should respond to this RFI within 60 days of issuance.

## Specific Information of Interest:

- Project type, including technical characteristics.
- Project site location for delivery within (or to) the SPS system.
- Proposed COD for resource facilities responsive to this RFI, including details on whether a delay in the proposed COD could impact the pricing and if so an estimate of the price of those impact(s).
- Pricing and quantity in megawatts. All pricing in respondent proposals should reflect costs (to the extent applicable) at the time of submittal and should include costs of interconnection to the transmission system if applicable.
- Statement on current interconnection status (if any), and anticipated extent of need for transmission system upgrades for the proposal.
- Proposals must demonstrate an anticipated ability to obtain all required state/local pre-construction approvals and any associated risks to meet the COD.

## Content of Submissions:

- Appendix A includes a set of forms applicable to the resource type being submitted.
    - For dispatchable resources the submitter should complete Appendix A-PPA_DIS forms
    - For renewable generation resources the submitter should complete Appendix A-PPA_RENEW forms
    - For Build-Own-Transfer or sale of an existing asset the submitter should complete Appendix A-BOT.
- Some information may be requested on more than one form. Although such requests may be redundant, submitters must provide the information requested on each applicable form.
- SPS will convene a Bidders Meeting for all interested parties to allow for clarifications and any questions that potential bidders may have. See meeting details below.

# Bidders Meeting:

**Date:** September 21, 2020

**Time:** 1:00PM – 3:00 PM Mountain Daylight Time

**Join Zoom Meetin**g:
https://xcelenergy.zoom.us/j/93175193060?pwd=cVpNeTZvTEkycURlMUhqMlZWL2I4dz09

**Meeting ID:** 931 7519 3060
**Passcode:** 270511
One tap mobile
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Dial by your location
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+1 346 248 7799 US (Houston)
+1 206 337 9723 US (Seattle)
+1 312 626 6799 US (Chicago)
+1 646 518 9805 US (New York)
+1 651 372 8299 US (St. Paul)
+1 786 635 1003 US (Miami)
**Meeting ID:** 931 7519 3060
**Passcode:** 270511
**Find your local number:** https://xcelenergy.zoom.us/u/aLUXvN6pb

# Proposal Submission Deadline:

Proposals will be accepted until 5:00 P.M. Central Time on **Friday, November 6, 2020**. All Proposals must be transmitted by to the following email address:

**SPSTolkAnalysis@xcelenergy.com**

Proposals received later than the due date and time indicated will be rejected.

# Follow-up Requests

To the extent SPS has questions or seeks clarification regarding a Proposal, SPS may pose follow-up questions. Submitters are not obligated to respond to such follow-up questions, but are advised that a failure to provide adequate information may lead to a Proposal or a portion of a Proposal being disregarded.

# Confidentiality

SPS recognizes that certain information contained in a Proposal submitted may be deemed by the submitter to be confidential. To the extent a submitter believes portions of its Proposal (or any subsequent responses to follow-up questions) constitute confidential material, the submitter should clearly label such material as confidential ("Confidential Material"). SPS will not be responsible for identifying any Confidential Material that has not been designated as such by the submitter. If SPS receives a request from a regulatory or judicial authority to which Confidential Material is responsive, or if SPS receives a request (that SPS reasonably deems to be a valid request) from a party in a regulatory or judicial proceeding to which request SPS determines Confidential Material in the Proposal is responsive, or to the extent otherwise required by law, SPS may provide the Confidential Material pursuant to a confidentiality or protective agreement or order in such proceeding. To the extent Confidential Material is proposed to be disclosed publicly (i.e., not subject to a confidentiality or protective agreement), SPS will notify the submitter as soon as reasonably possible; it is the sole responsibility of the submitter to seek to protect the material subsequent to such notification. SPS may disclose non-Confidential Material at its discretion without prior notice.

# Agenda Item 3: Encompass

Jon Landrum | Manager of Resource Planning Analytics

# Impetus for Change

- Need for more detailed analyses around operational impact of plans; Increasing reliance on intermittent and storage resources
- Stakeholder requests for more detailed modeling in the complex and evolving resource environment
- Opportunity to improve visibility and transparency of modeling inputs/outputs
- Strategist is no longer a “supported” product by vendor, leading to potential future operational challenges

# Replacement Options, Identification and Evaluation

- Developed and issued RFI on Aug 17, 2017 (Received responses from 12 vendors)
  - ABB (Capacity Expansion)
  - EPIS (Aurora)
  - Energy Exemplar (Plexos)
  - Vibrant Clean Energy (WIS:dom)
  - Abacus Solutions(Saturn)
  - PCI (GenTrader)
  - EPRI (EGEAS)
  - Anchor Power (EnCompass)
  - NREL (RPM)
  - Ascend Analytics (PowerSimm)
  - E3 (RESOLVE)
  - Newton Energy (ENELYTX)
- Evaluation team reviewed and scored vendor responses based on specific RFI criteria; selected 4 vendors to present in-person (presentations held Nov 13-14, 2017)
  - ABB (Capacity Expansion)
  - EPIS (Aurora)
  - Energy Exemplar (Plexos)
  - Anchor Power (EnCompass)

# Replacement Options, Identification and Evaluation (cont)

- Selected two finalists based on detailed discussions with vendors and evaluation of materials presented; conducted in-house evaluation of finalist systems
  - EPIS (Aurora)
  - Anchor Power (EnCompass)
- Xcel demos/training conducted Nov 2018
  - Installed software in test environment
  - 2-5 webex training sessions led by vendor
  - 2 weeks (each) allocated to testing and gaining familiarity with models
- Selected EnCompass as preferred alternative

# Model Features

| | Encompass |
|---|---|
| **Functionality** | • Modern “solve anything” algorithm<br>• Hourly operation detail (accurately captures ramp rates, start ups, etc.)<br>• Enhanced storage logic and ancillary services<br>• Able to perform utility capital accounting (revenue requirements)<br>• National database, regional simulation capability |
| **Ease of implementation** | • Easily import existing data<br>• Data structure easy to understand/manage<br>• Similar source data requirements as existing processes |
| **Transparency** | • Regulatory license available at $20k/yr<br>• All data inputs/outputs are easily shareable in Excel spreadsheets |

# Key Stakeholder Issues Addressed

| Concern | Encompass Advantages over Strategist |
|---|---|
| Transparency / Access | • Fully functional low-cost license for regulators/stakeholders<br>• All inputs/outputs are readable in non-proprietary Excel |
| Storage Modeling | • Enhanced storage modeling with hourly detail<br>• Capable of sub hourly dispatch, wider array of ancillary services incorporated in model<br>• Sophisticated state-of-charge limit logic |
| Modeling of Renewables, DER, Markets | • Hourly chronological dispatch<br>• Able to use less granularity for strategic evaluations<br>• Broader market integration capability |
| Existing Unit Eval (EUE) | • Able to solve highly complex models |
| Model Environmental Impacts | • Enhanced capability of modeling and simultaneously optimizing all emissions costs / programs / caps |

# QUESTIONS & DISCUSSION

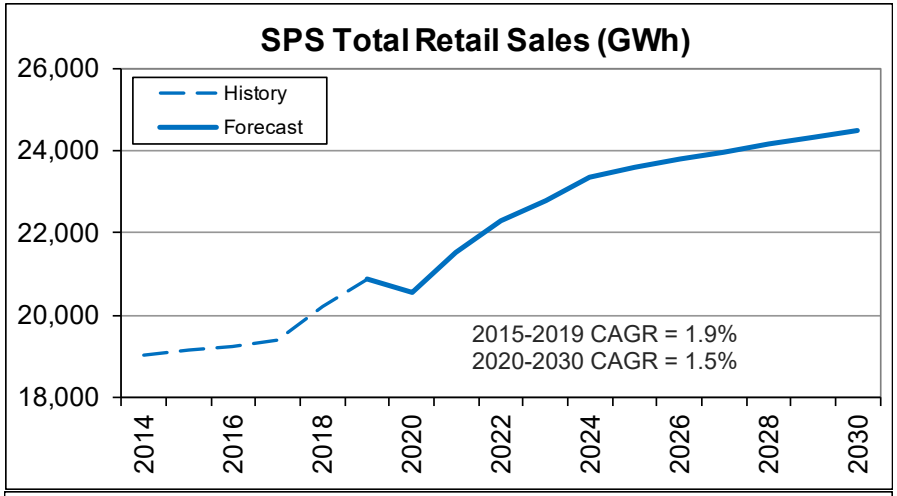
# Agenda Item 4A: SPS Sales and Demand Forecast Update

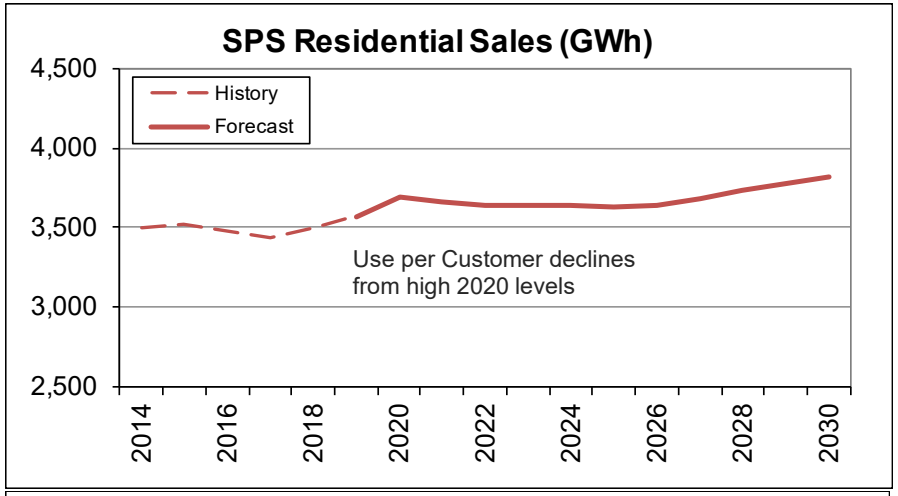
Jannell Marks | Director of Energy Sales and Demand Forecast

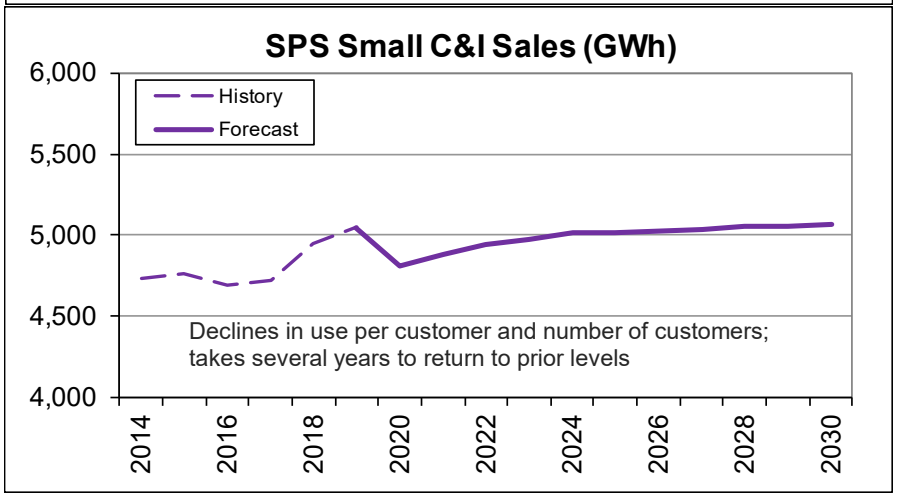
# SPS Forecast Assumptions

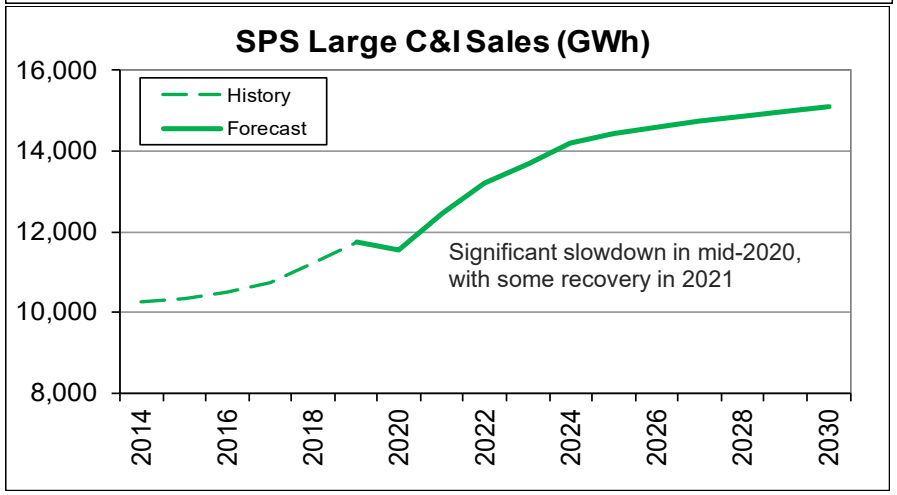
- Current economic outlook shows significant COVID-19 impacts in 2020 with impacts moderating through 2024
  - Most significant impact in Q2 2020
- Residential use per customer is higher than recent past and Small C/I use per customer is lower
  - Both Residential and Small C/I use per customer return to long-term trends after 2020, but take several years to return to prior levels
  - Assume loss of Small C/I customers due to business closures in “experience economy” sectors (Arts and Entertainment, Restaurants and Bars, Retail)
- Large C/I shows signs of recovery by end of 2020
  - Slowdown in Oil and Gas extraction/drilling in Q2, Q3 2020
  - Additional negative impacts in 2020 and into 2021 for other mining/manufacturing customers
- Continued declines in Wholesale as contracts ramp down/expire

# SPS Retail Sales

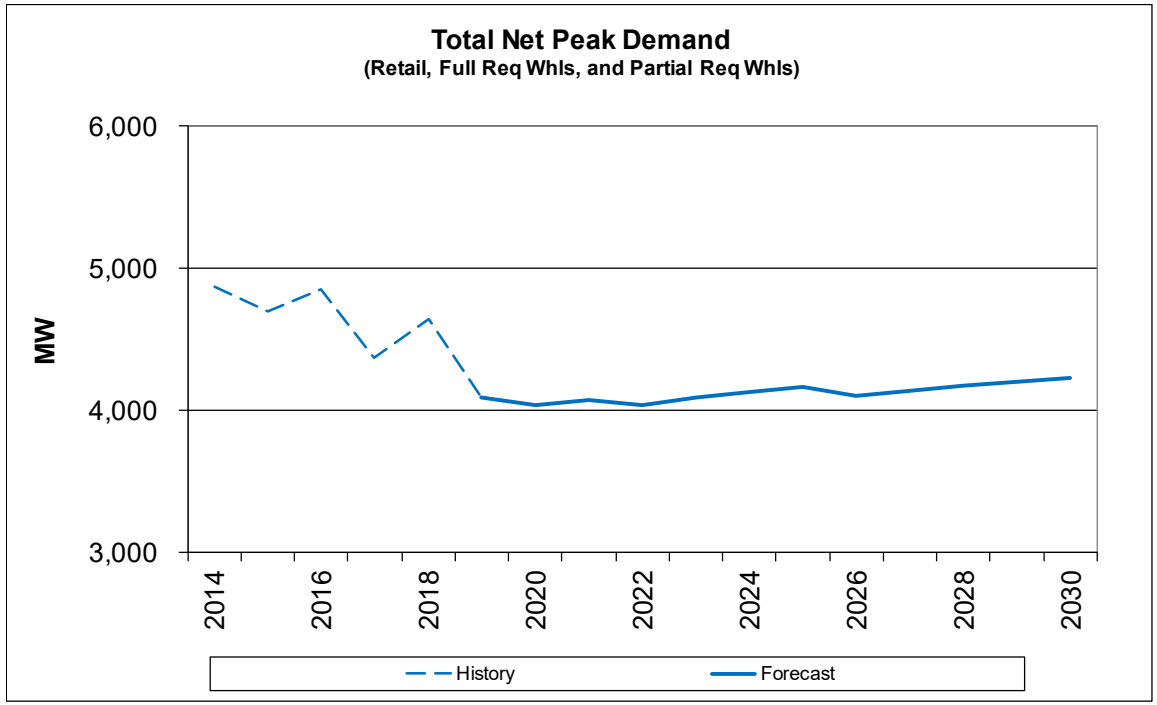


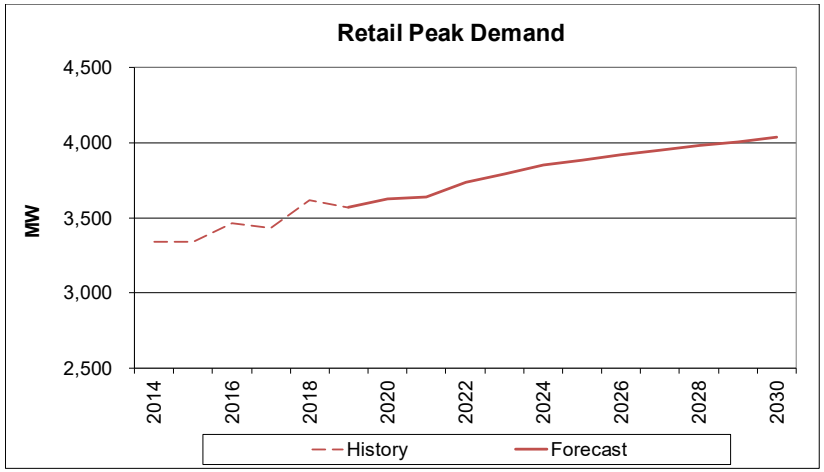



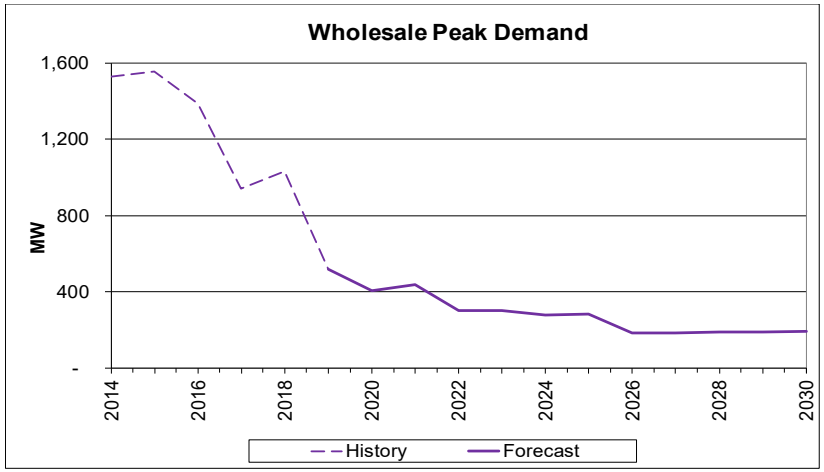



# SPS System Peak Demand



# QUESTIONS & DISCUSSION

# Agenda Item 4B: Sierra Club Follow-up Discussion

# General Modeling Questions

**Q.** ***Market power, both firm and non-firm: Is Xcel modeling just resources from the RFP process, or is the Company also planning to model market power as an option to replace some generation and capacity? What cost and availability assumption is Xcel using for these potential purchases?***

A. SPS include the availability to purchase (sell) energy from the SPP Integrated Market. SPS include the option to purchase up to 100MW of short-term capacity from SPP. SPS will utilize the most recent market price forecast.

**Q.** ***When evaluating the least cost solution for Harrington, is SPS evaluating whether it actually has a need for the full capacity and services currently provided by Harrington, or is SPS simply comparing the cost of the plant on natural gas and coal to the cost of providing identical services from alternative resources?***

A. SPS only evaluates system needs and not like-in-kind replacement of generators. For example, if the retirement of all three Harrington units created a capacity shortage of 250MW in 2025. SPS's analysis would only require 250MW of additional capacity in 2025, not the full capacity of Harrington. In this example, 250MW would be the minimum amount of capacity required, not the maximum.

# General Modeling Questions

**Q.** ***Reliability: How is Xcel planning to model the firm capacity contribution of solar and wind? Does the Company plan to conduct reliability modeling to inform its ELCC assumptions? Is the Company planning to use resource blocks to reflect the changing contribution of each resource as the amount installed on the system increases? What about paired wind and solar resources?***

A. SPS will incorporate SPP's most recent ELCC calculations to assign accredited capacity to renewable resources. SPP's methodology includes resource blocks to reflect the changing contribution of each resource. SPP has not developed a methodology to determine paired wind and solar accreditation.

**Q.** ***Will the Company assume a reduction in spending in years directly prior to plant retirements? / What costs and assumptions for sustaining capital costs is SPS planning to use in its Harrington analysis? / Does Xcel has a schedule of sustaining capital costs that it plans to incorporate into EnCompass? What is the assumed step-down in spending in years prior to retirement?***

**A.** SPS will incorporate the most recent capital budget in the analysis, with scenario specific capital and O&M budgets developed for Tolk and Harrington. SPS will include a managed decline of expenditure in the years directly prior to plant retirements.

# General Modeling Questions

**Q.** ***Optimized modeling vs scenario modeling: We would like to understand the main factors driving Xcel / EnCompass' selection of optimal retirement date. We believe that optimized retirement runs should be foundation of this analysis. However we would encourage Xcel to also think about hard coding sensitivities based on optimized results to understand how sensitive the model is to specific assumptions. For example, if an optimized run indicates that a 2027 retirement date for Tolk is least cost, but a hard coded retirement of 2025 is only a tiny bit more expensive, is the result of 2027 actually meaningful or is the difference between 2025 and 2027 just a reflection of, for example, the estimated sustaining capital cost assumptions? It is essential that the Company understands and is transparent about which modeling results are significant and which are likely not.***

A. SPS will evaluate whether alternative retirement dates could provide a preferable plan. However, parties must consider that all scenarios modeled will be subject to uncertainties in cost and operation assumptions. Cherry-picking uncertainties in one scenario, without exercising the same objectivity in other scenarios will not meet SPS's goal of a fair and unbiased analysis. In addition to evaluating the economic attributes of each scenario, SPS will also consider system reliability, operational constraints, and feasibility of acquiring new generation.

# Harrington Station Questions

***Q. Does SPS plan to use the IRP process to make the final decision on whether to retire, repower on natural gas, or install scrubbers at Harrington? Or does the Company plan to make a decision prior to or outside the IRP process?***

A. "The IRP process will not itself be used to make the decision on Harrington, though there is overlap. I'd anticipate there will be discussion of Harrington within the IRP process, including regarding the additional questions you posed"[1].

***Q. Harrington has to install scrubbers for SO2 NAAQS and/or regional haze compliance by 2024***

A. SPS has already evaluated installing scrubbers and DSI for SO2 NAAQS compliance and determined it to be uneconomical.

***Q. When evaluating Harrington, the Company should run at least one scenario requiring compliance with National Ambient Air Quality Standard for sulfur dioxide as expeditiously as practicable, 42 U.S.C. § 7502(c)(1), and no later than 2024***

A. SPS has already evaluated an early conversion to gas (2022) and determined an early conversion provided no clear economical benefit.

[1] Per the email response from Will DuBois, Lead Assistance Counsel, to the distribution list for the 2021 SPS NM IRP First Tolk-Related Technical Conference in response to the email from Joshua Smith from Sierra Club

# Harrington Station Questions

**Q.** ***Does SPS plan to model seasonal operation of Harrington when operating both on coal and natural gas in its analysis?***

A. No. When operating on coal, seasonal operations alone will not bring Harrington into compliance with NAAQS. When operating on gas, Harrington will provide capacity, energy and reliability benefits all year round.

***Q. Will SPS model staggered retirement at Harrington when operating both on coal and natural gas in its analysis?***

A. No. When operating on coal, a staggered early retirement alone will not bring Harrington into compliance with NAAQs. All units will need to be retired, converted to gas or environmental controls installed. SPS's analysis demonstrates that converting the units to gas is more economical than early retirement of the units.

# NEXT MEETING

Date: Mid to Late October

Time: Mountain Time TBD

Location: Zoom Meeting

# Appendix: Questions For Future Discussions

# Sierra Club June 26th Model Input Clarifications

***Questions not yet answered will be addressed in future technical conferences***

- **Staggered Retirement scenarios:** please confirm that both units will be economically committed and dispatched at all times, and that the no unit's retirement date would be later than 2032.
- **Sustaining Capital Costs:** Does Xcel has a schedule of sustaining capital costs that it plans to incorporate into EnCompass? What is the assumed step-down in spending in years prior to retirement? *
- **Market power**, both firm and non-firm: Is Xcel modeling just resources from the RFP process, or is the Company also planning to model market power as an option to replace some generation and capacity? What cost and availability assumption is Xcel using for these potential purchases? *
- **Environmental Compliance**: What operational assumptions and compliance costs is Xcel planning to using to model Tolk and Harrington's likely environmental compliance obligations?
- **Load and peak assumptions**: What baseline load and peak levels is Xcel using, and what sensitivities does Xcel plan to use in the Tolk analysis, especially in light of COVID's impact on sales and economic activities.

* *Discussed above*

# Sierra Club June 26th Model Input Clarifications

- **Optimized modeling vs scenario modeling**: We would like to understand the main factors driving Xcel / EnCompass' selection of optimal retirement date. We believe that optimized retirement runs should be foundation of this analysis. However we would encourage Xcel to also think about hard coding sensitivities based on optimized results to understand how sensitive the model is to specific assumptions. For example, if an optimized run indicates that a 2027 retirement date for Tolk is least cost, but a hard coded retirement of 2025 is only a tiny bit more expensive, is the result of 2027 actually meaningful or is the difference between 2025 and 2027 just a reflection of, for example, the estimated sustaining capital cost assumptions? It is essential that the Company understands and is transparent about which modeling results are significant and which are likely not.*

- **Reliability**: How is Xcel planning to model the firm capacity contribution of solar and wind? Does the Company plan to conduct reliability modeling to inform its ELCC assumptions? Is the Company planning to use resource blocks to reflect the changing contribution of each resource as the amount installed on the system increases? What about paired wind and solar resources? *

* *Discussed above*

# Sierra Club June 26th Request for SPS Model Runs

1. Tolk has to comply with Regional Haze regulations by installing dry scrubbers by 2024 (this is likely the earliest there would be any such requirement as it takes at least three years to install).
2. Harrington has to install scrubbers for SO2 NAAQS and/or regional haze compliance by 2024 (same as above). *
3. Harrington operates seasonally *
4. Staggered retirement of both Tolk and Harrington's units (starting as early as possible, likely 2023).
5. Staggered retirement AND seasonal operation of both Tolk and Harrington (seasonal operation stating this year, staggered retirement starting ASAP).
6. Load sensitivity, based in part on COVID impacts, assuming a slow-down in demand growth.

* *Discussed above*

# Sierra Club August 20th Request for SPS Model Runs

1. Does SPS plan to use the IRP process to make the final decision on whether to retire, repower on natural gas, or install scrubbers at Harrington? Or does the Company plan to make a decision prior to or outside the IRP process? *
2. When evaluating the least cost solution for Harrington, is SPS evaluating whether it actually has a need for the full capacity and services currently provided by Harrington, or is SPS simply comparing the cost of the plant on natural gas and coal to the cost of providing identical services from alternative resources? *
3. What costs and assumptions for sustaining capital costs is SPS planning to use in its Harrington analysis? *
4. Will the Company assume a reduction in spending in years directly prior to plant retirements? *
5. Does SPS plan to model seasonal operation of Harrington when operating both on coal and natural gas in its analysis? *
6. Will SPS model staggered retirement at Harrington when operating both on coal and natural gas in its analysis? *

* *Discussed above*

# Sierra Club August 20th Request for SPS Model Runs

7. Will the Company incorporate the results of its Tolk RFP into its modeling assumptions for Harrington's replacement costs? More specifically, we believe that the Company should use those RFP results (including costs for solar, wind, and battery storage) to inform its cost assumptions for replacing or retrofitting Harrington.

8. When evaluating Harrington, the Company should run at least one scenario requiring compliance with National Ambient Air Quality Standard for sulfur dioxide as expeditiously as practicable, 42 U.S.C. § 7502(c)(1), and no later than 2024. *

9. We urge the Company to run at least one modeling scenario in which Tolk is required to retire, repower, or comply with Regional Haze regulations by installing dry scrubbers or dry sorbent injection by 2024.

* *Discussed above*