790 S. Buchanan
Amarillo, TX 79101

May 17, 2021

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

Re: *In the Matter of Southwestern Public Service Company's Energy Efficiency Annual Report*

Dear Ms. Sandoval:

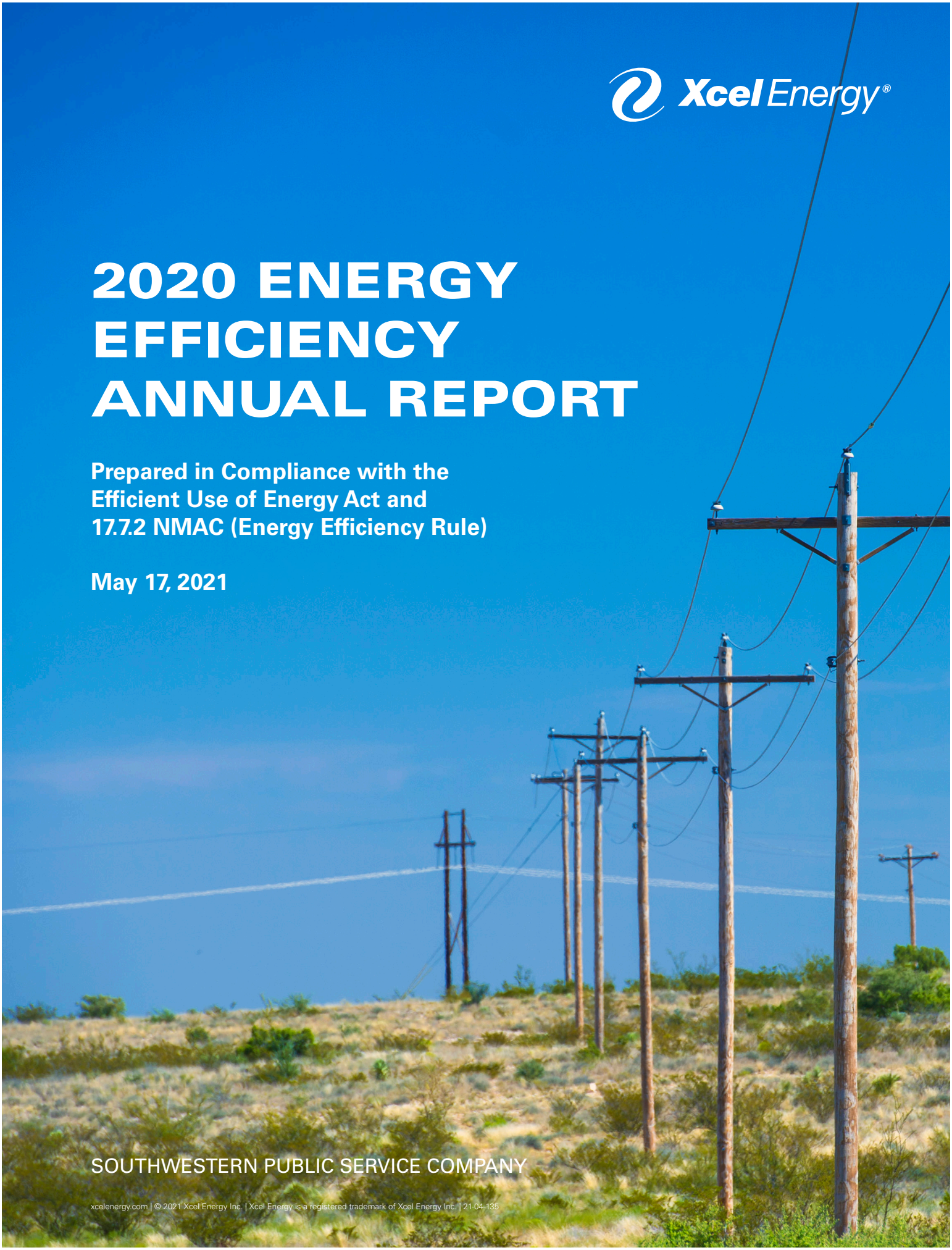
In accordance with 17.7.2.8(A) NMAC of the Commission's Energy Efficiency Rule, Southwestern Public Service Company (SPS) hereby files its 2020 Energy Efficiency Annual Report under Case No. 19-00140-UT.

Please scan a date stamped copy of the referenced documents and email to Mario.A.Contreras@xcelenergy.com when you have an opportunity. If you need any further information, please contact me at (806) 378-2115.

Sincerely,

/s/Mario Contreras
Mario Contreras,
Manager Rate Cases

Enclosure



2020 ENERGY EFFICIENCY ANNUAL REPORT

Prepared in Compliance with the Efficient Use of Energy Act and 17.7.2 NMAC (Energy Efficiency Rule)

May 17, 2021

SOUTHWESTERN PUBLIC SERVICE COMPANY

Table of Contents

Glossary of Acronyms and Definition

Acronym/Defined Term	Definition
2020 Annual Report	SPS's 2020 Energy Efficiency and Load Management Annual Report
Commission	New Mexico Public Regulation Commission
DSM	Demand-Side Management – refers to the energy efficiency and load management programs collectively
EE	Energy Efficiency
EE Rule	Energy Efficiency Rule (17.7.2 NMAC)
EISA	Energy Independence and Security Act of 2007
EUEA	New Mexico Efficient Use of Energy Act, as amended (NMSA 1978 §§62-17-1 through 62-17-11)
Evaluator	Independent Program Evaluator, the third-party contractor that will conduct all measurement and verification of the programs
Evergreen	Evergreen Economics Inc., the third-party selected as the Independent Program Evaluator for the measurement and verification of all New Mexico utility energy efficiency and load management programs
GWh	gigawatt hour
HPWH	Heat Pump Water Heater
HER	Home Energy Reports
kW	kilowatt
kWh	kilowatt-hour
LED	light emitting diode
M&V	Measurement and Verification

Acronym/Defined Term	Definition
PY	Plan Year
SPS	Southwestern Public Service Company, a New Mexico corporation
Staff	Commission's Utility Division Staff
Stipulation	Settlement Agreement between the parties to Case No. 19-00140-UT
Triennial Plan	SPS's Energy Efficiency Plan
UCT	Utility Cost Test - the cost-effectiveness standard implemented on July 1, 2013, also known as the Program Administrator Test
VFD	Variable Frequency Drive
Xcel Energy	Xcel Energy Inc.

Document Layout

Southwestern Public Service Company's, a New Mexico corporation, ("SPS") 2020 Energy Efficiency ("EE") Annual Report ("2020 Annual Report") includes the following sections:

- Section I provides the Executive Summary consisting of an Introduction, Background, and Summary of Results;
- Section II provides the reporting requirements as required by 17.7.2.14 NMAC;
- Section III provides the program descriptions including an explanation of deviations from goal and changes during 2020, organized into the Residential, Business, and Planning & Research Segments;
- Section IV provides true-up of the 2020 Incentive Mechanism; and
- Appendix A provides the Measurement and Verification ("M&V") Report of SPS's 2020 program year prepared by Evergreen Economics Inc. ("Evergreen").

Section I. Executive Summary

Introduction

In accordance with the Efficient Use of Energy Act ("EUEA"), as amended by Senate Bill 418 (2007), House Bill 305 (2008), House Bill 267 (2013) and House Bill 291 (2019), and the New Mexico Public Regulation Commission's ("Commission") EE Rule 17.7.2 NMAC ("EE Rule"), SPS respectfully submits for Commission review its 2020 Annual Report. The EUEA and its associated Rule require public utilities to offer cost-effective energy efficiency and load management programs and authorizes them to receive cost recovery for qualified expenditures and performance incentives. Further, 17.7.2.8.A NMAC requires SPS to file with the Commission on May 15 of each year, a report on its energy efficiency and load management programs during the prior calendar year. The specific reporting requirements of the Rule are discussed in Section II.

Within this 2020 Annual Report, SPS provides the expenditures and savings results for eight EE/LM direct impact programs in the Residential Segment (including Low-Income) and Business Segment (including Large Customer). In addition, the 2020 Annual Report includes a summary of the Planning and Research Segment, which supports the direct impact programs. The M&V Report for SPS's 2020 savings is included as Appendix A.

Background

On May 15, 2019, SPS filed its Application requesting that the Commission: (a) approve SPS's 2020, 2021, and 2022 Energy Efficiency Plan ("Triennial Plan") and associated EE programs; (b) authorize SPS to apply the Commission's approval of the 2020 Triennial Plan budget to the entirety of 2020, even if the Commission has not issued a final order by December 31, 2019; (c) authorize SPS to fund its Triennial Plan program and administrative costs at three percent of customer bills in accordance with Section 17.7.2.8(C)(1) of the EE Rule and Section 62-17 -6(A) of the EUEA and to recover these costs through its EE Rider ("EE Rider"); (d) approve SPS's proposed methodology to calculate the financial incentive for each year of the Triennial Plan; (e) approve recovery of a financial incentive for 2020 through SPS's EE Rider; (f) approve SPS's proposed reconciliation process for the authorized budget and actual plan year expenditures and collections; (g) authorize SPS to recover costs associated with an EE Potential Study over a two-year time period beginning in 2020; and (h) grant all other approvals, authorizations, and relief that may be required under the EUEA, the EE Rule, and the New Mexico Public Utility Act (NMSA 1978, Sections 62-3-1 et seq., "PUA") for SPS to implement the approved Triennial Plan and EE Rider.

On September 27, 2019, SPS filed the Settlement Agreement between the parties to Case No. 19-00140-UT ("Stipulation") signed by SPS, the Attorney General, Coalition for Clean Affordable Energy, and Commission's Utility Division Staff ("Staff") and noted that Occidental Permian Ltd. and COG Operating LLC., the only other parties to the case, did not oppose the Stipulation. The Stipulation supported the following approvals and authorization's for SPS's Triennial Plan: a) The modified Triennial EE Plan (four residential direct EE programs, one business direct EE program, and one indirect segment to reflect the stipulated 2020 Plan Year ("PY") budget, as well as additional commitments by SPS to

evaluate potential future changes to programs that could be considered for implementation in the 2022 PY); b; SPS's continued use of the EE Rider that authorizes SPS to recover its 2020 PY program costs, as modified by the Stipulation; c) stipulated modifications to the performance incentive for the 2020 PY, that will be recovered by SPS through the EE Rider; and d) Stipulated agreement for SPS to issue an RFP to conduct an EE Potential Study in PY 2020 following approval of this case and recovery of the cost of the EE Potential Study within SPS's 2021 and 2022 program portfolio budgets ($250,000 each year). The Final Order Adopting the Certification of Stipulation was approved on February 19, 2020.

Summary of Results

In compliance with 17.7.2.14.C NMAC, Table 1 on page 4 shows SPS's program budgets, goals, and Utility Cost Test ("UCT") forecasted ratios that were developed using SPS's approved 2020 portfolio with adjustments to program budgets to account for additional 3% spending not forecasted in 2020's plan filing.

In 2020, SPS achieved verified net electric savings of 7,404 kilowatts ("kW") and 46,980,168 kilowatt-hours ("kWh") at the customer level, for a total cost of $9,515,057 (see Table 1 below.) This equals 128% of SPS's 2020 approved energy goal, while spending 100% of the approved budget. The portfolio was cost-effective with a UCT ratio of 1.87.

As shown in Table 1, most of the direct impact energy efficiency programs were cost-effective under the UCT. Four of the programs did not pass the UCT test in 2020. While each of the products listed below is discussed in more detail later in the Status Report, a summary of the primary reasons for individual programs falling below 1.0 on the UCT follows.

- Residential Cooling: The program received a low UCT in 2020 due to higher incentive payments to several contractors who submitted 2019 projects early in 2020. The 2019 savings and payments were considerably higher than the 2020 savings for the same equipment due to the reduction recommended in the 2020 TRM.

- School Education Kits: The program was filed with a UCT of 0.8 but achieved a UCT of 0.85. Due to the nature of the program, there is a limited selection of measures available that can be included in the kits.

- Heat Pump Water Heaters: The program had no participants in 2020 and therefore achieved a UCT ratio of 0.0.

- Smart Thermostats: The program received a low UCT in 2020 due to low participation.

Table 1: Estimated and Actual Program Data for 2020

Program	2020 Estimated								2020 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																
Residential Energy Feedback	26,315	$143,485	866	4,720,924	1,010	5,328,357	$ 157,067	1.09	33,370	$102,991	1,344	3,574,425	1,568	4,034,340	$ 115,429	1.12
Residential Cooling	96	$43,040	39	125,177	46	141,284	$ 61,723	1.43	193	$183,477	56	185,179	65	209,006	$ 96,850	0.53
Home Energy Services: Residential & Low Income	3,263	$2,193,861	904	8,963,155	1,055	10,116,428	$ 4,510,522	2.06	7,104	$2,308,984	910	10,481,391	1,062	11,830,012	$ 5,140,321	2.23
Home Lighting & Recycling	330,500	$1,199,817	973	5,642,488	1,131	6,298,717	$ 2,662,020	2.22	406,365	$1,249,993	2,089	12,849,572	2,438	14,502,903	$ 4,815,957	3.85
School Education Kits	2,500	$145,417	10	376,378	12	424,806	$ 115,870	0.80	2,557	$178,593	15	561,571	18	633,827	$ 151,917	0.85
Heat Pump Water Heaters	55	$44,500	25	185,716	29	209,612	$ 52,445	1.18	0	$43,402	0	0	0	0	$ -	0.00
Smart Thermostat	1,671	$142,500	0	825,149	0	931,320	$ 179,828	1.26	75	$33,739	0	58,580	0	66,117	$ 12,216	0.36
Residential Segment Total	**364,400**	**$3,912,620**	**2,818**	**20,838,988**	**3,284**	**23,450,523**	**$ 7,739,475**	**2.25**	**449,664**	**$4,101,180**	**4,414**	**27,710,718**	**5,151**	**31,276,205**	**$ 10,332,690**	**2.52**
Business Segment																
Business Comprehensive	477	$4,798,684	2,263	15,985,365	2,479	17,207,066	$ 6,276,131	1.31	144	$4,992,236	2,990	19,281,739	3,275	20,755,370	$ 7,503,602	1.50
Business Segment Total	**477**	**$4,798,684**	**2,263**	**15,985,365**	**2,479**	**17,207,066**	**$ 6,276,131**	**1.31**	**144**	**$4,992,236**	**2,990**	**19,281,739**	**3,275**	**20,755,370**	**$ 7,503,602**	**1.50**
Planning & Research Segment																
Consumer Education		$200,000								$120,983						
Market Research		$110,000								$37,996						
Measurement & Verification		$15,000								$6,642						
Planning & Administration		$285,000								$152,972						
Product Development		$190,000								$103,048						
Planning & Research Segment Total		**$800,000**								**$421,642**						
2020 TOTAL	**364,877**	**$9,511,304**	**5,081**	**36,824,352**	**5,762**	**40,657,589**	**$ 14,015,606**	**2.05**	**449,808**	**$9,515,057**	**7,404**	**46,992,458**	**8,425**	**52,031,576**	**17,836,292**	**1.87**

Table 2: Variance Comparison of 2020 Estimated and Reported/Verified Data

Program	2020 Estimated and Reported/Verified Variances							
	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								
Residential Energy Feedback	127%	72%	155%	76%	155%	76%	73%	102%
Residential Cooling	201%	426%	143%	148%	143%	148%	157%	37%
Home Energy Services: Residential & Low Income	218%	105%	101%	117%	101%	117%	114%	108%
Home Lighting & Recycling	123%	104%	215%	228%	215%	230%	181%	174%
School Education Kits	102%	123%	144%	149%	144%	149%	131%	107%
Heat Pump Water Heaters	0%	98%	0%	0%	0%	0%	0%	0%
Smart Thermostat	4%	24%	N/A	6%	N/A	6%	5%	23%
Residential Segment Total	**123%**	**105%**	**157%**	**133%**	**157%**	**133%**	**133%**	**112%**
Business Segment								
Business Comprehensive	30%	104%	132%	121%	132%	121%	120%	115%
Business Segment Total	**30%**	**104%**	**132%**	**121%**	**132%**	**121%**	**120%**	**115%**
Planning & Research Segment								
Consumer Education		60%						
Market Research		35%						
Measurement & Verification		44%						
Planning & Administration		54%						
Product Development		54%						
Planning & Research Segment Total		53%						
2020 TOTAL	123%	100%	146%	128%	146%	128%	127%	91%

As shown in Tables 1 and 2 (above), SPS met, or came close to meeting, most of its program forecasts for 2020. While program performance varied, the reasons for which are discussed further in Section III of this report, the majority of programs met or exceeded forecasted achievements in 2020 and were within their budgets. Residential Cooling, Home Lighting Program, School Education Kits, and Business Comprehensive Programs far exceeded their savings forecasts.

Section II: 17.7.2.14 NMAC Reporting Requirements

17.7.2.14.C NMAC requires that annual reports include specific details on the programs offered during the report year. 17.7.2.14.C states:

C. Annual reports shall include the following for each measure and program:

(1) documentation of program expenditures;
(2) estimated and actual customer participation levels;
(3) estimated and actual energy savings;
(4) estimated and actual demand savings;
(5) estimated and actual monetary costs of the public utility;
(6) estimated and actual avoided monetary costs of the public utility;
(7) an evaluation of its cost-effectiveness; and
(8) an evaluation of the cost-effectiveness and pay-back periods of self-directed programs.

In addition, 17.7.2.14.D NMAC requires that the annual report also include:

(1) the most recent M&V report of the Independent Program Evaluator ("Evaluator"), which includes documentation, at both the portfolio and individual program levels, of expenditures, savings, and cost-effectiveness of all energy efficiency measures and programs and load management measures and programs, expenditures, savings, and cost-effectiveness of all self-direct programs, and all assumptions used by the Evaluator;
(2) a listing of each measure or program expenditure not covered by the independent M&V report and related justification as to why the evaluation was not performed;
(3) a comparison of estimated energy savings, demand savings, monetary costs, and avoided monetary costs to actual energy savings, demand savings, actual monetary costs, and avoided monetary costs for each of the utility's approved measure or programs by year;
(4) a listing of the number of program participants served for each of the utility's approved measures of programs by year;
(5) a listing of the calculated economic benefits for each of the utility's approved measures or programs by year;
(6) information on the number of customers applying for and participating in self-direct programs, the number of customers applying for and receiving exemptions, M&V of self-direct program targets, payback periods and achievements, customer expenditures on qualifying projects, oversight expenses incurred by the utility representative or administrator; and
(7) any other information required by the Commission.

The following table provides direction as to where the supporting data and narratives for each of these requirements can be found in this report.

Table 3: Location of Reporting Requirements

Reporting Requirement	Location in Annual Report
17.7.2.14.C(1)	Tables 1 & 2
17.7.2.14.C(2)	Tables 1 & 2
17.7.2.14.C(3)	Tables 1 & 2
17.7.2.14.C(4)	Tables 1 & 2
17.7.2.14.C(5)	Tables 1 & 2
17.7.2.14.C(6)	Tables 1 & 2
17.7.2.14.C(7)	Tables 1 & 2
17.7.2.14.C(8)	N/A
17.7.2.14.D(1)	Appendix A
17.7.2.14.D(2)	Appendix A and Section III
17.7.2.14.D(3)	Table 2
17.7.2.14.D(4)	Table 2
17.7.2.14.D(5)	Table 2
17.7.2.14.D(6)	N/A
17.7.2.14.D(7)	N/A

Section III: Segment and Program Descriptions

Residential Segment

SPS has approximately 97,900 customers in its Residential Segment in New Mexico. The service area is relatively rural, with only a few small cities, including Clovis, Roswell, Artesia, Carlsbad, Portales, and Hobbs.

In 2020, SPS offered eight residential programs with opportunities for all residential customers, including low-income customers, to participate. In total, SPS spent $4,101,180 on these programs and achieved 4,414 kW and 27,698,429 kWh net savings at the customer level.

Overall, the Residential Segment of programs was cost-effective with a UCT of 2.52. The segment achieved 133% of the annual kWh goal with significant contributions from the Home Lighting & Recycling, Residential Energy Feedback and Home Energy Services programs. All the programs under the Residential Segment are discussed in more detail below.

Residential Energy Feedback

The Residential Energy Feedback Program provides participating customers with different forms of feedback regarding their energy consumption. The feedback communication strategies and associated tips and tools result in a decrease in energy usage by encouraging changes in the behavior of participating customers. Furthermore, the program attempts to build a persistent increase in, or earlier adoption of, energy efficient technologies and energy efficient practices.

Participants consist of the Legacy Group, which entered the program in early 2012; a 2015 Refill Group that started receiving Home Energy Reports ("HERs") in the summer of 2015, and a 2017 Refill Group that began receiving HERs in the summer of 2017. Participants receive their HER approximately once a quarter; however, the cadence varies based on the program design. Each report provides actionable energy saving tips and information on the customer's energy usage. For comparison purposes, the customer's energy consumption is benchmarked with that of a population of similar customers. Accessible through My Account, the My Energy online tool provides the same information that customers receive in the HER, with a more robust set of customization options and energy savings tools.

Table 4: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Residential Energy Feedback	33,370	26,315	$ 102,991	$ 143,485	1,344	866	3,574,425	4,720,924	1.12

Deviations from Goal
The Residential Energy Feedback Program did not achieve its estimated savings goals in 2020 due to the transition to a new program implementer. As a result, the first round of HERs were not mailed to treatment customers until April 2020.

Changes in 2020
SPS selected a new implementer for the Energy Feedback Program.

Residential Cooling

The Residential Cooling Program provides a rebate to electric customers who purchase and permanently install high-efficiency evaporative cooling, high efficiency air conditioners, air source heat pumps, mini-split heat pumps, or programmable thermostats for residential use in New Mexico.

Table 5: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Residential Cooling	193	96	$ 183,477	$ 43,040	56	39	185,179	125,177	0.53

Deviations from Goal
In 2020 the Residential Cooling program outperformed its estimated savings goals due to an increase in participation by qualified contractors.

Changes in 2020
Technical Assumptions for some measures were updated to align with the new TRM assumptions that were released in early 2020.

Home Energy Services

The Home Energy Services Program provides incentives to energy efficiency service providers for the installation of a range of upgrades that save energy and reduce costs for existing households. Qualifying customers receive attic insulation, air infiltration reduction, duct leakage repairs, and low-flow showerheads for homes with an electric water heater.

The primary objective of this program is to achieve cost-effective reductions in energy consumption in residential and low-income homes. Additional objectives of the program are to:

- encourage private sector delivery of energy efficiency products and services;
- utilize a whole-house approach to efficiency upgrades; and
- significantly reduce barriers to participation by streamlining program procedures.

SPS partners with third-party contractors to deliver these services to qualifying residential customers. Contractors must apply to the program and be approved in order to participate. SPS requires contractors to receive pre-approval for targeted multifamily sites prior to installation of any energy efficiency components for which an incentive will be requested.

Table 6: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Home Energy Services: Residential & Low Income	7,104	3,263	$ 2,308,984	$2,193,861	910	904	10,481,391	8,963,155	2.23

Deviations from Goal
The Home Energy Services Program exceeded its energy savings goals for 2020. The program was also highly cost-effective. The Residential portion of the program performed well, achieving savings of 1.578 gigawatt hours ("GWh") at the customer level. SPS recorded 8.903 GWhs of customer level savings on the Low-Income portion of the program, with expenditures of $1,596,886. This is approximately 17% of the total New Mexico portfolio spend and in excess of the minimum state requirement of 5% of the New Mexico portfolio spend.

To help customers save more while at home, the Company also mailed Stay at Home kits in the summer of 2020 that included a showerhead and aerator, in addition to lighting mentioned below.

Changes in 2020
None.

Home Lighting and Recycling

The Home Lighting and Recycling Program helps customers save energy and money by offering energy efficient light emitting diode ("LED") bulbs at discounted prices at participating retailers. SPS works with retailers and manufacturers to buy down the prices of bulbs. This provides a convenient and inexpensive way for customers to reduce their energy usage and impact on the environment while saving money.

SPS marketed the program through a variety of advertising and promotions, including television, radio, on-line, publications, bill onserts, and point-of-purchase displays. The community events the company usually participates in were cancelled due to the COVID-19 pandemic, so the program was unable to be promoted via in person tactics that have been successful in the past. Instead, we increased our awareness by mailing stay-at-home kits to customers that included LEDs and low/no cost ways to save energy. The Company also offered a deep discount promotion on A-line multi-packs in select stores.

Table 7: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Home Lighting & Recycling	406,365	330,500	$ 1,249,993	$1,199,817	2,089	973	12,849,572	5,642,488	3.85

Deviations from Goal
In 2020, the Home Lighting and Recycling Program exceeded its energy and demand savings goal. In late 2019, the US Department of Energy (DOE) released two new rules that would roll back lighting efficiency standards under the Energy Independence and Security Act of 2007 ("EISA") that were set to take effect on January 1, 2020. As a result of this roll back, SPS was not required to apply the EISA Tier 2 baselines that had been used in its 2019 Triennial Plan Filing, allowing SPS to claim more savings than originally forecasted. Budget savings were attributed to the continued reduction in the price of LED bulbs and the lower cost of buy-downs.

Changes in 2020
None.

Heat Pump Water Heaters

The Heat Pump Water Heater ("HPWH") 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 a heating, ventilation, and air conditioning 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.

SPS marketed the program through targeted direct mail which was further supported by social media and Google ads. The marketing was aimed at increasing customer and contractor awareness of the program.

Table 8: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Heat Pump Water Heaters	0	55	$ 43,402	$ 44,500	0	25	0	185,716	0.00

Deviations from Goal
The program did not meet the forecasted savings goal and was under budget for the year due to the lack of participation.

Changes in 2020
This program was added to the portfolio in PY 2020 after the Company received approval to introduce the offering in its most recent Triennial Filing.

School Education Kits

The School Education Kits Program provides classroom and in-home activities that enable students and parents to install energy efficiency and water conservation products in their homes. Each participating student receives a kit to take home which includes four 9-watt LEDs, an efficient showerhead, a kitchen faucet aerator, and a bathroom faucet aerator. The program is targeted at fifth grade students. A third-party contractor fully implemented the School Education Kits program, including recruiting and training teachers, providing all materials, and tracking participation by schools and teachers. Energy savings are based on the number of measures that are installed in the homes of the students. Students complete surveys to determine the measure installation rates.

Table 9: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
School Education Kits	2,557	2,500	$ 178,593	$ 145,417	15	10	561,571	376,378	0.85

Deviations from Goal
The program exceeded its participation and savings goals while also exceeding its budget for the year.

Changes in 2020
The program swapped the two 11W LED bulbs for two additional 9W LED bulbs, and exchanged 1.0 GPM bathroom faucet aerators for 0.5 GPM aerators, in order to decrease costs and increase savings per kit.

Smart Thermostat Program

The Smart Thermostat Program utilizes the new ENERGY STAR connected Thermostat specification. Eligible customers will receive a $50 rebate for an ENERGY STAR connected thermostat through the Xcel Energy Inc. ("Xcel Energy") storefront, paper applications and online applications that will be available to both end use customers and trade allies. Customers must receive electric service from SPS in order to be eligible for a rebate.

Table 10: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Smart Thermostat	75	1,671	$ 33,739	$ 142,500	0	0	46,291	825,149	0.29

Deviations from Goal
The program did not meet the forecasted savings goal and was under budget for the year due to the lack of participation. SPS plans to do additional marketing and outreach efforts in PY2021 to help drive participation back into the program.

Changes in 2020
None.

Business Segment

SPS's Business Segment in New Mexico consists of nearly 24,700 commercial, industrial, and agricultural customer premises. In 2020, SPS offered one business program made up of several product offerings with opportunities for all commercial and industrial customers to participate.

In total, SPS spent $4,992,236 on these programs and achieved 2,990 kW and 19,281,739 kWh savings at the net customer level.

Overall, the Business Segment of programs was cost-effective with a UCT of 1.50. Savings achievements were 121% of the annual kWh goal. The Business Segment is discussed in more detail below.

Business Comprehensive

The Business Comprehensive Program bundles traditional prescriptive and custom products in a way that is more easily understood by customers. Business Comprehensive encompasses the Recommissioning, Cooling Efficiency, Custom Efficiency, Large Customer Self-Direct, Lighting Efficiency, and Motor & Drive Efficiency products. Customers can choose to participate in any or all of the individual program components.

Table 11: 2020 Program Achievements

Program	Actual Participants	Forecasted Participants	Actual Spend	Budgeted Spend	Peak Demand Savings kW (Net Customer)	Peak Demand Goal kW (Net Customer)	Annual Energy Savings kWh (Net Customer)	Energy Savings Goal kWh (Net Customer)	Utility Cost Test
Business Comprehensive	144	477	$ 4,992,236	$4,798,684	2,990	2,263	19,281,739	15,985,365	1.50

Deviations from Goal
The program saw increased participation in the oil and gas sector as a result of SPS's increased efforts to target the growing market within the service territory. Additionally, the Motors program saw higher than anticipated participation in the prescriptive Variable Frequency Drive ("VFD") measure, and several large custom VFD projects were rebated in 2020.

Changes in 2020
None.

Planning & Research Segment

The Planning and Research Segment consists of internal utility functions (not customer-facing), which support the direct impact programs. The overall purpose of the Planning and Research Segment is to:

- provide strategic direction for SPS's EE/LM programs;
- ensure regulatory compliance with energy efficiency legislation and rules;
- guide SPS internal policy issues related to energy efficiency;
- train SPS Marketing staff for compliance and cost-effectiveness;
- evaluate program technical assumptions, program achievements, and marketing strategies;
- provide oversight of all evaluation, measurement, and verification planning and internal policy guidance;
- provide segment and target market information;
- analyze overall effects to both customers and the system of SPS's energy efficiency portfolio;
- measure customer satisfaction with SPS's energy efficiency efforts; and
- develop new conservation and load management programs.

The segment includes EE/LM-related expenses for Demand Side Management ("DSM") Planning & Administration, Market Research, M&V, and Product Development. Each Planning and Research program is discussed below.

Planning & Administration

The Planning and Administration area manages all EE/LM regulatory filings (including this Annual Report), directs and carries out benefit-cost analyses, provides tracking results of energy conservation achievements and expenditures, and analyzes and prepares cost recovery reports. Planning and Administration, which includes outside legal assistance, coordinates and participates in all DSM-related rulemaking activities and litigated hearings. This area also supports the DSM component of resource planning and provides planning and internal policy guidance to meet all EE/LM regulatory requirements. These functions are needed to ensure

a cohesive and high-quality energy efficiency portfolio that meets legal requirements as well as the expectations of SPS's customers, regulators, and Commission Staff.

Deviations from Goal
None.

Changes in 2020
None.

Market Research

The Market Research group spearheads energy efficiency-related research efforts that are used to inform SPS on EE/LM Strategy. In 2020, the Market Research group oversaw the SPS portion of several Xcel Energy-wide subscriptions such as SPS's E-Source Membership and the Dun & Bradstreet list purchase. A 2020 New Mexico Residential Energy Use study was also conducted.

Deviations from Goal
SPS spent less than the forecasted budget. The deviation is largely due to delayed purchase of residential data intended to assist with the development of customer segments to more effectively target market EE programs.

Changes in 2020
Market Research continued to field its proprietary Residential Relationship Study through October 2020 to provide more frequent feedback about customer attitudes concerning energy.

Measurement & Verification

The M&V budget funds the internal staff from the Planning and Administration area who oversee M&V planning, data collection, and internal policy guidance. In addition, this area coordinates the day-to-day activities providing necessary information and program tracking data to the Evaluator, as well as serving on the Commission's Evaluation Committee.

17.7.2.14.D(1) NMAC requires that utilities submit the most recent M&V Report conducted by the approved Evaluator with its Annual Report. The 2020 M&V Report is provided as Appendix A of this document. In compliance with the reporting requirements, the 2020 M&V Report includes:

- expenditure documentation, at both the total portfolio and individual program levels;
- measured and verified savings;
- evaluation of cost-effectiveness of all of SPS's EE/LM programs;
- deemed savings assumptions and all other assumptions used by the Evaluator;

- description of the M&V process, including confirmation that:
  - measures were actually installed;
  - installations meet reasonable quality standards; and
  - measures are operating correctly and are expected to generate the predicted savings.

Deviations from Goal
SPS spent less than the forecasted indirect M&V budget which is primarily used for TRM updates and portfolio wide M&V activities.

Changes in 2020
None.

Product Development

Product Development identifies, assesses, and develops new energy efficiency and load management products and services. The product development process starts with ideas and concepts from customers, regulators, energy professionals, interest groups, and SPS staff. These ideas are then carefully screened and only ideas with the most potential are selected for the development process.

Deviations from Goal
SPS spent less than the forecasted budget due to lower than expected consulting costs.

Changes in 2020
None.

Consumer Education

Consumer Education is an indirect program that focuses primarily on creating awareness of energy efficiency by providing residential customers with information on what they can do to save energy and money by reducing their energy usage. The company employs a variety of resources and channels to communicate conservation and energy efficiency messages directed towards Xcel Energy's tools, rebates, programs and energy saving tips. Awareness driving tactics include: the Xcel Energy website, digital content, community outreach events and sponsorships, social media channels, public library partnerships.

The Consumer Education Program is targeted at all SPS New Mexico residential electric customers. In spreading its messages, the Consumer Education program focuses on:

- sponsorship of community events supporting residential conservation and energy efficiency;
- web presence on xcelenergy.com;
- social media (Facebook, Twitter, blogs, etc.);

- digital content;
- Power Check meters and materials placed in public libraries;
- community-based marketing events;
- customer feedback surveys and customized post-event emails following outreach events;

Deviations from Goal
SPS spent less than the forecasted budget due to cancelled events and in person engagement and educational opportunities because of the COVID-19 pandemic.

Changes in 2020
The Consumer Education Program was added to the portfolio in PY 2020 after the Company received approval to reintroduce the offering in its most recent Triennial Filing.

Section IV: 2020 Incentive Mechanism True-Up

SPS exceeded its 2020 achievement goal of 36.885 GWh by 10.107 GWh, resulting in an earned incentive of $685,084. When compared to the collected amount ($618,746), SPS needs to collect $ 66,338 (plus interest) from customers related to the 2020 incentive.

Appendix A: Measurement & Verification Report:

SPS 2020 Program Year

Provided by Evergreen Economics

Evaluation of the 2020 Southwestern Public Service Company's Energy Efficiency Programs

Final Report

May 13, 2021

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

ECOMETRIC

RESEARCH & POLLING INC

Table of Contents

Executive Summary

This report presents the independent evaluation results for the Southwestern Public Service Company (SPS) energy efficiency programs for program year 2020 (PY2020).

The SPS programs and evaluation requirements were first established in 2005 by the New Mexico legislature's passage of the 2005 Efficient Use of Energy Act (EUEA).[1] The EUEA requires public utilities in New Mexico, in collaboration with other parties, to develop cost-effective programs that reduce energy demand and consumption. Utilities are required to submit their proposed portfolio of programs to the New Mexico Public Regulation Commission (NMPRC) for approval. As a part of its approval process, the NMPRC must find that the program portfolio is cost effective based on the Utility Cost Test (UCT).

An additional requirement of the EUEA is that each program must be evaluated at least once every three years. As part of the evaluation requirement, SPS must submit to the NMPRC a comprehensive evaluation report prepared by an independent program evaluator. As part of the reporting process, the evaluator must measure and verify energy and demand savings, determine program cost effectiveness, assess how well the programs are being implemented, and provide recommendations for program improvements as needed.

Within this regulatory framework, the Evergreen evaluation team was chosen to be the independent evaluator for SPS in May 2017, and a project initiation meeting was held with SPS staff on September 14, 2017. The Evergreen evaluation team consisted of the following firms:

- **Evergreen Economics** was the prime contractor and managed all evaluation tasks and deliverables;
- **EcoMetric** provided engineering capabilities and led the review of SPS's savings estimates; and
- **Research & Polling** fielded all the phone surveys.

[1] NMSA §§ 62-17-1 *et seq* (SB 644). Per the New Mexico Public Regulation Commission Rule[1]Pursuant to the requirements of the EUEA, the NMPRC issued its most recent *Energy Efficiency Rule* (*17.7.2 NMAC*) effective September 26, 2017, that sets forth the NMPRC's policy and requirements for energy efficiency and load management programs. This Rule can be found online at http://164.64.110.134/parts/title17/17.007.0002.html

For PY2020, the following SPS programs were evaluated:

- Business Comprehensive
- Energy Feedback
- Smart Thermostats

For each of the evaluated programs, the evaluation team estimated realized gross and net impacts (kWh and kW) and calculated program cost effectiveness using the UCT.[2] A brief process evaluation was also conducted for the Business Comprehensive program based on a survey of program participants.

The remaining programs that were not evaluated for PY2020 are still summarized in this report. The accomplishments for the non-evaluated programs are reported using the following parameters:

- Gross impacts (kWh, kW) were calculated using the SPS *ex ante* values for annual savings;
- Net impacts were calculated from the gross impacts using the existing *ex ante* net-to-gross (NTG) ratio; and
- Cost effectiveness calculations were calculated using the *ex ante* net impact values and cost data as reported by SPS.

The analysis methods used for the evaluated PY2020 programs are summarized as follows:

Business Comprehensive. This program offers rebates to SPS's commercial customers for the installation of energy efficient equipment. The measures eligible for the Business Comprehensive program are primarily prescriptive in nature, but the program also includes custom projects. Gross impacts were estimated based on a review of the deemed savings values combined with engineering desk reviews of a statistically representative sample of projects covering a range of project sizes and major measure types. A phone survey of participating customers was used to verify installation and to collect information needed for a self-report analysis of free ridership to determine net impacts.

Energy Feedback. This program provides participating customers with information on their energy consumption by providing a comparison with a matched set of similar households. The feedback on energy use, combined with tips for reducing energy use, is designed to create sustained reductions in consumption. Net impacts were estimated using a billing regression and data from both the participants and control group customers.

[2] The evaluation team consists of Evergreen Economics, EcoMetric, Demand Side Analytics, and Research & Polling.

Smart Thermostats. There was limited participation in this program for PY2020, and so the impact evaluation consisted of a review of the deemed savings results. A net-to-gross ratio was assigned based on a review of evaluation studies from other states that had a similar program design.

SPS incurred costs for their new Heat Pump Water Heater program but did not claim any savings in 2020. The program planning costs were included in the cost effectiveness calculations for PY2020.

Table 1 summarizes the PY2020 evaluation methods.

Table 1: Summary of PY2020 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Survey	Engineering Desk Reviews	Billing Regression
Business Comprehensive	◆	◆	◆	
Energy Feedback				◆
Smart Thermostats	◆			

The results of the PY2020 impact evaluation are shown in Table 2 (kWh) and Table 3 (kW), with the programs evaluated in 2020 highlighted in blue. A summary of the NTG ratios by program is shown in Table 4. For the programs not evaluated this year, the totals are based on the *ex ante* savings and NTG values from the SPS tracking data.

Table 2: PY2020 Savings Summary - kWh[3]

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Business Comprehensive						
Cooling Efficiency	15	337,038	1.1086	373,637	0.7309	273,091
Custom Efficiency	18	7,569,512	1.0030	7,592,581	0.7309	5,549,418
Lighting Efficiency	49	2,097,205	1.0834	2,272,133	0.7309	1,660,702
Motors Efficiency	62	15,424,043	1.0466	16,142,465	0.7309	11,798,528
Home Lighting & Recycling	406,365	18,097,989	1.0000	18,097,989	0.7100	12,849,572
Energy Feedback	33,370	3,066,635	1.1656	3,574,425	N/A*	3,574,425
Residential Cooling	193	323,703	1.0000	323,703	0.5721	185,179
School Education Kits	2,557	561,571	1.0000	561,571	1.0000	561,571
Home Energy Services	257	1,625,673	1.0000	1,625,673	0.9708	1,578,203
Home Energy Services Low Income	6,847	8,903,188	1.0000	8,903,188	1.0000	8,903,188
Smart Thermostat	75	65,475	1.0000	65,475	0.7070	46,291
Total	**449,808**	**58,072,032**		**59,532,840**		**46,980,168**

*Energy Feedback results are calculated as net impacts throughout, NTG ratio not applied

[3] All kWh savings shown in this table and throughout the report are at the customer level.

Table 3: PY2020 Savings Summary - kW[4]

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Business Comprehensive						
Cooling Efficiency	15	103	1.1519	103	0.7309	75
Custom Efficiency	18	952	0.9454	952	0.7309	696
Lighting Efficiency	49	360	1.1546	360	0.7309	263
Motors Efficiency	62	2,219	1.1967	2,219	0.7309	1,622
Home Lighting & Recycling	406,365	2,942	1.0000	2,942	0.7100	2,089
Energy Feedback	33,370	1,153	1.1656	1,153	N/A*	-
Residential Cooling	193	98	1.0000	98	0.5721	56
School Education Kits	2,557	15	1.0000	15	1.0000	15
Home Energy Services	257	140	1.0000	140	0.9708	136
Home Energy Services Low Income	6,847	774	1.0000	774	1.0000	774
Smart Thermostat	75	-	-	0	0.7070	0
Total	**449,808**	**8,756**		**8,756**		**5,726**

*Energy Feedback results are calculated as net impacts throughout, NTG ratio not applied

[4] All kW savings shown in this table and throughout the report are peak coincident kW.

Table 4: PY2020 Net-to-Gross Ratios

Program	NTG Ratio
Business Comprehensive	0.7309
Home Lighting & Recycling	0.7100
Energy Feedback	N/A
Residential Cooling	0.5721
School Education Kits	1.0000
Home Energy Services	0.9955
Smart Thermostat	0.7070
Overall Portfolio	**0.7891**

Using net realized savings from this evaluation and cost information provided by SPS, the evaluation team calculated the ratio of benefits to costs for each of SPS's programs and for the portfolio overall. The evaluation team calculated cost effectiveness using the UCT, which compares the benefits and costs to the utility or program administrator implementing the program.[5] The evaluation team conducted this test in a manner consistent with the California Energy Efficiency Policy Manual.[6]

The results of the UCT are shown below in Table 5. All programs had a UCT of greater than 1.00 with the exception of the Residential Cooling, School Education Kits, and Smart Thermostat programs. The portfolio overall was found to have a UCT ratio of 1.87.

[5] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
[6] Version 5. 2013.
http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPolicyManualV5forPDF.pdf

Table 5: PY2020 Cost Effectiveness

Program	Utility Cost Test (UCT)
Business Comprehensive	1.50
Home Lighting & Recycling	3.85
Energy Feedback	1.12
Residential Cooling	0.53
School Education Kits	0.85
Home Energy Services	2.23
Smart Thermostat	0.29
Overall Portfolio	**1.87**

Based on the data collection and analysis conducted for this evaluation, the evaluation team found that, overall, SPS is operating high quality programs that are achieving significant energy and demand savings and producing satisfied participants.

The impact evaluation—which included engineering desk reviews for a sample of Business Comprehensive projects and statistical models for Energy Feedback—resulted in relatively high realized gross savings. Adjustments to savings based on the Business Comprehensive desk reviews were due to two main factors: project-specific calculation inputs were documented solely in the processing database, and adjustments were made when existing lighting fixture wattages were not documented in the tracking data. The evaluation team has provided a number of recommendations to improve savings values that include documenting calculations and adjustments to project savings, utilizing project-specific information when available, and other minor improvements to savings assumptions or algorithms.

1 Evaluation Methods

The analysis methods used for the evaluated PY2020 programs are summarized as follows:

Business Comprehensive. This program offers rebates to SPS's commercial customers for the installation of energy efficient equipment. The measures eligible for the Business Comprehensive program are primarily prescriptive in nature, but the program also includes custom projects. Gross impacts were estimated based on a review of the deemed savings values combined with engineering desk reviews of a statistically representative sample of projects covering a range of project sizes and major measure types. A phone survey of participating customers was used to verify installation and to collect information needed for a self-report analysis of free ridership to determine net impacts.

Energy Feedback. This program provides participating customers with information on their energy consumption by providing a comparison with a matched set of similar households. The feedback on energy use, combined with tips for reducing energy use, is designed to create sustained reductions in consumption. Net impacts were estimated using a billing regression and data from both the participants and control group customers.

Smart Thermostats. There was limited participation in this program for PY2020, and so the impact evaluation consisted of a review of the deemed savings results. A net-to-gross ratio was assigned based on a review of evaluation studies from other states that had a similar program design.

In PY2020, SPS incurred costs for their new Heat Pump Water Heater program. This program did not have any savings this year, but the program planning costs were included in the cost effectiveness calculations for PY2020.

1.1 Phone Surveys

Participant phone surveys were fielded in early 2021 for participants in the Business Comprehensive program. The surveys averaged about 15 to 20 minutes in length and covered the following topics:

- Verification of measures included in SPS's program tracking database;
- Satisfaction with the program experience;
- Survey responses for use in the free ridership calculations;
- Participation drivers and barriers; and
- Customer characteristics.

Additional interviews were also conducted by engineers if additional information was needed for the individual project desk reviews.

Given the relatively low number of participants in the Business Comprehensive program, the original goal was to complete as many surveys as possible, and a census of participants was contacted for these programs. Ultimately, 22 phone surveys were completed with Business Comprehensive participants (Table 6).

Table 6: Business Comprehensive Phone Survey Summary

Program	Number of Customers with Valid Contact Info	Completed Surveys
Business Comprehensive	68	22

The final survey instrument for the Business Comprehensive program is included in Appendix A.

1.2 Engineering Desk Reviews

In order to verify gross savings estimates, the evaluation team conducted engineering desk reviews for a sample of the projects in the Business Comprehensive program. The goal of the desk reviews was to verify equipment installation, operational parameters, and estimated savings.

Both prescriptive and custom projects received desk reviews that included the following:

- Review of project description, documentation, specifications, and tracking system data;
- Confirmation of installation using invoices and/or post-installation reports; and
- Review of post-installation reports detailing differences between installed equipment and documentation, and subsequent adjustments made by the program implementer.

For projects in the Business Comprehensive program that relied on deemed savings values for prescriptive measures, the engineering desk reviews included the following:

- Review of measures available in the New Mexico TRM and the SPS Technical Assumptions documents to determine the most appropriate algorithms that apply to the installed measure;
- Recreation of savings calculations using TRM/Technical Assumptions algorithms and inputs as documented by submitted specifications, invoices, and post-installation inspection reports; and
- Review of TRM/Technical Assumptions algorithms to identify candidates for future updates and improvements.

For the custom projects included in the Business Comprehensive program, the engineering desk reviews included the following:

- Review of engineering analyses for technical soundness, proper baselines, and appropriate approaches for the specific applications;
- Review of methods of determining demand (capacity) savings to ensure they are consistent with program and utility methods for determining peak load/savings;
- Review of input data for appropriate baseline specifications and variables such as weather data, bin hours, and total annual hours to determine if they are consistent with facility operation; and
- Consideration and review for interactive effects between affected systems.

1.3 Billing Regression

As in years past, a billing regression model was used to evaluate the Energy Feedback program. The general framework for the billing regression model is to estimate post-participation energy consumption while controlling for the timing of the measures installation and changes in weather over the analysis period. The model framework was tailored to match the individual program, as discussed below.

1.3.1 Energy Feedback

For the Energy Feedback program, a billing regression was used to estimate energy savings based on an analysis of customer bills before and after they received the energy feedback reports. The billing regression uses a fixed effects specification and includes variables for monthly energy consumption, weather (heating and cooling degree days), and other variables to control for external influences on energy use. The analysis dataset is a randomized control trial (RCT) design that includes both a participating (treatment) group and a matched control group of customers. Since data on the control group are included in the model, the resulting impact estimates are interpreted as net impacts.

Specific modeling details are included in the following *Impact Evaluation Results* chapter.

1.4 Net Impact Analysis

1.4.1 Self-Report Approach

The evaluation team estimated net impacts for the Business Comprehensive program using the self-report approach. This method uses responses to a series of carefully constructed survey questions to learn what participants would have done in the absence of a utility's program. The goal is to ask enough questions to paint an adequate picture of the influence of the program activities (rebates and other program assistance) within the confines of what can reasonably be asked during a phone survey.

With the self-report approach, specific questions that are explored include the following:

- What were the circumstances under which the customer decided to implement the project (that is, new construction, retrofit/early replacement, replace-on-burnout)?
- To what extent did the program accelerate installation of high efficiency measures?
- What were the primary influences on the customer's decision to purchase and install the high efficiency equipment?
- How important was the program rebate on the decision to choose high efficiency equipment?
- How would the project have changed if the rebate had not been available (for example, would less efficient equipment have been installed, would the project have been delayed, etc.)?
- Were there other program or utility interactions that affected the decision to choose high efficiency equipment (for example, was there an energy audit done, has the customer participated before, is there an established relationship with a utility account representative, was the installation contractor trained by the program)?

The method used for estimating free ridership (and ultimately the net-to-gross [NTG] ratio) using the self-report approach is based on the 2017 Illinois Statewide Technical Reference Manual.[7] For the SPS programs, questions regarding free ridership were divided into several primary components:

- A ***Program Component*** series of questions that asked about the influence of specific program activities (rebate, customer account rep, contractor recommendations, other assistance offered) on the decision to install energy efficient equipment;
- A ***Program Influence*** question, where the respondent was asked directly to provide a rating of how influential the overall program was on their decision to install high efficiency equipment; and
- A ***No-Program Component*** series of questions, based on the participant's intention to carry out the energy-efficient project without program funds or due to influences outside of the program.

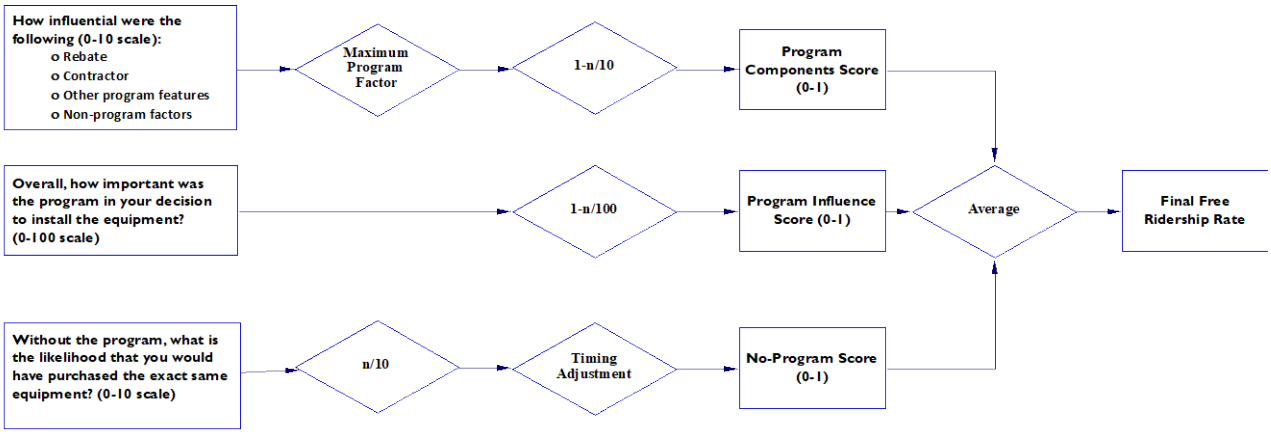
Each component was assessed using survey responses that rated the influence of various factors on the respondent's equipment choice. Since opposing biases potentially affect the main components, the *No-Program* component typically indicates higher free ridership than the *Program Component/Influence* questions. Therefore, combining these opposing influences helps mitigate the potential biases. This framework also relies on multiple questions that are

[7] The full Illinois TRM can be found at http://www.ilsag.info/il_trm_version_6.html

crosschecked with other questions for consistency. This prevents any single survey question from having an excessive influence on the overall free ridership score.

Figure 1 provides a simplified version of the scoring algorithm. In some cases, multiple questions were asked to assess the levels of efficiency and purchase timing in absence of the program. For each of the scoring components, the question responses were scored so that they were consistent and resulted in values between 0 and 1. Once this was accomplished, the three question components were averaged to obtain the final free ridership score.

Figure 1: Self-Report Free Ridership Scoring Algorithm



Source: Adapted by Evergreen Economics from the 2017 Illinois TRM.

More detail on each of the three question tracks is provided below.

Program Component Questions

The ***Program Component*** battery of questions was designed to capture the influence of the program on the equipment choice. These questions were also designed to be as comprehensive as possible so that all possible channels through which the program is attempting to reach the customer were included.

The type of questions included in the Program Component question battery included the following:

- How influential were the following on your decision to purchase your energy efficient equipment?
  - Rebate amount
  - Contractor recommendation
  - Utility advertising/promotions
  - Technical assistance from the utility (e.g., energy audit)
  - Recommendation from utility customer representative (or program implementer)

- Previous participation in a utility efficiency program

As shown at the top of Figure 1, the question with the highest value response (i.e., the program factor that had the greatest influence on the decision to install a high efficiency measure) was the one that was used in the scoring algorithm as the Program Component score.

Program Influence Question

A separate ***Program Influence*** question asked the respondent directly to rate the combined influence of the various program activities on their decision to install energy efficient equipment. This question allowed the respondent to consider the program as a whole and incorporated other forms of assistance (if applicable) in addition to the rebate. Respondents were also asked about potential non-program factors (condition of existing equipment, corporate policies, maintenance schedule, etc.) to put the program in context with other potential influences.

The Program Influence question also provided a consistency check so that the stated importance of various program factors could be compared across questions. If there appeared to be inconsistent answers across questions (rebate was listed as very important in response to one question but not important in response to a different question, for example), then the interviewer asked follow-up questions to confirm responses. The verbatim responses were recorded and were reviewed by the evaluation team as an additional check on the free ridership results.

No-Program Questions

A separate battery of ***No-Program*** component questions was designed to understand what the customer might have done if the SPS rebate program had not been available. With these questions, we attempted to measure how much of the decision to purchase the energy efficient equipment was due to factors that were unrelated to the rebate program or other forms of assistance offered by SPS.

The types of questions asked for the No-Program component included the following:

- If the program had not existed, would you have
  - Purchased the exact same equipment?
  - Chosen the same energy efficiency level?
  - Delayed your equipment purchase?
- Did you become aware of the utility rebate program before or after you chose your energy efficient equipment?

The question regarding the timing of awareness of the rebate was used in conjunction with the importance rating the respondent provided in response to the earlier questions. If the respondent had already selected the high efficiency equipment prior to learning about the rebate **and** said

that the rebate was the most important factor, then a downward adjustment was made on the influence of the rebate in calculating the Program Component score.

The responses from the No-Program questions were analyzed and combined with a timing adjustment to calculate the No-Program score, as shown in Figure 1. The timing adjustment was made based on whether or not the respondent would have delayed their equipment purchase if the rebate had not been available. If the purchase would have been delayed by one year or more, then the No-Program score was set to zero, thereby minimizing the level of free ridership for this algorithm component only.

Free Ridership and NTG Calculation

The values from the Program Component score, the Program Influence score, and the No-Program score were averaged in the final free ridership calculation; the averaging helped reduce potential biases from any particular set of responses. The fact that each component relied on multiple questions (instead of a single question) also reduced the risk of response bias. As discussed above, additional survey questions were asked about the relative importance of the program and non-program factors. These responses were used as a consistency check, which further minimized potential bias.

Once the self-report algorithm was used to calculate free ridership, the total NTG ratio was calculated using the following formula:

$$Net\text{-}to\text{-}Gross\ Ratio = (1 - Free\ Ridership\ Rate)$$

1.5 Realized Gross and Net Impact Calculation

The final step in the impact evaluation process is to calculate the realized gross and net savings, based on the program-level analysis described above. The **Gross Realized Savings** are calculated by taking the original *ex ante* savings values from the participant tracking databases and adjusting them using an **Installation Adjustment** factor (based on the count of installed measures verified through the phone surveys) and an **Engineering Adjustment** factor (based on the engineering analysis, desk reviews, etc.):

$$\text{Gross Realized Savings} = (\textit{Ex Ante}\ \text{Savings})*(\text{Installation Adjustment})*(\text{Engineering Adjustment Factor})$$

Net Realized Savings are then determined by multiplying the Gross Realized Savings by the net-to-gross ratio:

$$\text{Net Realized Savings} = (\text{Net-to-Gross Ratio})*(\text{Gross Realized Savings})$$

1.6 Cost Effectiveness

The cost effectiveness of the SPS programs was tested using the Utility Cost Test (UCT). In the UCT, the benefits of a program are considered to be the present value of the net energy saved, and the costs are the present value of the program's administrative costs plus incentives paid to customers. In order to perform the cost effectiveness analysis, the evaluation team obtained the following from SPS:

- Avoided cost of energy (costs per kWh over a 20+ year time horizon);
- Avoided cost of capacity (estimated cost of adding a kW/year of generation, transmission, and distribution to the system);
- Avoided cost of CO2 (estimated monetary cost of CO2 per kWh generated);
- Avoided transmission and distribution costs;
- Discount rate;
- Line loss factor; and
- Program costs (all expenditures associated with program delivery).

For all programs, the Evergreen team took the energy savings and effective useful life values from the final PY2020 tracking data submitted by SPS. The evaluation team reviewed the effective useful life values and compared them to the values contained in the New Mexico TRM to confirm that the values assumed by SPS were reasonable. The final cost-effectiveness analyses used net verified impacts, which take into account NTG ratios and engineering adjustment factors.

SPS also provided the evaluation team with measure-specific net present values for the avoided cost per kWh saved over each measure's life. These values took into account measure load shapes, hourly avoided energy costs, measure effective useful lives, the SPS discount rate, and line loss factors.

Additionally, Section 17.7.2.9.B(4) of the New Mexico Energy Efficiency Rule allows utilities to claim utility system economic benefits for low income programs equal to 20 percent of the calculated energy benefits. We applied the 20 percent adder to the benefits calculated for the Home Energy Services Low Income program.

The evaluation team input the savings and cost data into a cost effectiveness model that calculated the benefits, costs, and benefit-cost ratio for each measure, project, or program entered, and rolled up the data into program-level UCT values.

2 Business Comprehensive Program

2.1 Business Comprehensive Gross Impacts

The *ex ante* 2020 impacts for the Business Comprehensive program are summarized in Table 7. In total, the Business Comprehensive program accounted for approximately 44 percent of *ex ante* energy impacts in SPS's overall portfolio.

Table 7: PY2020 Business Comprehensive Savings Summary

Sub-Program	# of Projects	Expected Gross kWh Savings	Expected Gross kW Savings
Cooling Efficiency	15	337,038	103
Custom Efficiency	18	7,569,512	952
Lighting Efficiency	49	2,097,205	360
Motors Efficiency	62	15,424,043	2,219
Total	**144**	**25,427,798**	**3,365**

The majority of the gross impact evaluation activities were devoted to engineering desk reviews of a sample of projects. For the desk reviews, the sample frame included projects in the Cooling, Custom, Lighting, and Motors sub-programs. The sample was stratified to cover a range of different measure types so that no single measure (often lighting) would dominate the desk reviews. The sample was also stratified based on total energy savings within each sub-program. In some cases, very large projects were assigned to a "certainty" stratum and were automatically added to the sample (rather than randomly assigned). This allowed for the largest projects to be included in the desk reviews and maximized the amount of savings covered in the sample. Overall, the sampling strategy ensured that a mix of projects in terms of both project size and measure type would be included in the desk reviews.

The final sample design is shown in Table 8. The resulting sample achieved a relative precision of 90/4.7 overall, with precision ranging from 90/2.8 to 90/8.0 for the individual sub-programs.

Table 8: Business Comprehensive Desk Review Sample

Sub-Program	Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Cooling	Cooling	Certainty	2	112,627	225,254	<1%	2
		1	13	8,599	111,784	<1%	6
Custom	Custom	Certainty	3	1,476,222	4,428,666	17.4%	3
		1	4	754,840	3,019,361	11.9%	2
		2	11	11,044	121,485	<1%	3
Lighting	Exterior	Certainty	2	129,468	258,936	1%	2
	Exterior	1	16	11,687	186,996	<1%	4
	Interior	Certainty	2	265,012	530,023	2.1%	2
	Interior	1	14	13,124	183,742	<1%	4
	Linear	Certainty	2	81,444	162,888	<1%	2
	Linear	1	13	59,586	774,620	3%	4
Motors	Non-VFD	Certainty	3	292,878	878,635	3.5%	3
	Non-VFD	1	9	133,585	1,202,263	4.7%	3
	Non-VFD	2	20	62,955	1,259,090	5.0%	2
	VFD	1	6	931,032	5,586,190	22.0%	3
	VFD	2	7	561,995	3,933,967	15.5%	3
	VFD	3	17	150,818	2,563,898	10.1%	3
Total			**144**	**297,466**	**25,427,798**	**100%**	**51**

As discussed in the *Evaluation Methods* chapter, the evaluation team determined gross realized impacts for the Business Comprehensive program by performing engineering desk reviews on the sample of projects.

For prescriptive projects, the evaluation team found multiple measures that existed in both the New Mexico TRM and the SPS Technical Assumptions. For most of these measures, the approaches were consistent between the two sources. However, certain lighting parameters (e.g., available building types) differed between these documents. Additionally, the lighting calculation

in SPS' Custom Project Application Excel workbook for custom lighting projects included a slight deviation from the New Mexico TRM. In cases where these sources were not consistent, the evaluation team examined the sources to determine which approach we believed offered greater detail and accuracy. Additionally, the evaluation team considered the 2019 New Mexico TRM to be the "safe harbor" and did not make negative adjustments to SPS calculations that correctly adhered to the TRM. Other incentivized measures existed only in the SPS Technical Assumptions, and so these algorithms were reviewed for accuracy and adjusted as necessary to verify savings estimates.

For custom projects, the evaluation team recreated savings analyses when possible (e.g., simple spreadsheet calculations). For more complex analyses (e.g., whole building energy simulations), the evaluation team reviewed the calculation methods and input values. When applicable, approaches and assumptions used in custom analyses were compared to those contained in the TRM.

Engineering adjustment factors varied from 100 percent for several reasons:

- **Project-specific calculation inputs documented solely in processing database.** For multiple projects, the evaluation team followed the algorithms contained in the SPS Technical Assumptions but arrived at savings that differed from those reported by SPS. Specific algorithm inputs and any project-specific adjustments were not documented in the materials available to the evaluation team for the desk reviews, which prevented the evaluation team from identifying the specific sources of discrepancies for roughly one-third of the sampled projects.
- **The *ex post* savings relied on the Xcel Input Wattage Guide to determine the baseline fixture wattages for prescriptive lighting projects.** The evaluation team relied on the values listed in the Xcel Input Wattage Guide to determine the appropriate baseline fixture wattage for prescriptive lighting projects. While the program tracking data had a field for the existing fixture type, the data did not include the existing fixture input wattage. Therefore, the evaluation team was not able to verify the baseline fixture wattage SPS used to calculate the *ex ante* savings for the prescriptive lighting projects.

Table 9 and Table 10 show the results of the desk reviews and how the resulting engineering adjustments were used to calculate realized savings. For the Business Comprehensive program overall, these adjustments resulted in average engineering adjustment factors of 1.0344 for kWh and 1.1415 for kW.

Table 9: PY2020 Business Comprehensive Gross kWh Impact Summary

Sub-Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings
Cooling Efficiency	15	337,038	1.1086	373,637
Custom Efficiency	18	7,569,512	1.0030	7,592,581
Lighting Efficiency	49	2,097,205	1.0834	2,272,133
Motors Efficiency	62	15,424,043	1.0466	16,142,465
Total	**144**	**25,427,798**	**1.0375**	**26,380,817**

Table 10: PY2020 Business Comprehensive Gross kW Impact Summary

Sub-Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings
Cooling Efficiency	15	103	1.1519	119
Custom Efficiency	18	952	0.9454	900
Lighting Efficiency	49	360	1.1546	416
Motors Efficiency	62	2,219	1.1967	2,656
Total	**144**	**3,365**	**1.1415**	**4,091**

A summary of the individual desk review findings for each of the Business Comprehensive projects is included in Appendix C.

2.2 Business Comprehensive Net Impacts

Net impacts for the Business Comprehensive program were calculated using NTG ratios from the participant phone survey. For the Cooling, Custom, Lighting, and Motors sub-programs, the NTG ratio was developed using the self-report method described in the *Evaluation Methods* chapter using participant phone survey data. The resulting program-level NTG ratio is 0.7309.

Table 11 and Table 12 summarize the PY2020 net impacts for the Business Comprehensive program using the NTG ratios described above. Net realized savings for the program overall are 19,255,096 kWh, and net realized demand savings are 4,305 kW.

Table 11: PY2020 Business Comprehensive Net kWh Impact Summary

Sub-Program	# of Projects	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Cooling Efficiency	15	373,637	0.7309	273,091
Custom Efficiency	18	7,592,581	0.7309	5,549,418
Lighting Efficiency	49	2,272,133	0.7309	1,660,702
Motors Efficiency	62	16,142,465	0.7309	11,798,528
Total	**144**	**26,380,817**	0.7309	**19,281,739**

Table 12: PY2020 Business Comprehensive Net kW Impact Summary

Sub-Program	# of Projects	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Cooling Efficiency	15	119	0.7309	87
Custom Efficiency	18	900	0.7309	658
Lighting Efficiency	49	416	0.7309	304
Motors Efficiency	62	2,656	0.7309	1,941
Total	**144**	**4,091**	0.7309	**2,990**

2.3 Participant Surveys

As part of the process evaluation, the evaluation team conducted telephone surveys with representatives from 22 participating companies that received rebates through the SPS Business Comprehensive program. The surveys were completed in February 2021 and ranged from 15 to 20 minutes in length.

The participant survey was designed to cover the following topics:

- Verifying the installation of measures included in the program tracking database;
- Collecting information on participants' satisfaction with their program experience;
- Survey responses for use in the free ridership calculations;
- Baseline data on energy use and/or equipment holdings;
- Participant drivers/barriers; and
- Additional process evaluation topics.

Throughout the analysis described here, we present the survey results as weighted percentages based on the proportion of savings represented by survey respondents relative to the total savings of all program participants.

Company Demographics

Participants were first asked demographic questions related to their businesses. Seventy-one percent of participants reported that they owned the building where their energy efficient measures were installed (Figure 2).

Figure 2: Building Ownership (n=21)

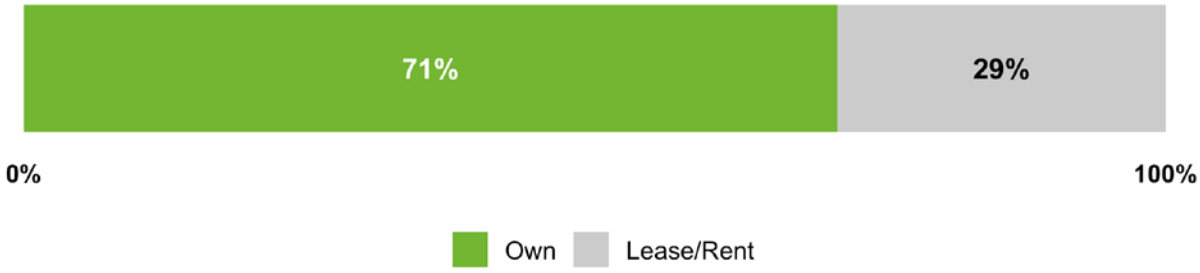


Figure 3 and Figure 4 summarize the survey respondents' number of employees and building size. Twenty-three percent of participants reported having 50 to 99 full-time employees, and 69 percent of participants stated that they occupied buildings of 50,000 square feet or more.

Figure 3: Number of Employees (n=18)

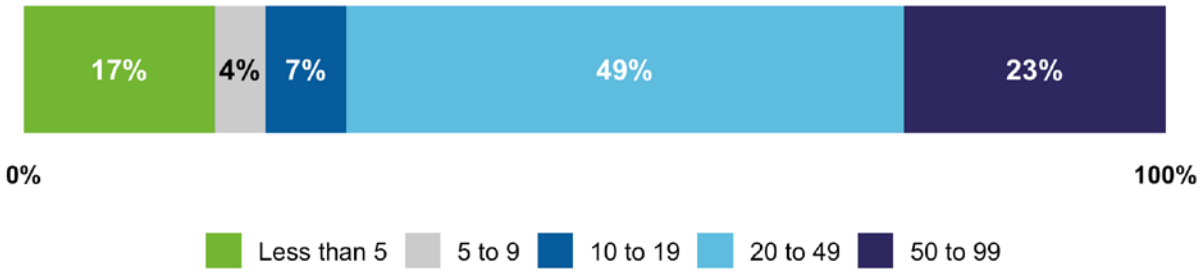
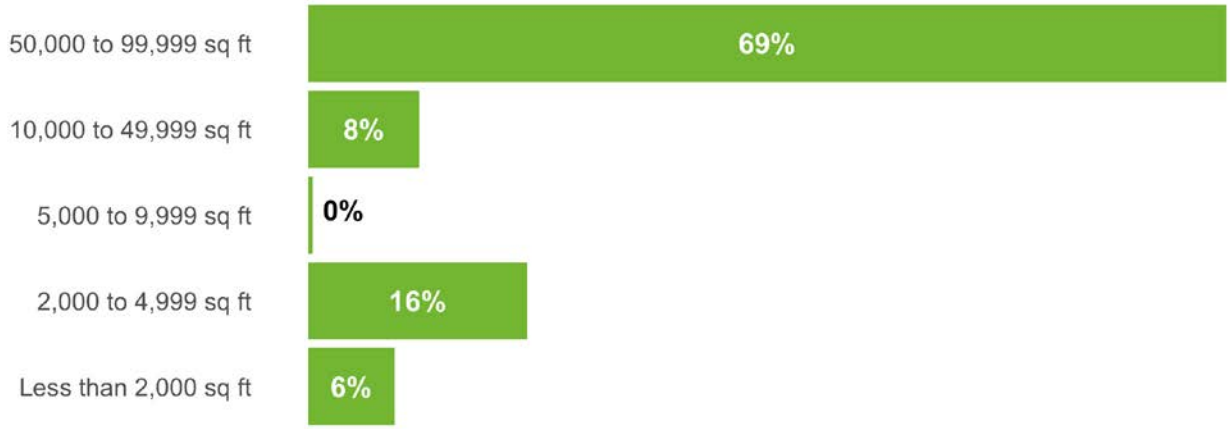
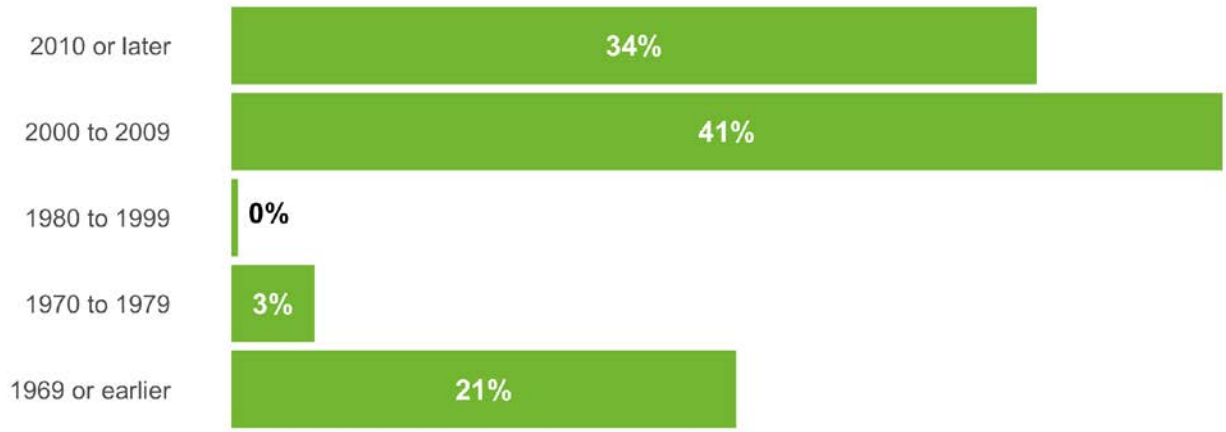


Figure 4: Building Size (n=12)



Additionally, Figure 5 shows that 41 percent of participants reported that their buildings were constructed from 2000 to 2009 and 34 percent in or after 2010. This is consistent with previous program years, where survey participants represented newer building projects.

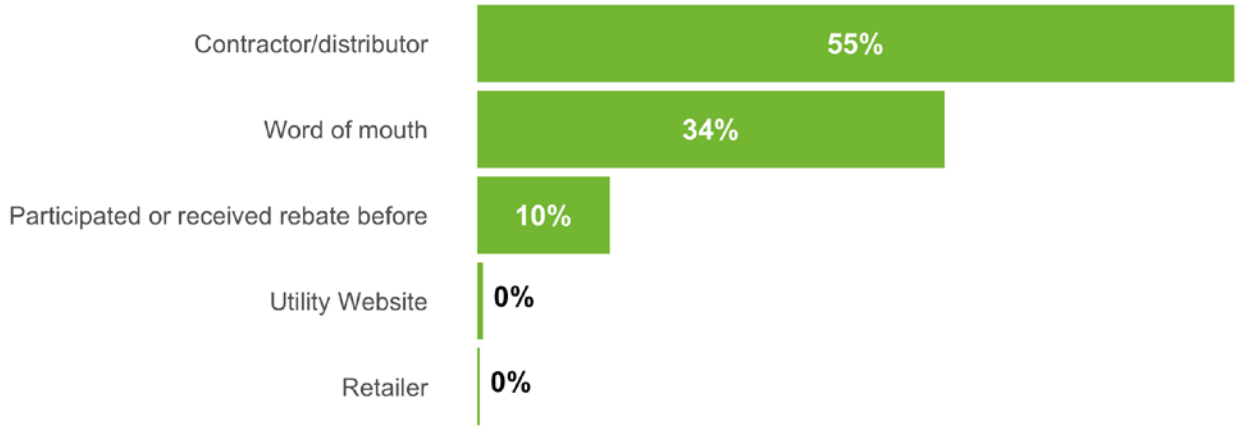
Figure 5: Building Age (n=14)



Sources of Awareness

Participants were then asked to recall how they first became aware of the Business Comprehensive program's rebates and assistance (Figure 6). While participants reported learning about the program through a variety of channels (e.g., word of mouth, contractors and/or distributors, previous participation, retailers, and the utility website), 55 percent of participants learned about the program offerings through a contractor or distributor.

Figure 6: Initial Source of Awareness (n=20)

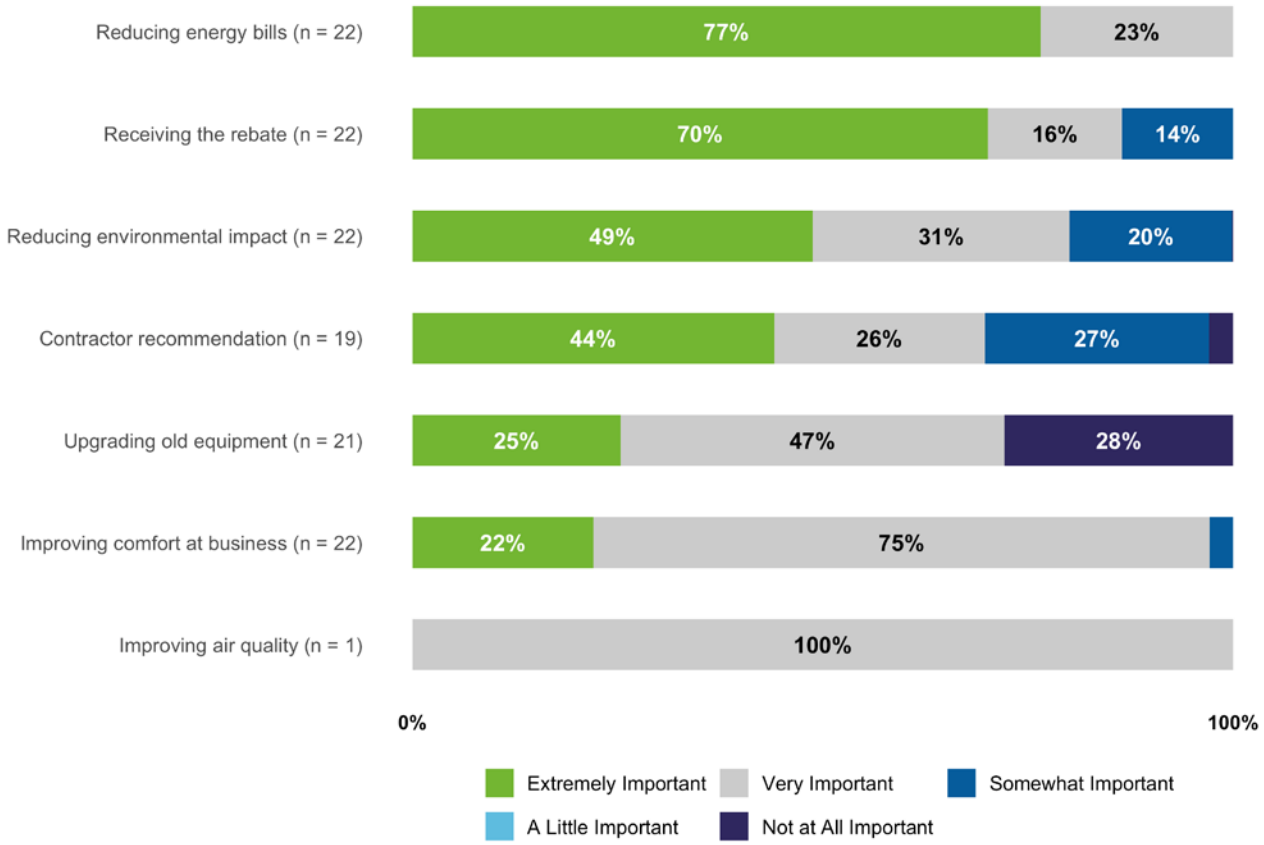


Motivations for Participation

Participants were then asked to rate a list of factors that might have influenced their decision to participate in the program (Figure 7). Reducing energy bills was the most influential factor across all respondents, with 77 percent of participants reporting that it was extremely important in their decision to participate in the program. Other factors that participants reported as important included receiving the rebate (70 percent rating it extremely important) and reducing environmental impact (49 percent rating it extremely important).

Conversely, participants were less likely to rank upgrading old equipment as an important factor, with 28 percent of participants stating that it was not at all important in their decision-making process.

Figure 7: Motivations for Participation

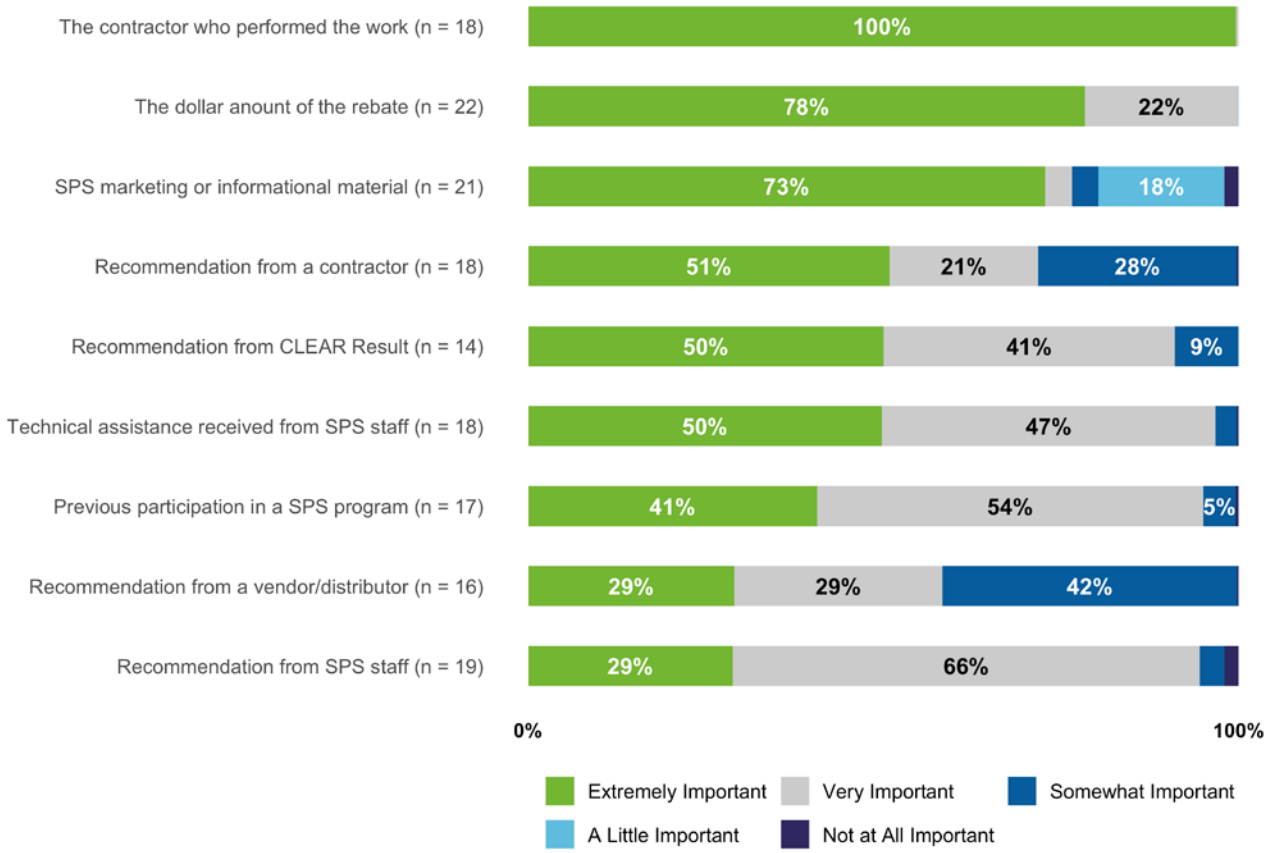


In addition, respondents were given a list of program and non-program factors that may have influenced their decision to participate in the program and were asked to rate each factor on a 0 to 10 point scale.[8] For program factors, as shown in Figure 8, participants were most likely to indicate the contractor who performed the work (100%), the dollar amount of the rebate (78%), and SPS marketing or informational material (73%) as extremely important in their decision to upgrade their equipment.

In contrast, recommendation from SPS staff was the least important program factor for participants, with only 29 percent indicating it was extremely important.

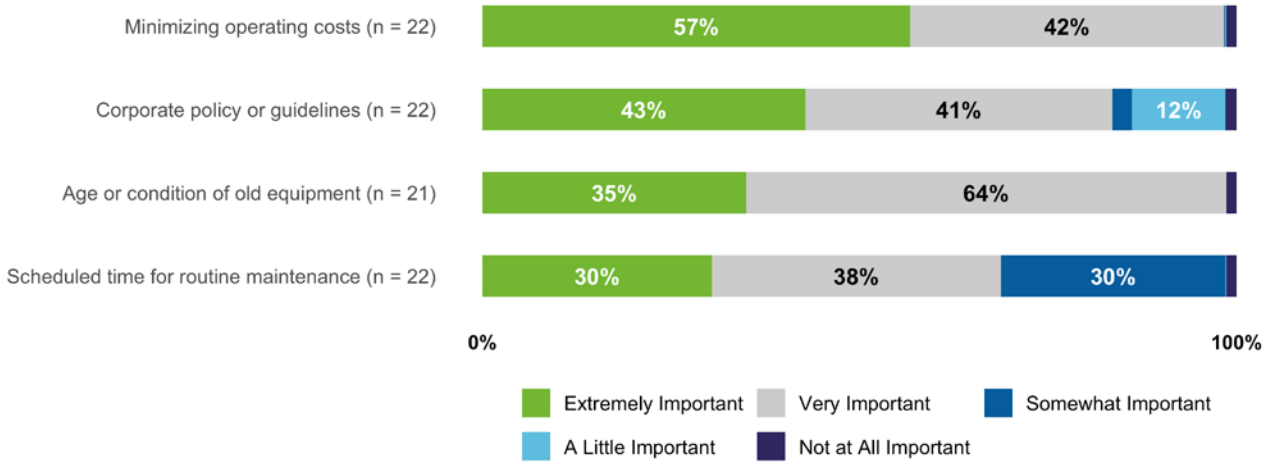
[8] On the 0 to 10-point scale, 0 indicated 'not at all important' and 10 indicated 'extremely important'.

Figure 8: Importance of Program Factors



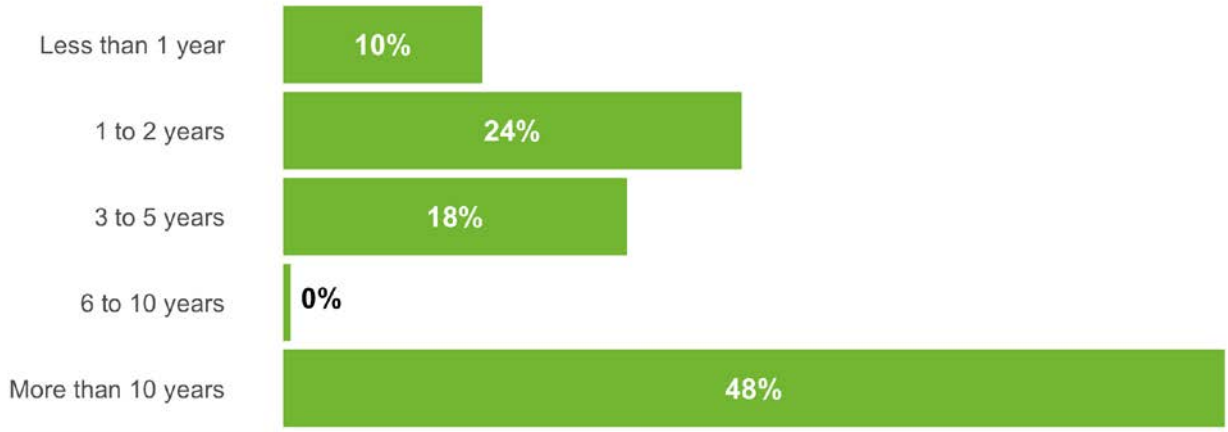
For non-program factors, as shown in Figure 9, participants were most likely to rate minimizing operating costs as extremely important (57%), followed by the corporate policy or guidelines (43%), age or condition of old equipment (35%), and finally scheduled time for routine maintenance (30%).

Figure 9: Importance of Non-Program Factors



To get a sense of the condition of participants' existing equipment, respondents estimated how much longer the equipment would have lasted if it had not been replaced. Forty-eight percent of surveyed respondents stated that their equipment would have lasted for more than 10 years (Figure 10). One 10 percent of respondents estimated their equipment would have lasted less than a year. This suggests that the program may be targeting customers with functioning equipment rather than those who would have needed to replace equipment anyway (i.e., free riders).

Figure 10: Equipment Remaining Life (n=16)



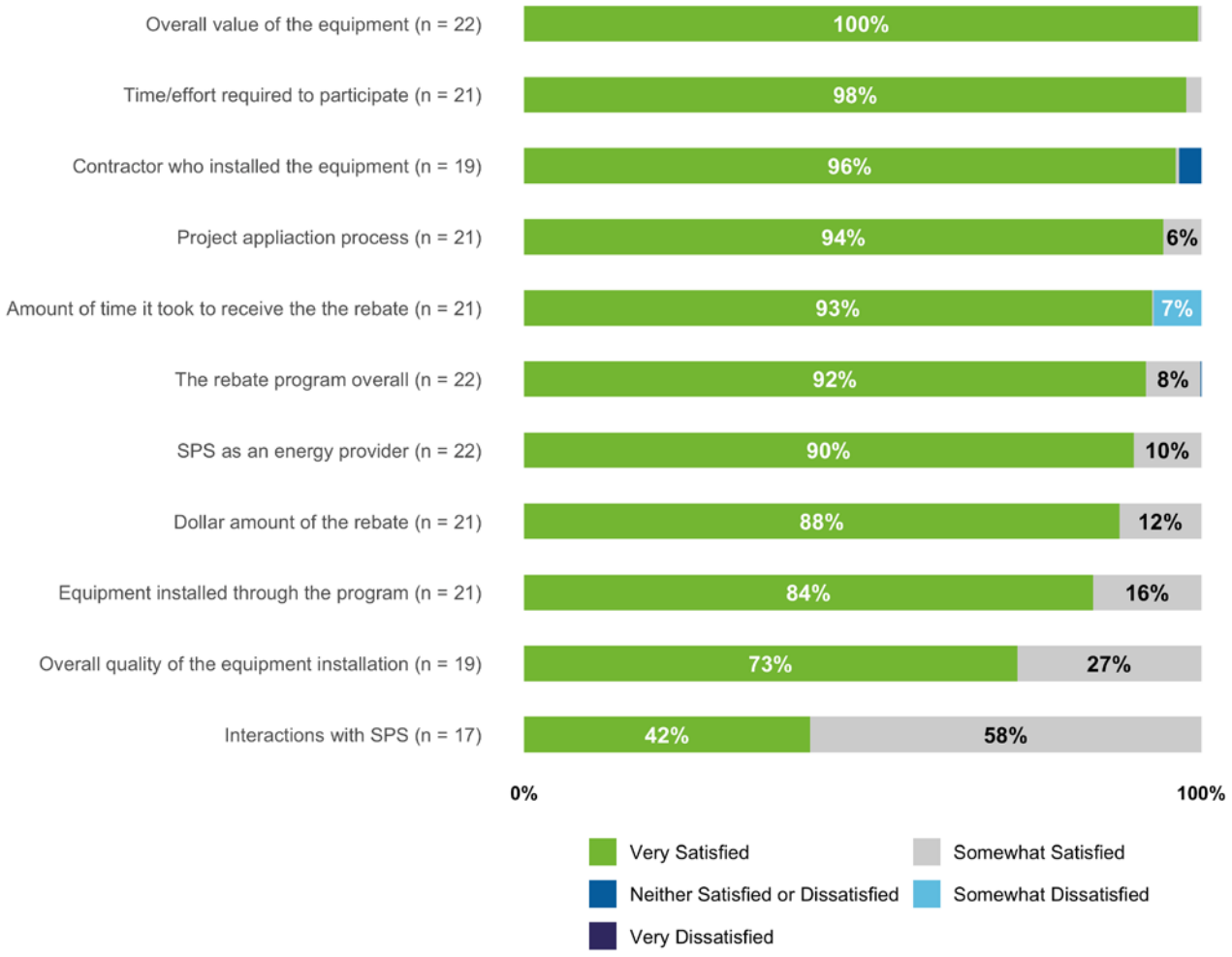
Participant Satisfaction

Participants then evaluated their satisfaction with various components of the Business Comprehensive program on a 1 to 5 scale, with 1 being "very dissatisfied" and 5 being "very satisfied". Figure 11 summarizes the satisfaction levels of the Business Comprehensive program participants over various program components.

Overall, surveyed program participants expressed high levels of satisfaction with the Business Comprehensive program components, with a majority reporting that they were "very satisfied" or "somewhat satisfied" with all program components. The program factors that were ranked highest were the overall value of the equipment installation (100%) and the time or effort required to participate (98%).

Additionally, the program component with the highest number of "neither satisfied nor dissatisfied" ratings was the contractor who installed the equipment, with less than 4 percent of participants rating the factor in this way.

Figure 11: Participant Program Satisfaction



Net Promoter Score

In order to calculate a net promoter score, the evaluation team also asked customers about their likelihood to recommend the Business Comprehensive program to others on a scale of 1 to 10. Net

promoter scores are measures of brand loyalty. To calculate the net promoter score, responses are classified in the following fashion:

- On a 1 to 10 scale, ratings of 9 or 10 are classified as **Promoters**, as these are customers who are satisfied with the program and are likely to actively recommend the program to other customers.
- Ratings of 7 or 8 are classified as **Passives**, as these are customers who are satisfied with the product but are not likely to actively promote it.
- Ratings of 1 through 6 are classified as **Detractors**, as these customers likely had some issues with the program and may dissuade other customers from participating.

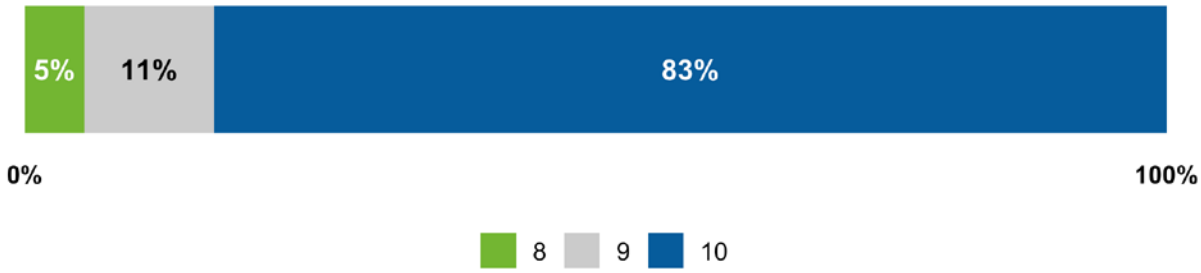
The net promoter score is then calculated using the following formula:

Net Promoter Score = % of Promoters - % Detractors

Responses from participating customers yielded a net promoter score of 94.8 percent. Figure 12 shows the distribution of responses, with 94.8 percent of respondents counting as promoters, 5.2 percent as passives, and 0 percent as detractors.

Participants who answered with a score of 8 or less were asked to elaborate on their scores. One participant who gave a rating of 8 stated the program was easy and the equipment came quickly. Another who gave a rating of 8 stated the program was not that difficult to get in place.

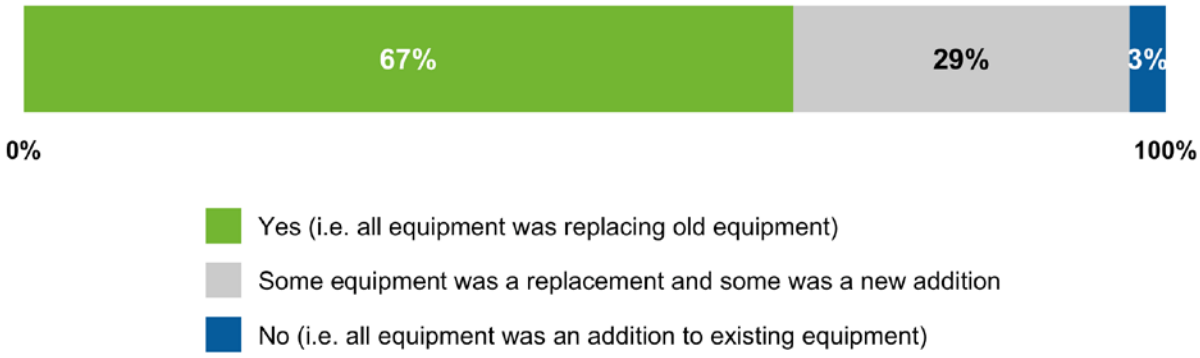
Figure 12: Distribution of Net Promoter Question Responses (n=22)



Equipment Replacement

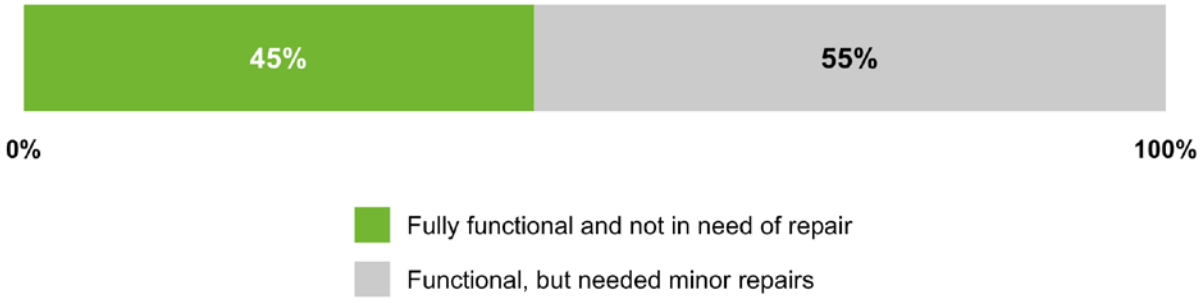
Participants were asked if the equipment installed through the program replaced existing equipment or if program equipment was an addition to existing equipment (Figure 13). The majority of equipment from this program replaced existing equipment, with 67 percent reporting that all equipment replaced existing equipment, 29 percent reporting that some equipment replaced existing equipment but not all, and 3 percent reporting that all equipment was an addition to existing equipment.

Figure 13: Intended to Replace Existing Equipment (n=22)



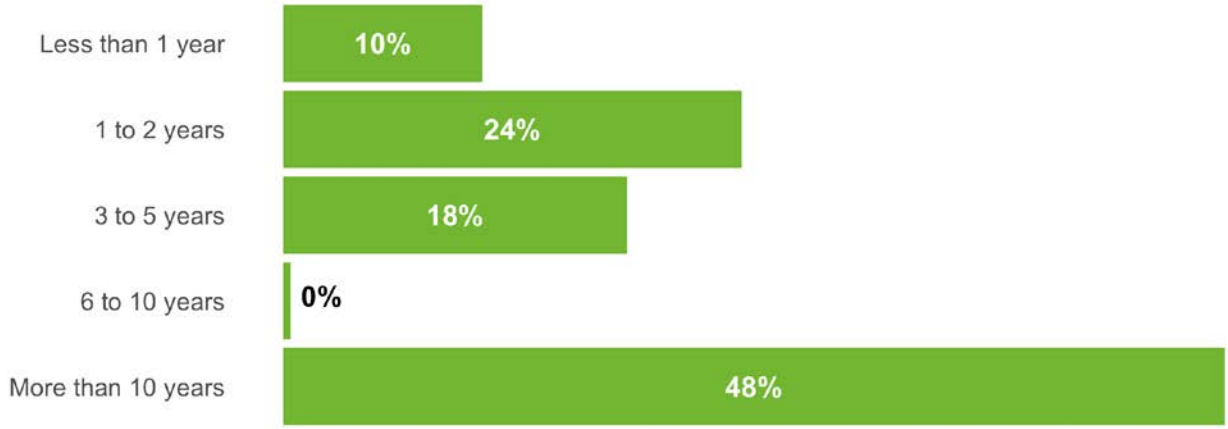
Of the equipment that did replace existing equipment, 45 percent of participants reported that the equipment was fully functional and not in need of repair, and 55 percent reported the equipment to be functional but in need of minor repairs (Figure 14). No participants reported that replaced equipment was not functional or in need of major repairs.

Figure 14: State of Replaced Equipment (n=20)



Participants were then asked to estimate the amount of time replaced equipment would have lasted had it not been replaced (Figure 15). The majority of replaced equipment was estimated to last over one year, with 48 percent of equipment estimated to last more than 10 years had it not been replaced. Only 10 percent of equipment was estimated to have less than one year of functionality before needing replacement.

Figure 15: Estimated Time Until Replaced Equipment Would Have Needed Replacement (n=16)



2.4 Conclusions and Recommendations

The conclusions and recommendations for the PY2020 Business Comprehensive evaluation are provided below and relate primarily to the engineering desk reviews.

- Specific *ex ante* calculation steps and adjustments for multiple prescriptive projects are only documented in the processing database and were not documented in the files available for the evaluation team's review.
    - In the files that were available for the evaluation team's review, specific steps taken for individual projects between application submission and final reported savings were not always clearly documented, as adjustments were presumably made in SPS's processing database.
    - Using inputs from provided project documents and following algorithms from the SPS Technical Assumptions resulted in savings different (both higher and lower) than those reported by SPS for multiple projects.
    - Without additional documentation of any adjustments made by SPS in the processing database, the reasons for differences between reported and verified savings were not always clear to the evaluation team.
    - **Recommendation:** Provide documentation of calculation steps and adjustments made for each project, ensuring that submitted project documentation can be followed to reproduce the reported savings estimates.
- The evaluation team used the algorithm inputs and methodology listed in the SPS Technical Assumptions documents to calculate the *ex post* savings for the evaluated Cooling Efficiency projects. The evaluated projects include air-cooled chillers, DX units, ECMs, and lighting measures.
    - Using assumptions, algorithms, baseline values provided in the SPS Technical Assumptions, and documentation on the installed HVAC units, the evaluation team

calculated *ex post* HVAC savings which were different (both higher and lower) than those reported by SPS for multiple Cooling Efficiency projects.

- The supplied application and equipment specification documents did not provide enough detail about assumptions used to recreate the *ex ante* savings.
- Without additional documentation of the project-specific calculations performed by SPS, the reasons for differences between *ex ante* and *ex post* savings were not always clear to the evaluation team.
- **Recommendation:** Provide documentation of calculation steps, algorithm inputs, and adjustments made for each project, ensuring that submitted project documentation can be followed to reproduce the *ex ante* savings estimates.

- For prescriptive lighting projects, the evaluation team used baseline fixture wattages listed in the Xcel Input Wattage Guide to calculate *ex post* savings. Using the inputs from the project documentation, Xcel Input Wattage Guide, and algorithms from the SPS Technical Assumption documents resulted in different savings values (both higher and lower) than those reported by SPS for multiple prescriptive lighting projects.
  - **Recommendation:** Provide documentation of existing fixture wattages, calculation steps, and adjustments made for each project, ensuring that submitted project documentation can be followed to reproduce the *ex ante* savings estimates.
- The evaluation team used the SPS Technical Assumption documents to calculate *ex post* savings for well pump VFD projects.
  - The *ex post* energy savings matched the *ex ante* energy savings for seven of the eight projects, resulting in an energy realization rate of 100%. One of the projects had a realization rate of 102%. The evaluation team was not able to identify reason for the discrepancy in savings.
  - The realization rate for the peak demand savings was 150% for seven of the eight projects. The coincidence factor listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions. The evaluation team used a coincidence factor of 57%, which accounts for the increase in the *ex post* peak demand savings.
  - **Recommendation:** Ensure algorithm inputs align with the values listed in the Technical Assumption documents.
- Project-specific *ex ante* savings for two of the nine evaluated VFD Motors and Drives projects did not match the *ex post* savings. The *ex post* savings utilized the algorithm inputs and methodology listed in the SPS Technical Assumptions documents for this measure.
  - Using inputs from the project documentation and following algorithms from the SPS Technical Assumptions resulted in savings different (both higher and lower) than those reported by SPS for two projects.
  - In the files that were available for the evaluation team's review, specific steps taken for individual projects between application submission and final reported savings

were not always clearly documented, as adjustments (e.g., motor size, type, or quantity) may have been made in SPS's processing database.

  - **Recommendation:** Provide documentation of calculation steps, algorithm inputs, and adjustments made for each project, ensuring that submitted project documentation can be followed to reproduce the *ex ante* savings estimates.

- For the projects included in the Custom program desk review sample which calculated savings using SPS's custom lighting calculator tool, an HVAC interactive energy factor of (1/3) x 0.33 and an HVAC interactive demand factor of 0.33 were applied for all projects, regardless of building type. However, the interactive effects that lighting upgrades have on HVAC systems vary based on the building type. Therefore, different HVAC interactive factors should be applied to different building types. The evaluation team adjusted the savings calculations for these projects to use building type-specific HVAC interactive factors from the New Mexico TRM.
  - **Recommendation:** Apply building type-specific HVAC interactive factors to Custom lighting projects.
- The evaluator verified coincidence factor values (used in peak coincident demand savings calculations) to be lower than those used in *ex ante* savings calculations for multiple interior lighting projects within the Custom program desk review sample. The evaluator's estimates of coincidence factors are based on the operation of the facilities.
  - **Recommendation**: Use site-specific estimates, based on the actual operation of the facilities, of peak coincidence factor when calculating peak coincident demand savings. Note that facility types such as K-12 schools may have low coincidence factor values, since their operation is often limited during the peak period (i.e. summer months).
- The evaluation team used fixture wattages found in equipment specification sheets for verified retrofit lighting fixtures in Custom lighting projects. In a few instances, these values differed slightly (both higher and lower) from those used in *ex ante* savings calculations.
  - **Recommendation**: Use fixture wattages from equipment specification sheets for retrofit fixture wattages to be used in energy savings calculations.

3 Energy Feedback Program

The Energy Feedback program is designed as a randomized control trial for the purposes of measuring program savings. As part of this design, the program implementer randomly assigned customers to a treatment group that receives the Energy Feedback Home Energy Report, which compares the household energy use to similar customers and also provides tips on how to reduce energy consumption. Those customers not in the treatment group are randomly assigned to the control group and do not receive the report.

3.1 Methods

The Energy Feedback program also uses an opt-out approach to participation. Customers are randomly selected into the program and automatically begin receiving the home energy reports, sent in the mail or via email. There are two ways that customers can leave the program. Customers can opt out at any time, or customers can cancel their electric service when they vacate the premises. Over time, this leads to some attrition in the program, which needs to be accounted for in savings estimation.

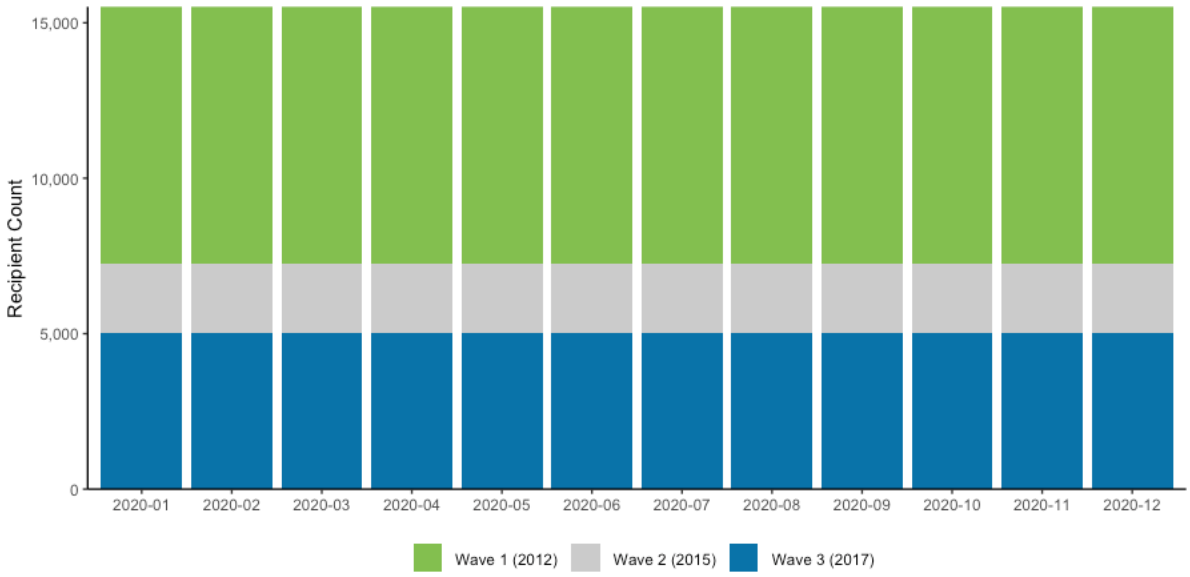
There were three deployment waves for the Energy Feedback program, each of which is tracked separately and has its own matched control group. Table 13 shows the participation numbers at the beginning of each wave, in January 2020, and in December 2020.

Table 13: Participation By Deployment Wave

Wave	Group	Participants – Start Date	Participants – January 1, 2020	Participants – December 31, 2020
Wave 1: 201203	Recipient	15,500	8,427	8,274
	Control	15,500	8,940	8,263
Wave 2: 201507	Recipient	5,250	2,316	2,238
	Control	5,250	2,547	2,249
Wave 3: 201705	Recipient	10,000	5,244	5,004
	Control	10,000	5,775	5,057
Total	**Recipient**	**30,750**	**15,987**	**15,516**
	Control	**30,750**	**17,262**	**15,569**

Figure 16 shows the program attrition among recipients, due to opt out or account closure. There were very minimal treatment recipients (471 total) that left the program in 2020.

Figure 16: 2020 Treatment Recipient Attrition by Wave



The customer program participation file provided this year contained customers that are still active in Energy Feedback or that left in 2019 or 2020. It did not contain historical customers (i.e. all customers at the beginning of each wave) that left the program prior to 2019. Given the large number of remaining customers, using only this subset of customers will still provide reliable savings predictions for 2020. Table 14 provides a summary of the data screens and the number of program participants that were not included in the billing regression analysis. These screens reduced our sample slightly from 33,370 customers to 33,060. The most substantial loss of participants came from a lack of billing data for the distinct combination of customer and premise. We also required that a customer in the recipient group must have received at least one print or email report.

Table 14: Energy Feedback Data Screens

Description	Removed		Remaining
Total program participants (from Franklin)	-		33,370
Billing data available for unique premise/customer	42	0.1%	33,328
Treatment customers having received at least one communication in 2020	268	0.8%	33,060

All valid zip codes for program participants were assigned to the closest National Oceanic and Atmospheric Administration (NOAA) weather station. Hourly weather data were pulled for seven

unique weather stations. We calculated cooling degree-hours (CDH) for each hourly temperature using a base temperature of 65 degrees Fahrenheit, and then took the average of these hourly values to create a single cooling degree-day (CDD) value for each weather station on each day in the study period.[9] This process was repeated for heating degree-days (HDD), again using a base temperature of 65 degrees Fahrenheit.

We used a fixed effects regression model to estimate the Energy Feedback impacts, which is the standard approach used for these types of home energy report programs. The benefit of a fixed effects model is that it controls for unique characteristics within each household, such as general levels of electricity use and household occupancy, which would not otherwise be represented in the model. These types of time-invariant characteristics are the fixed effects that the model controls for with a household-specific constant term.

The final billing model using the fixed effects specification is provided below. Variations on this model were explored during the evaluation, including more complex iterations that use a variety of interaction terms and additional explanatory variables. These alternative models all provided similar results and did not improve model performance. An identical model specification was used for each of the Energy Feedback deployment waves.

Equation 1: Daily kWh Regression Model

$$kWh_{i,t} = \alpha_i + \beta_1 Post_t + \beta_2 Treatment + \beta_3 CDD_{i,t} + \beta_4 HDD_{i,t} + \beta_5 Post_t * Treatment + \varepsilon_{i,t}$$

$Where$:

$kWh_{i,t}$ = daily electricity usage of customer i on day t

α_i = customer-specific fixed effect

$Post_t$ = indicator for post-program for year t

$Treatment$ = indicator for treatment group participants

CDD_t, HDD_t = cooling and heating degree days (base of 65°F) for customer i on day t

$\beta_1, \beta_2, \ldots$ = coefficients to be estimated by the regression

ε = random error term

[9] A cooling degree-day (CDD) represents the number of degrees that the outdoor temperature exceeded an assumed baseline (in this case, 65°F), averaged across all hours in the day. By calculating this metric from hourly temperatures instead of daily averages, we can identify days that require some cooling during peak hours as well as heating in the early morning or evening.

For each deployment wave, the post-program period of interest was the 2020 calendar year. The pre-program period varied for each wave, and was the calendar year prior to the original start date of each wave.[10] Table 15 summarizes key dates and time periods for each deployment wave.

Table 15: Deployment Wave Period

Wave	Start Month	Pre-Program Period	Post-Program Period
Wave 1: 201203	March 2012	Jan 1, 2011 – Dec 31, 2011	Jan 1, 2020 – Dec 31, 2020
Wave 2: 201507	July 2015	Jan 1, 2014 – Dec 31, 2014	Jan 1, 2020 – Dec 31, 2020
Wave 3: 201705	May 2017	Jan 1, 2016 – Dec 31, 2016	Jan 1, 2020 – Dec 31, 2020

3.2 Findings

The results of the models we estimated for each of the three deployment waves are provided in Table 16, with a 90 percent confidence interval for the customer level energy savings. We found statistically significant savings in energy usage for recipients in all of the waves, but the magnitude of this varies. The coefficient on the $Post * Treatment$ interaction variable can be interpreted as the change in daily energy consumption attributable to a household being in the treatment group in the post-report period.

Table 16: Savings by Deployment Wave

		Daily Savings (kWh)	
Wave	N	Post * Treatment	%
Wave 1: 201203	17,261	-0.71 ± 0.19	1.51% ± 0.40%
Wave 2: 201507	4,828	-0.78 ± 0.25	1.31% ± 0.68%
Wave 3: 201705	10,971	-0.45 ± 0.11	1.09% ± 0.46%

To calculate program level savings, each recipient's program participation duration was calculated for 2020. If a customer did not opt out of the program or cancel their electric service, they received 365 participation days. If a participant canceled their electric service or opted out in 2020, their annual savings were prorated to reflect their participation days up to that point. If a customer was dropped from the analysis sample prior to 2020 due to one of the other data screens (Table 14), then they were not included in the savings total for 2020.

[10] Pre and post indicators were set using the start date of a billing period.

The total participation days was multiplied by daily savings to obtain net savings. Table 17 shows the annual net savings for PY2020.

Table 17: PY2020 Energy Feedback Net Impact Summary

Deployment Wave	Net kWh Savings	Net kW Savings
Wave 1: 20120	2,130,868	1,013
Wave 2: 201507	627,674	117
Wave 3: 201705	815,883	214
Total	**3,574,425**	**1,344**

4 Smart Thermostats

The Smart Thermostat rebate is given through an online portal and offers $50 towards the purchase of select smart thermostats.

4.1 Methods

When Evergreen first requested data for smart thermostat rebate participants, there were only 16 rebated smart thermostats. Due to the low number of participants, Evergreen opted to do a deemed savings review rather than phone surveys. When the final data were requested, there were a total of 67 rebated smart thermostats due to an increase in purchases towards the end of the year.

Gross impacts were estimated based on a review of the deemed savings values for all 67 reported smart thermostat rebates at the end of the evaluation period. These results were then scaled up to match the total of 75 thermostats reported by SPS after the evaluation analysis period ended.

4.2 Findings

The deemed savings review identified that all but one smart thermostat was calculated correctly. Calculations for one smart thermostat incorrectly used weather data for the Roswell instead of Albuquerque as specified in the TRM. These differences are shown in Table 18 and resulted in a slight increase in overall gross savings. Since the realized savings were so close to the original, an engineering adjustment factor of 1.000 was applied for the final savings numbers for both kWh and kW.

Table 18: PY2020 Gross Smart Thermostat Savings

		Per Unit kWh Savings	Per Unit kW Savings	Gross kWh Savings	Gross kW Savings
Claimed Savings	67 smart thermostats using Roswell weather assumptions	873	0.161	58,491	10.79
Adjusted Savings	66 smart thermostats using Roswell weather assumptions	873	0.161	57,618	10.63
	1 smart thermostat using Albuquerque weather assumptions	962	0.177	962	0.18
	Total			**58,580**	**10.80**

The Evergreen team reviewed NTG ratios from multiple states to find the most appropriate comparison to the SPS offering with regards to the age and delivery channel for the smart

thermostat rebates. The most recent smart thermostat impact evaluation in California[11] had a net-to-gross ratio of 0.81, though this was lower (0.48) when looking at the rebate (and not the direct install) programs. Evergreen also reviewed the latest EM&V report for Ameren Missouri[12] which also has an online platform that sells thermostats similar to SPS. Due to the maturity of the California program and the existence of an online platform in Missouri, Evergreen chose to apply the NTG ratio from the Missouri TRM 0.707 as it was judged most appropriate for the New Mexico market. Final net impacts for both kWh and kW are shown in Table 19, scaled up to match the final participation number of 75 customers. Note that the final kW numbers are based on peak coincident demand. Since the SPS peak kW *ex ante* impacts were zero, the final gross and net *ex post* kW impacts are zero as well.

Table 19: PY2020 Net Smart Thermostat Savings (n=75)

	kWh Savings	kW Savings
Gross Impacts	65,475	0
Net Impacts	46,291	0

[11] Impact Evaluation of Smart Thermostats Residential Sector Program Year 2018, April 16, 2020, California Public Utilities Commission

[12] Ameren Missouri Program Year 2019 Annual EM&V Report, Volume 2: Residential Portfolio Report, June 18, 2020, Opinion Dynamics, page 142, Table 6-13.

5 Cost Effectiveness Results

The evaluation team calculated cost effectiveness using the Utility Cost Test (UCT) for each individual SPS energy efficiency program, as well as the cost effectiveness of the entire portfolio of programs.[13] The evaluation team conducted these tests in a manner consistent with the California Energy Efficiency Policy Manual.[14]

Cost effectiveness tests compare relative benefits and costs from different perspectives. The specific cost effectiveness test used in this evaluation, the UCT, compares the benefits and costs to the utility or program administrator implementing the program. The UCT explicitly accounts for the benefits and costs shown in Table 20.

Table 20: Utility Cost Test Benefits and Costs

Benefits	Costs
• Utility avoided energy-related costs • Utility avoided capacity-related costs, including generation, transmission, and distribution	• Program overhead/ administrative costs • Utility incentive costs • Utility installation costs

As discussed previously, SPS incurred costs for their new Heat Pump Water Heater program in 2020. This program did not have any savings this year, but the program planning costs were included in the cost effectiveness calculations for PY2020.

Using net realized savings from this evaluation and cost information provided by SPS, the evaluation team calculated the ratio of benefits to costs for each of SPS's programs and for the portfolio overall. The results of the UCT are shown below in Table 21, and the portfolio overall was found to have a UCT ratio of 1.87.

[13] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.

[14] http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPolicyManualV5forPDF.pdf

Table 21: PY2020 Cost Effectiveness

Program	Utility Cost Test (UCT)
Business Comprehensive	1.50
Home Lighting & Recycling	3.85
Energy Feedback	1.12
Residential Cooling	0.53
School Education Kits	0.85
Home Energy Services	2.23
Smart Thermostat	0.29
Overall Portfolio	**1.87**

Evaluation of the 2020 Southwestern Public Service Company's Energy Efficiency Programs

Final Report - Appendices

May 14, 2021

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

ECOMETRIC

RESEARCH & POLLING INC

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Appendix A: Business Comprehensive Participant Survey Instrument

Hello, my name is (*YOUR NAME*) from Research & Polling, Inc. I am calling on behalf of SPS. May I please speak with _____?

A. (Once correct respondent is reached) Hello, my name is (*YOUR NAME*) from Research & Polling, Inc. I am calling on behalf of SPS.

I'm calling because our records show that you recently completed an energy efficiency project where you installed [MEASURE_1] at your business located at [SITE_ADDRESS] and received a rebate through the SPS [REBATE PROGRAM] program. I'd like to ask a short set of questions about your experience with the [REBATE PROGRAM] program. Your time will help us improve this program for other customers like you. Are you the best person to talk to about the/these energy efficiency upgrade(s) and energy use at your firm?

1. Yes
2. No (Ask, who would be the best person to talk to about the [MEASURE(S)] installed and energy use at your business? (REPEAT INTRO WHEN CORRECT PERSON COMES ONLINE; ARRANGE CALLBACK IF NECESSARY)
3. Never installed *(VOLUNTEERED SKIP TO Q.5)*

(IF NEEDED) SPS would like to better understand how businesses like yours think about and manage their energy use. The [REBATE_PROGRAM] program is designed to help firms with energy saving efforts. Your input is very important to help SPS improve its energy rebate programs.

SECTION A [MEASURE _1]

1. (A 1) Our records show in 2020 your business got a rebate through SPS for installing [MEASURE_1]. Are you familiar with this project?

1. Yes
2. No *(SKIP TO Q.2)*
3. Never installed *(VOLUNTEERED) (SKIP TO Q.5)*
4. Don't know *(SKIP TO Q.2)*

1a. Our records show it was installed at [SITE_ADDRESS] in [SITE_CITY]. Is that correct?

1. Yes *(SKIP TO Q. 3)*
2. No *(GO TO Q. 1b)*
3. Never installed *(VOLUNTEERED) (SKIP TO Q.5)*
4. Don't know *(SKIP TO Q.2)*

1b. Where was [MEASURE_1] installed? *(RECORD LOCATION)*

_____*(SKIP TO Q. 3)*

99. Never installed *(SKIP TO Q. 5)*

2. (A 1a) Is there someone else in your company who would know about buying the [MEASURE_1]?

1. Yes (Ask to be transferred to better contact and go back to intro)
2. Yes (Unable to be transferred, record contact's and number to call back)
3. No **(THANK AND TERMINATE)**
4. Don't know **(THANK AND TERMINATE)**

3. (A 2) Thinking about the [MEASURE_1] for which you received a rebate, is the [MEASURE_1] still installed in your facility?

1. Yes *(SKIP TO Q. 6)*
2. No *(CONTINUE TO Q. 4a)*
3. Prefer not to answer *(SKIP TO Q. 6)*
4. Don't know **(***SKIP TO Q. 6)*

4a. (A 3) Was the [MEASURE_1] removed?

01. Yes, it was removed *(SKIP TO Q.5)*
02 No *(CONTINUE TO Q.4b)*
03. Prefer not to answer *(DO NOT READ) (SKIP TO Q.7)*
99. Don't know *(DO NOT READ) (SKIP TO Q.7)*

Other *(SPECIFY)* _____

4b. (A 3) Was the [MEASURE_1] never installed?

01. Yes, never installed
02. Prefer not to answer *(DO NOT READ) (SKIP TO Q.7)*
99. Don't know *(DO NOT READ) (SKIP TO Q.7)*

Other *(SPECIFY)* _____

5. (A3a) Why was the [MEASURE_1] removed/never installed? *(OPEN VERBATIM)*

_____

_____

_____

(SKIP TO SECTION A [MEASURE_2]

6. (A 4) Is the [MEASURE_1] still functioning as intended?

1. Yes
2. No
3. Prefer not to answer *(DO NOT READ)*

4. Don't know *(DO NOT READ)*

7. (A 5) Did your firm use a contractor to install the [MEASURE_1] or did internal staff do the work?

01. Contractor *(SKIP TO SECTION A [MEASURE_2])*
02. Internal Staff
03. Prefer not to answer *(SKIP TO SECTION A [MEASURE_2])*
99. Don't know *(SKIP TO SECTION A [MEASURE_2])*

Other *(SPECIFY)*_____
(SKIP TO SECTION A [MEASURE_2])

8. (A 6) Why did your firm choose to use internal staff instead of a contractor?

_____

_____

_____

98. Prefer not to answer
99. Don't know

SECTION A [MEASURE_2]

1. (A 1) Our records also show in 2020 your business got a rebate through SPS for installing a (MEASURE_2]. Do you remember this?

1. Yes
2. No *(SKIP TO INTRO BEFORE Q. 10)*
3. Never installed *(VOLUNTEERED) (SKIP TO Q.5)*
4. Don't know *(SKIP TO INTRO BEFORE Q. 10)*

1a. Our records show it was installed at [SITE_ADDRESS] in [SITE_CITY]. Is that correct?

1. Yes *(SKIP TO Q. 3)*
2. No *(GO TO Q. 1b)*
3. Never installed *(VOLUNTEERED) (SKIP TO Q.5)*
4. Don't know *(SKIP TO INTRO BEFORE Q. 10)*

1b. Where was [MEASURE_2] installed? *(RECORD LOCATION)*

_____*(SKIP TO Q. 3)*

99. Never installed *(SKIP TO Q. 5)*

3. (A 2) Thinking about the [MEASURE_2] for which you received a rebate, is the [MEASURE_2] still installed in your facility?

1. Yes *(SKIP TO Q. 6)*
2. No *(CONTINUE TO Q. 4a)*
3. Prefer not to answer *(SKIP TO Q. 6)*
4. Don't know **(***SKIP TO Q. 6)*

4a. (A 3) Was the [MEASURE_2] removed?

01. Yes, it was removed *(SKIP TO Q.5)*
02 No *(CONTINUE TO Q.4b)*
03. Prefer not to answer *(DO NOT READ) (SKIP TO Q.7)*
99. Don't know *(DO NOT READ) (SKIP TO Q.7)*

Other *(SPECIFY)* _____

4b. (A 3) Was the [MEASURE_2] never installed?

01. Yes, never installed
02. Prefer not to answer *(DO NOT READ) (SKIP TO Q.7)*
99. Don't know *(DO NOT READ) (SKIP TO Q.7)*

Other *(SPECIFY)* _____

5. (A3a) Why was the [MEASURE_2] removed/never installed? *(OPEN VERBATIM)*

_____

_____

_____

(SKIP TO INTRO TO Q. 10)

6. (A 4) Is the [MEASURE_2] still functioning as intended?

1. Yes
2. No
3. Prefer not to answer *(DO NOT READ)*
4. Don't know *(DO NOT READ)*

7. (A 5) Did your firm use a contractor to install the [MEASURE_2] or did internal staff do the work?

01. Contractor *(SKIP TO Q. 9)*
02. Internal Staff
03. Prefer not to answer *(SKIP TO Q. 9)*

99. Don't know *(SKIP TO Q. 9)*

Other *(SPECIFY)*_____ *(SKIP TO Q. 9)*

8. (A 6) Why did your firm choose to use internal staff instead of a contractor?

_____

_____

_____

98. Prefer not to answer

99. Don't know

9. (A 7) Was your [MEASURE_1] AND [MEASURE_2], installed/purchased together as a single project or were these done separately?

1. Together as one project
2 Separately
3. Prefer not to answer *(DO NOT READ)*
4. Don't know *(DO NOT READ)*

SECTION B

Now I have some questions about how your company became aware of the SPS rebate program.

10. (B 1) How did your company FIRST learn about the program?
(DO NOT READ CATEGORIES) (TAKE ONE RESPONSE)

01. Word of mouth (business associate, co-worker)
02. Utility program staff
03. Utility website
04. Utility bill insert
05. Utility representative
06. Utility advertising
07. Email from utility
08. Contractor/distributor
09. Building audit or assessment
10. Television Advertisement – Mass Media
11. Other mass media (sign, billboard, newspaper/magazine ad)
12. Event (conference, seminar workshop)
13. Online search, web links
14. Participated or received rebate

before

98. No way in particular
99. Don't know

Other *(SPECIFY)* _____

11. (B 2) What other sources did your company use to gather information about the program…. Were there any others? *(DO NOT READ CATEGORIES) (TAKE UP TO THREE RESPONSES)*

01. Word of mouth (business associate, co-worker)
02. Utility program staff
03. Utility website
04. Utility bill insert
05. Utility representative
06. Utility advertising
07. Email from utility
08. Contractor/distributor
09. Building audit or assessment
10. Television Advertisement – Mass Media
11. Other mass media (sign, billboard, newspaper/magazine ad)
12. Event (conference, seminar, workshop)
13. Online search, web links
14. Participated or received rebate before

98. None *(SKIP TO POLLER NOTE BEFORE Q. 13a)*
99. Don't know *(SKIP TO POLLER NOTE BEFORE Q. 13a)*

Other *(SPECIFY)* _____

12. (B 3) Of all the sources you mentioned, which did you find most useful in helping you decide to participate in the program?

_____

_____

_____

97. None in particular
98. Prefer not to answer
99. Don't know

SECTION C

POLLER NOTE:

If Respondent's answer to Q. 9 was:
Together as one project, prefer not to answer, or don't know **then READ:**

"For the remainder of this survey we will refer to your equipment upgrades collectively as a single project.

If Respondent's answer Q. 9 was:
Separately**, READ:**

"For the remainder of this survey we will refer only to the project where you installed [MEASURE_1]

POLLER NOTE: WAS MEASURE INSTALLED?

1. **Yes (GO TO Q. 13a)**
2. **No (GO TO Q. 13b)**

13a. (C 1) Did the equipment that your firm installed replace existing equipment?

1. Yes (i.e. all equipment was replacing old equipment) *(SKIP TO Q. 14a)*
2. Some equipment was a replacement and some was a new addition *(SKIP TO Q. 14a)*
3. No (i.e. all equipment was an addition to existing equipment*) (SKIP TO INTRO TO Q. 17)*
4. Prefer not to answer *(SKIP TO INTRO TO Q. 17)*
5. Don't know *(SKIP TO INTRO TO Q. 17)*

13b. (C 1) Is the equipment that your firm purchased intended to replace existing equipment?

1. Yes (i.e. all equipment is replacing old equipment) *(SKIP TO Q. 14b)*
2. Some equipment is a replacement, and some was a new addition *(SKIP TO Q. 14b)*
3. No (i.e. all equipment is an addition to existing equipment) *(SKIP TO INTRO TO Q. 17)*
4. Prefer not to answer *(SKIP TO INTRO TO Q. 17)*
5. Don't know *(SKIP TO INTRO TO Q. 17)*

14a. (C 2) Was the replaced equipment… *(READ CATEGORIES)*

1. Fully functional and not in need of repair? *(SKIP TO Q. 15a)*
2. Functional, but needed minor repairs? *(SKIP TO Q. 15a)*
3. Functional, but needed major repairs? *(SKIP TO Q. 15a)*
4. Not functional? *(SKIP TO INTRO TO Q. 17)*
5. Prefer not to answer *(DO NOT READ) (SKIP TO INTRO TO Q. 17)*
6. Don't know *(DO NOT READ) (SKIP TO INTRO TO Q. 17)*

14b. (C 2) Is the equipment you intend to replace… *(READ CATEGORIES)*

1. Fully functional and not in need of repair? *(SKIP TO Q. 15b)*
2. Functional, but needed minor repairs? *(SKIP TO Q. 15b)*
3. Functional, but needed major repairs? *(SKIP TO Q. 15b)*
4. Not functional? *(SKIP TO INTRO TO Q. 17)*
5. Prefer not to answer *(DO NOT READ) (SKIP TO INTRO TO Q. 17)*
6. Don't know *(DO NOT READ) (SKIP TO INTRO TO Q. 17)*

15a. (C 3) About how old, in years, was the equipment prior to replacement? (Probe if necessary: Best guess is fine.)

____ _____ _____ (Record Years)

499. Prefer not to answer

500. Don't know

ALL ANSWERS TO 15a GO TO Q. 16

15b. (C 3) About how old, in years, is the equipment you are replacing? (Probe if necessary: Best guess is fine.)

_____ _____ _____ (Record Years)

499. Prefer not to answer

500. Don't know

ALL ANSWERS TO 15b. GO TO Q.16

16. (C 4) How much longer (in years) do you think your old equipment would have lasted if you had not replaced it? (Probe if necessary: Best guess is fine.)

1. Less than a year
2. 1 – 2 years
3. 3 – 5 years
4. 6 – 10 years
5. More than 10 years
6. Prefer not to answer
7. Don't know

(C 5a-g) Next I will read a list of reasons your firm may have considered when you decided to conduct your project. For each one, please tell me if it was *not at all important, a little important, somewhat important, very important or extremely important*.

How important was… on your decision to conduct your project?

(RANDOMIZE)	*Extremely Important*	*Very Important*	*Somewhat Important*	*A Little Important*	*Not important At All*	*Don't Know/ Won't Say*
17. (C5a) Reducing environmental impact of the business	**5**	**4**	**3**	**2**	**1**	**6**
18. (C5b) Upgrading out-of-date equipment	**5**	**4**	**3**	**2**	**1**	**6**
19. (C5c) Improving comfort at the business	**5**	**4**	**3**	**2**	**1**	**6**

POLLER NOTE: Was HVAC Measure installed?

1. **Yes (CONTINUE TO Q. 20)**
2. **No (SKIP to Q. 21)**

20. (C5d) Improving air quality	**5**	**4**	**3**	**2**	**1**	**6**
21. (C5e) Receiving the rebate	**5**	**4**	**3**	**2**	**1**	**6**

(Q21 NOT ASKED IF DIRECT INSTALL)

22. (C5f) Reducing energy bill amounts	**5**	**4**	**3**	**2**	**1**	**6**

POLLER NOTE: Did respondent answer Contractor in Q.7?

1. **Yes (CONTINUE TO Q. 23)**
2. **No (SKIP TO INTRO Q. 24)**

23. (C5g) The contractor recommendation	**5**	**4**	**3**	**2**	**1**	**6**

SECTION D (INTRO TO Q.24)

Next, I'm going to ask a few questions about your decision to participate in the program, and choose equipment that was energy efficient

(D 1A-N). I'm going to ask you to rate the importance of each of the following factors on your decision to determine how energy efficient your project would be. Please rate the importance of each of these factors in determining your project's energy efficiency level using a scale from 0 to 10, where 0 means *not at all important* and 10 means *extremely important.* Please let me know if the factor is not applicable.

First I would like to read you some factors related to the rebate program itself.

POLLER NOTE: Did respondent answer Contractor in Q.7?

1. **Yes (CONTINUE TO Q. 24)**
2. **No (CIRCLE [12 N/A] ON Q. 24 AND SKIP TO Q. 25)**

How important was (read below) …in determining how energy efficient your project would be?

(RANDOMIZE) N/A	*Extremely Important*										*Not at all Important*	*DK/ WS*
Program Factors												
24. (D1A) The contractor who performed the work	10	09	08	07	06	05	04	03	02	01	00	
11	12											
25. (D1B) The dollar amount of the rebate	10	09	08	07	06	05	04	03	02	01	00	
11	12											
26. (D1C) Technical assistance received from SPS staff	10	09	08	07	06	05	04	03	02	01	00	
11	12											
27. (D1D) Endorsement or recommendation by your SPS account manager or other SPS staff	10	09	08	07	06	05	04	03	02	01	00	
11	12											
28. (D1E) Information from SPS marketing or informational materials	10	09	08	07	06	05	04	03	02	01	00	
11	12											
29. (D1F) Previous participation in a SPS program	10	09	08	07	06	05	04	03	02	01	00	
11	12											
30. (D1G) Endorsement or recommendation by a contractor	10	09	08	07	06	05	04	03	02	01	00	
11	12											
31. (D1H) Endorsement or recommendation by a vendor or distributor	10	09	08	07	06	05	04	03	02	01	00	
11	12											
32. (D1I) Endorsement or recommendation by CLEAR Result, the program implementer	10	09	08	07	06	05	04	03	02	01	00	
11	12											

Now, I would like to read you some factors that are not related to the rebate program. Using the same scale from 0 to 10, where 0 means *not at all important* and 10 means *extremely important,* please rate the following non program factors importance in determining your project's energy efficiency.

How important was (read below) ….in determining your project's energy efficiency?

(RANDOMIZE)	*Extremely Important*	*Not at all Important*	*DK/ WS N/A*

Non-program Factors

33. (D1J) The age or condition of the old equipment .....10 .... 09..... 08 .....07 .... 06..... 05.....04 .....03 .... 02... 01....00 11 12

34. (D1K) Corporate policy or guidelines .....10 .... 09..... 08 .....07 .... 06..... 05.....04 .....03 .... 02... 01....00 11 12

35. (D1L) Minimizing operating cost ....10 .... 09..... 08 .....07 .... 06..... 05.....04 .....03 .... 02... 01....00 11 12

36. (D1M) Scheduled time for routine maintenance.....10 .... 09..... 08 .....07 .... 06..... 05.....04 .....03 .... 02... 01....00 11 12

37. (D2) Of the items I just asked you about, think of the program factors as relating to assistance provided by the utility, such as the rebate, marketing from SPS, recommendation by a contractor and technical assistance from SPS. I also asked you about some non-program factors, which included the age and condition of the old equipment, company policy, operating costs and routine maintenance.

If you had to divide 100% of the influence on your decision to determine how energy efficient your new equipment would be between the SPS program and non-program factors, what percent would you give to the importance of the program factors? [IF NEEDED: Again, these are things like the rebate, marketing from SPS, recommendation by a contractor and technical assistance from SPS]

____ ____ _____ % = Program Factors

499. Prefer not to answer *(SKIP TO Q.39)*

500. Don't know (*SKIP TO Q. 39)*

38. D3. And what percent would you give to the importance of the non-program factors? (IF NEEDED: These include things like the age and condition of the old equipment, company policy, operating costs and routine maintenance.)

_____ _____ _____ %= Non-Program Factors

499. Prefer not to answer *(SKIP TO Q.39)*

500. Don't know *(SKIP TO Q.39)*

POLLER NOTE: ENSURE ANSWERS TO Q. 37 AND Q. 38 EQUAL 100%

39. (D 5) Did you first learn about the [REBATE_PROGRAM] program BEFORE or AFTER you decided how energy efficient your equipment would be?

1. Before
2. After
3 Prefer not to answer
4. Don't know

40. (D6) Using a scale from 0 to 10, where 0 means *not at all likely* and 10 means *extremely likely*, please rate the likelihood that you would have installed the same equipment with the exact same level of energy efficiency if the [REBATE_PROGRAM] program was not available.

Extremely Likely												*Not at all Likely*	*DK/ WS*
10	09	08	07	06	05	04	03	02	01	00			11
GO TO Q. 41			**SKIP TO Q. 43**					**GO TO Q. 42**					**SKIP TO Q. 43**

POLLER NOTE: IF ANSWER TO Q. 40 IS 8 OR HIGHER AND ANY RESPONSE TO Q. 24-Q.32 IS 8 OR HIGHER, THEN GO TO Q. 41. IF ANSWER TO Q. 40 IS 2 OR LESS AND ANY RESPONSE TO Q.24-Q.32 IS 2 OR LESS THEN GO TO Q. 42.

41. (D7) You just rated your likelihood to install the same equipment without any assistance from the program as a(n) [RATE RESPONSE FROM Q. 40] out of 10. Earlier, when I asked you to rate the importance of each program factor on your decision, the highest rating you gave was a [HIGHEST RATING FROM Q.24-Q.32] out of 10 for the importance of [RE-READ WORDING FOR HIGHEST RESPONSES Q.24-Q.32, PAGE 10].

Can you briefly explain why you were likely to install the equipment without the program but also rated the program factors as highly influential in your decision?
(RECORD VERBATIM)

_____

_____

_____

_____

(SKIP TO Q. 43)

42. (D8) You just rated your likelihood to install the same equipment without any assistance from the program as a(n) [RATE RESPONSE FROM Q. 40] out of 10. Earlier, when I asked you to rate the importance of each program factor on your decision, the highest

rating you gave was a [LOWEST RATING FROM Q.24-Q.32, Page 10] out of 10.

Can you briefly explain why you said you were not likely to install the equipment without help from the program, yet did not rate the program as highly influential in your decision? ***(RECORD VERBATIM)***

_____

_____

_____

_____

43. (D 9) If the [REBATE_PROGRAM] program was not available, would you have delayed starting the project to a later date?

1. Yes
2. No *(SKIP TO INTRO TO Q. 46)*
3. Would not have done the project at all *(SKIP TO INTRO TO Q. 46)*
4. Prefer not to answer *(SKIP TO INTRO TO Q. 46)*
5. Don't know *(SKIP TO INTRO TO Q. 46)*

44. (D10) Approximately how much later would you have done the project if the [REBATE_PROGRAM] program was not available? Would it have been…
(READ CATEGORIES)

1. Within one year
2. Between 12 months and less than 2 years *(SKIP TO INTRO TO Q. 46)*
3. Between 2 years and 3 years *(SKIP TO INTRO TO Q. 46)*
4. Greater than 3 years *(SKIP TO INTRO TO Q. 46)*
5 Or would you not have installed the equipment at all *(SKIP TO INTRO TO Q. 46)*
6. Prefer not to answer *(SKIP TO INTRO TO Q. 46)*
7. Don't know *(SKIP TO INTRO TO Q. 46)*

45. (D11) Using a scale from 0 to 10, where 0 means *not at all likely* and 10 means *extremely likely*, please rate the likelihood that you would have conducted this project within 12 months of when you actually completed this project if the [REBATE_PROGRAM] program was not available.

Extremely Likely *Not at all Likely* *DK/ WS*

10..... 09..... 08 .....07 ..... 06 ..... 05 ..... 04 ..... 03.....02 .....01 .... 00..... 11

46. (D 12) Can you briefly describe in your own words whether the availability of the rebate influenced the timing and/or scope of your project?

SECTION E

Now I have some questions about your satisfaction with various aspects of SPS and the [REBATE_PROGRAM] program.

(E 1A-K). For each of the following, please tell me if you were *very dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied or very satisfied*.

47. (E1A) SPS as an energy provider

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied (*SKIP TO Q. 48)*
5. Very Satisfied *(SKIP TO Q. 48)*
6. Not applicable *(SKIP TO Q. 48)*
7. Prefer not to answer *(SKIP TO Q. 48)*
8. Don't know *(SKIP TO Q. 48)*

48. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

49. (E1B) The rebate program overall

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied (*SKIP TO Q.50)*
5. Very Satisfied *(SKIP TO Q.50)*
6. Not applicable *(SKIP TO Q.50)*
7. Prefer not to answer *(SKIP TO Q.50)*
8. Don't know *(SKIP TO Q.50)*

50. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

51. (E1C) The equipment installed through the program

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.52)*
5. Very Satisfied *(SKIP TO Q.52)*
6. Not applicable *(SKIP TO Q.52)*
7. Prefer not to answer *(SKIP TO Q.52)*
8. Don't know *(SKIP TO Q. 52)*

52. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

POLLER NOTE: WAS INSTALLATION DONE BY A CONTRACTOR (Q.7)?

1. **Yes (CONTINUE TO Q. 52)**
2. **No (SKIP TO Q. 56)**

53. (E1D) The contractor who installed the equipment

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.54)*
5. Very Satisfied *(SKIP TO Q.54)*
6. Not applicable *(SKIP TO Q.54)*
7. Prefer not to answer *(SKIP TO Q.54)*
8. Don't know *(SKIP TO Q.54)*

54. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

55. (E1E) The overall quality of the equipment installation

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.56)*
5. Very Satisfied *(SKIP TO Q.56)*
6. Not applicable *(SKIP TO Q.56)*
7. Prefer not to answer *(SKIP TO Q.56)*
8. Don't know *(SKIP TO Q.56)*

56. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

(Q56-59 NOT ASKED IF DIRECT INSTALL)

57. (E1F) The amount of time it took to receive your rebate for your equipment

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.58)*
5. Very Satisfied *(SKIP TO Q.58)*
6. Not applicable *(SKIP TO Q.58)*
7. Prefer not to answer *(SKIP TO Q.58)*
8. Don't know *(SKIP TO Q.58)*

58. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

59. (E1G). The dollar amount of the rebate for the equipment

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.60)*
5. Very Satisfied *(SKIP TO Q.60)*
6. Not applicable *(SKIP TO Q.60)*
7. Prefer not to answer *(SKIP TO Q.60)*
8. Don't know *(SKIP TO Q.60)*

60. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

61. (E1H) Interactions with SPS

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.62)*
5. Very Satisfied *(SKIP TO Q.62)*
6. Not applicable *(SKIP TO Q.62)*
7. Prefer not to answer *(SKIP TO Q.62)*
8. Don't know *(SKIP TO Q.62)*

62. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

63. (E1I) The overall value of the equipment your company received for the price you paid

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.64)*

5. Very Satisfied *(SKIP TO Q.64)*
6. Not applicable *(SKIP TO Q.64)*
7. Prefer not to answer *(SKIP TO Q.64)*
8. Don't know (SKIP TO Q.64)

64. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

65. (E1J) The amount of time and effort required to participate in the program

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.66)*
5. Very Satisfied *(SKIP TO Q.66)*
6. Not applicable *(SKIP TO Q.66)*
7. Prefer not to answer *(SKIP TO Q.66)*
8. Don't know *(SKIP TO Q.66)*

66. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

(Q66 and Q67 NOT ASKED IF DIRECT INSTALL)

67. (E1K) The project application process

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied *(SKIP TO Q.68)*
4. Somewhat Satisfied *(SKIP TO Q.68)*
5. Very Satisfied *(SKIP TO Q.68)*
6. Not applicable *(SKIP TO Q.68)*
7. Prefer not to answer *(SKIP TO Q.68)*
8. Don't know *(SKIP TO Q.68)*

68. Can you tell me why you gave that rating? *(RECORD VERBATIM)*

_____

_____

_____

69. (E2) Do you have any recommendations for improving the [REBATE_PROGRAM] program?

01. Yes *(RECORD VERBATIM)*

_____

_____

_____

97. No
98 Prefer not to answer
99. Don't know

70. (E 3) On a scale from 0 to 10, where 0 is "not at all likely" and 10 is "very likely," how likely is it that you would recommend the [REBATE_PROGRAM] to a colleague or professional contact?

Extremely Likely										*Not at all Likely*	*DK/ WS*
10..... SKIP TO Q. 71	09.....	08	07	06	05	04	03.....	02	01	00.....	11

97. Have already recommended the program *(SKIP TO Q. 71)*
98. Prefer not to answer *(SKIP TO Q. 71)*
99. Don't know *(SKIP TO Q. 71)*

71. (E 3a). Can you tell me why you gave that rating? (RECORD VERBATIM)

_____

_____

_____

98. Prefer not to answer
99. Don't know

SECTION: CHARACTERISTICS AND DEMOGRAPIHCS

72. (Gen 1) Finally, I have a few questions about your firm for classification purposes only. Do you own or lease your building where the project was completed?

01. Own
02. Lease / Rent
03. Prefer not to answer *(SKIP TO Q. 73)*
99. Don't know *(SKIP TO Q. 73)*

Other *(SPECIFY)* _____

73. (Gen1a) Does your firm pay your SPS bill, or does someone else (e.g., a landlord)?

1. Pay own
2. Someone else pays
3. Prefer not to answer
4. Don't know

74. (Gen2) Approximately what is the total square footage of the building where the project was completed? (READ CATEGORIES IF NEEDED)

1. Less than 1,000 square feet
2. Between 1,000 and 1,999 square feet
3. Between 2,000 and 4,999 square feet
4. Between 5,000 and 9,999 square feet
5. Between 10,000 and 49,999 square feet
6. Between 50,000 and 99,999 square feet
7. 100,000 square feet or more
8. Prefer not to answer *(DO NOT READ)*
9. Don't know *(DO NOT READ)*

75. (Gen3) Approximately what year was your firm's building built? (READ CATEGORIES IF NEEDED)

1. 1939 or earlier
2. 1940 to 1949
3. 1950 to 1959
4. 1960 to 1969
5. 1970 to 1979
6. 1980 to 1989
7. 1990 to 1999
8. 2000 to 2009

9. 2010 to 2019
10. 2020
11. Prefer not to answer (DO NOT READ)
12. Don't know (DO NOT READ)

76. (Gen4) Approximately, how many full-time equivalent (FTE) employees does your company currently have in the state of New Mexico?

1. Less than 5
2. 5-9
3. 10-19
4. 20 - 49
5. 50 - 99
6. 100 - 249
7. 250 - 499
8. 500 - 999
9. 1,000 - 2,500
10. More than 2,500
11. Prefer not to answer
12. Don't know

77. (Gen5) And this is my last question. How long has your company been in business?
(Poller: Please be specific, by writing in months and years.)

_____

98. Prefer not to answer
99. Don't know

THIS CONCLUDES OUR SURVEY. THANK YOU FOR YOUR TIME. HAVE A GOOD DAY

Appendix B: Additional Tables for SPS Annual Report

Table 1: PY2020 Participation, Savings, and Costs by Program/Category

Program	Participants or Units	Annual Net Savings (kWh)	Annual Net Savings (kW)	Lifetime Net Savings (kWh)	Total Program Costs
Business Comprehensive – Cooling Efficiency	15	273,091	87	4,138,640	$489,601
Business Comprehensive – Custom Efficiency	18	5,549,418	658	105,438,938	$1,357,690
Business Comprehensive – Lighting Efficiency	49	1,660,702	304	25,206,350	$612,633
Business Comprehensive – Motors Efficiency	62	11,798,528	1,941	176,999,760	$2,531,003
Home Lighting & Recycling	406,365	12,849,572	2,089	102,207,596	$1,249,993
Energy Feedback	33,370	3,574,425	1,344	3,574,425	$102,991
Residential Cooling	193	185,179	56	3,333,227	$183,477
School Education Kits	2,557	561,571	15	6,554,430	$178,593
Home Energy Services	257	1,578,203	136	28,227,572	$712,098
Home Energy Services – LI	6,847	8,903,188	774	139,945,565	$1,596,886
Smart Thermostats	75	46,291	0	462,910	$33,739
Total	**449,808**	**46,980,168**	**7,404**	**596,089,413**	**$9,048,705**

Table 2: PY2020 Net-to-Gross Ratios by Program

Program	NTG Ratio
Business Comprehensive – Cooling Efficiency	0.7309
Business Comprehensive – Custom Efficiency	0.7309
Business Comprehensive – Lighting Efficiency	0.7309
Business Comprehensive – Motors Efficiency	0.7309
Home Lighting & Recycling	0.7100
Energy Feedback	N/A
Residential Cooling	0.5721
School Education Kits	1.0000
Home Energy Services	0.9955
Smart Thermostats	0.7070

Table 3: PY2020 Economic Benefits by Program/Category

Program/Category	Participants or Units	Cost per kWh Saved (Lifetime)	2020 Economic Benefits	Total Economic Benefits
Business Comprehensive – Cooling Efficiency	15	$0.12	$8,098	$122,717
Business Comprehensive – Custom Efficiency	18	$0.01	$129,165	$2,454,128
Business Comprehensive – Lighting Efficiency	49	$0.02	$41,048	$623,038
Business Comprehensive – Motors Efficiency	62	$0.01	$286,879	$4,303,720
Home Lighting & Recycling	406,365	$0.01	$605,464	$4,815,957
Energy Feedback	33,370	$0.03	$115,429	$115,429
Residential Cooling	193	$0.06	$5,381	$96,850
School Education Kits	2,557	$0.03	$13,016	$151,917
Home Energy Services	257	$0.03	$41,001	$733,343
Home Energy Services – LI	6,847	N/A	$280,367	$4,406,978
Smart Thermostats	75	$0.06	$965	$9,653
Total	**449,808**	**$0.02**	**$1,526,813**	**$17,833,731**

Table 4: PY2020 Detailed Costs by Program/Category

Program/Category	Avoided Energy Production Costs	Avoided Capacity Expansion Costs	Low-Income Non-Energy Benefits	Administration Costs	Incentives
Business Comprehensive – Cooling Efficiency	$86,399	$36,318	$0	$404,667	$84,933
Business Comprehensive – Custom Efficiency	$2,093,027	$361,100	$0	$962,013	$395,677
Business Comprehensive – Lighting Efficiency	$503,191	$119,848	$0	$396,509	$216,124
Business Comprehensive – Motors Efficiency	$3,515,341	$788,378	$0	$1,424,920	$1,106,083
Home Lighting & Recycling	$4,543,604	$272,353	$0	$630,331	$619,663
Energy Feedback	$97,709	$17,720	$0	$102,991	$0
Residential Cooling	$66,009	$30,841	$0	$49,829	$133,648
School Education Kits	$142,573	$9,344	$0	$117,954	$60,639
Home Energy Services	$659,514	$73,829	$0	$394,619	$317,479
Home Energy Services – LI	$3,314,224	$358,258	$734,496	$269,281	$1,327,605
Smart Thermostats	$9,653	$0	$0	$30,989	$2,750
Total	**$15,031,245**	**$2,067,990**	**$734,496**	**$4,784,104**	**$4,264,601**

Table 5: PY2020 Program Portfolio Summary

Program/Category	Participants	Net Annual kW	Net Annual kWh	Net Lifetime kWh	Program EUL	Avoided Energy Production Costs	Avoided Capacity Expansion Costs	Low Income Non-Energy Benefits	Program Admin Costs	Incentives
Home Lighting & Recycling	406,365	2,089	12,849,572	102,207,596	8	$4,543,604	$272,353	$0	$630,331	$619,663
Residential Cooling	193	56	185,179	3,333,227	18	$66,009	$30,841	$0	$49,829	$133,648
HES Combined	7,104	910	10,481,391	168,173,137	16	$3,973,738	$432,087	$734,496	$663,900	$1,645,084
Home Energy Services	*257*	*136*	*1,578,203*	*28,227,572*	17.9	*$659,514*	*$73,829*	*$0*	*$394,619*	*$317,479*
Home Energy Services - LI	*6,847*	*774*	*8,903,188*	*139,945,565*	*15.7*	*$3,314,224*	*$358,258*	*$734,496*	*$269,281*	*$1,327,605*
Energy Feedback	33,370	1,344	3,574,425	3,574,425	1	$97,709	$17,720	$0	$102,991	$0
Business Comprehensive Total	144	2,990	19,281,739	311,783,689	16.2	$6,197,958	$1,305,644	$0	$3,188,110	$1,802,818
Business Comprehensive - Cooling	*15*	*87*	*273,091*	*4,138,640*	*15.2*	*$86,399*	*$36,318*	*$0*	*$404,667*	*$84,933*
Business Comprehensive - Custom Efficiency	*18*	*658*	*5,549,418*	*105,438,938*	*19*	*$2,093,027*	*$361,100*	*$0*	*$962,013*	*$395,677*
Business Comprehensive - Lighting	*49*	*304*	*1,660,702*	*25,206,350*	*15.2*	*$503,191*	*$119,848*	*$0*	*$396,509*	*$216,124*
Business Comprehensive - Motors Efficiency	*62*	*1,941*	*11,798,528*	*176,999,760*	*15*	*$3,515,341*	*$788,378*	*$0*	*$1,424,920*	*$1,106,083*

Program/Category	Participants	Net Annual kW	Net Annual kWh	Net Lifetime kWh	Program EUL	Avoided Energy Production Costs	Avoided Capacity Expansion Costs	Low Income Non-Energy Benefits	Program Admin Costs	Incentives
Smart Thermostat	75	0	46,291	462,910	10	$9,653	$0	$0	$30,989	$2,750
School Education Kits	2,557	15	561,571	6,554,430	11.7	$142,573	$9,344	$0	$117,954	$60,639
Total	**449,808**	**7,404**	**46,980,168**	**596,089,413**	**13**	**$15,031,244**	**$2,067,989**	**$734,496**	**$4,784,104**	**$4,264,601**

Appendix C: Business Comprehensive Desk Review Detailed Results

Project ID	OID3285059	OID3382647	OID3442972	OID3724071	OID3749326
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Custom Efficiency	Custom Efficiency	Custom Efficiency	Motors Efficiency - NM	Lighting Efficiency
Project Description	Installation of VFDs on 3 new production well pump motors	Installation of centrifugal recycle gas compressor	Installation of LED lighting to replace linear fluorescent, incandescent, halogen, and CFL lighting.	Installation of VFDs on existing motors	Lighting Retrofit
Building Type	Other:	Manufacturing - Light Industrial	Education - Secondary School	Manufacturing - Light Industrial	Lodging - Hotel
Other Building Type	Oil extraction site				
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	299,044	3,522,118	22,548	932,777	43,540
Gross Reported kW	34.61	409.55	21.84	139.43	0.78
Gross Verified kWh	299,044	3,522,118	30,399	932,183	43,540
Gross Verified kW	34.61	409.55	9.41	139.54	0.78
kWh Realization Rate	1.00	1.00	1.35	1.00	1.00
kW Realization Rate	1.00	1.00	0.43	1.00	1.00
Calculation Assessment	The ex ante calculations are sound - they are based on thorough analysis and actual operating (i.e. metering) data	The ex ante calculations are sound - they are based on thorough analysis and actual operating (i.e. metering) data	The ex ante calculation methodology is sound.	Prescriptive calculation using methodology in the SPS Technical Assumption documents	
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	The evaluator did not make any adjustments to the ex ante savings estimates.	The evaluator did not make any adjustments to the ex ante savings estimates.	Post-installation wattages for 2 fixtures were found to be incorrect. Verified calculations use TRM values for CF and interactive factors (energy and demand). Custom HOU and CF from ex ante savings used.	The evaluation team used the methodology outlined in the Technical Assumptions documents.	The evaluator did not make any adjustments to the ex ante savings estimates.
Include any other important observations here		1. Baseline scenario includes compressor without VFD and proposed scenario includes compressor with VFD. 2. Baseline calculated using compressor suction and discharge pressures and flow. 3. Proposed power is calculated using compressor curves. 4. Energy and demand savings are calculated based on the difference in baseline and proposed energy and power consumption of the air compressor. 5. No deviation found in ex-ante and ex-post savings.	Post-installation wattages for 2 fixtures were found to be incorrect. Verified calculations use TRM values for CF and interactive factors (energy and demand). Custom HOU and CF from Ex-Ante Savings used.		

Project ID	OID3820605	OID3865737	OID3892003	OID3896905	OID3898345
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Lighting Efficiency	Lighting Efficiency	Cooling - NM	Motors Efficiency - NM	Custom Efficiency
Project Description	Lighting Retrofit	Lighting Retrofit	Installation of efficient cooling equipment's.	Installation of VFDs on existing motors	Installation of linear LED lighting to replace T12 fluorescent fixtures
Building Type	Retail - Single-Story Large	Education - Primary School	Retail - Single-Story Large	Manufacturing - Light Industrial	Retail - Small
Other Building Type					
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	180,781	349,242	130,243	618,839	6,097
Gross Reported kW	16.71	87.97	14.87	93.22	2.36
Gross Verified kWh	216,864	348,121	130,242	887,866	6,816
Gross Verified kW	19.62	94.84	14.87	136.50	1.89
kWh Realization Rate	1.20	1.00	1.00	1.43	1.12
kW Realization Rate	1.17	1.08	1.00	1.46	0.80
Calculation Assessment		The ex ante calculations were not provided for this project. However, the calculations align with the methodology outlined in the Technical Assumptions documents.		Prescriptive calculation using methodology in the SPS Technical Assumption documents	The ex ante calculation methodology is sound. Generally in line with the Technical Assumption documents.
TRM/Workpaper Assessment		Utility workpaper methodology seems to have been followed.			
Reasons for RR(s) <> 1	The discrepancy between the ex ante and ex post savings is not clear based on the supplied documentation. The ex post savings were calculated using quantities, type, and fixture wattages referenced from the project documentation. The HOU, CF, and interactive effects were referenced from the 2020 SPS Technical Assumption documents for Grocery/Retail (greater than 50,000 SF) and exterior building types.	The discrepancy between the ex ante and ex post energy savings may be due to rounding. The discrepancy between the peak demand savings is not known.	The evaluator did not make any adjustments to the ex ante savings estimates.	The discrepancy between the ex ante and ex post savings is due to different equipment specifications listed on the customer application and database. Customer Application - VFD: 200 HP, 125 HP, 15 HP, 125 HP, 15 HP, 200 HP 15 HP; Database - VFD: 150 HP, 100 HP, 10 HP, 40 HP, 5 HP, 150 HP, 5 HP	Verified calculations use TRM values for CF and interactive factors (energy and demand).
Include any other important observations here	1. Ex-ante calculations use 55W for Hubbell VP-S-24L fixture, it is updated to 55.96 as per specs provided. 2. Wattages of Metal Halide lamps from updated considering ballast factors in ex-post calculations. Ex-ante calcs does not consider ballast factor for Metal Halide lamps.				

Project ID	OID3908818	OID3946375	OID3946418	OID3957959	OID3962450
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Motors Efficiency - NM	Cooling - NM	Custom Efficiency	Cooling Efficiency - NM	Lighting Efficiency
Project Description	Installation of VFDs on existing motors	Installation of efficient cooling equipment's.	Installation of LED lighting to replace T8 linear fluorescent fixtures	DX Units	Lighting Retrofit
Building Type	Manufacturing - Light Industrial	Retail - Single-Story Large	Retail - Single-Story Large	Education - Primary School	Manufacturing - Light Industrial
Other Building Type					
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	837,269	95,011	607,504	9,595	25,056
Gross Reported kW	124.57	48.17	110.79	11.52	5.64
Gross Verified kWh	836,675	130,191	671,153	9,567	25,144
Gross Verified kW	124.68	62.93	88.70	13.25	5.89
kWh Realization Rate	1.00	1.37	1.10	1.00	1.00
kW Realization Rate	1.00	1.31	0.80	1.15	1.04
Calculation Assessment	Prescriptive calculation using methodology in the SPS Technical Assumption documents	Calculation is based on Technical Assumption documents provided with SPS project evaluation documents.	Prescriptive calculation using methodology in the SPS Technical Assumption documents		
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	The discrepancy between the ex ante and ex post savings may be due to rounding.	The discrepancy between the ex ante and ex post savings is not known. The evaluation team adjusted the high efficiency EERs for the 20 ton and 10 ton units to align with the provided spec sheets. This adjustment included reducing the EER for the 20 ton unit from 12.8 to 12.6 and reducing the EER for the 10 ton unit from 12.3 to 12.1. The evaluation team referenced the other algorithm inputs such as baseline EER and EFLH from SPS' 2020 Technical Assumption documents for the appropriate unit capacity.	Verified calculations use TRM values for CF and interactive factors (energy and demand).	The discrepancy between the ex ante and ex post savings is not known. Ex ante algorithm inputs were not provided to the evaluation team. The evaluation team referenced the other algorithm inputs such as baseline EER and EFLH from SPS' 2020 Technical Assumption documents for the appropriate unit capacity.	The discrepancy between the ex ante and ex post savings is not clear based on the supplied documentation. The ex post savings were calculated using quantities, type, and fixture wattages referenced from the project documentation. The HOU, CF, and interactive effects were referenced from the 2020 SPS Technical Assumption documents for an office and exterior building types.
Include any other important observations here		1. Calculation are based on SPS Cooling Efficiency Workpaper 2019.			

Project ID	OID4012814	OID4013959	OID4014071	OID4014278	OID4014605
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Motor and Drive Efficiency	Motor and Drive Efficiency	Motor and Drive Efficiency	Motor and Drive Efficiency	Motor and Drive Efficiency
Project Description	Water Well Pump VFDs	Water Well Pump VFDs	Water Well Pump VFDs	Water Well Pump VFDs	Water Well Pump VFDs
Building Type	Other:	Other:	Other:	Other:	Other:
Other Building Type	Unknown	Unknown	Unknown	Unknown	Unknown
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	62,702	154,617	160,674	197,534	97,730
Gross Reported kW	7.50	18.49	19.22	23.63	11.69
Gross Verified kWh	62,713	154,623	160,680	197,535	97,733
Gross Verified kW	11.25	27.74	28.83	35.44	17.53
kWh Realization Rate	1.00	1.00	1.00	1.00	1.00
kW Realization Rate	1.50	1.50	1.50	1.50	1.50
Calculation Assessment					
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.
Include any other important observations here					

Project ID	OID4014930	OID4025561	OID4025575	OID4055192	OID_4069042
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Motor and Drive Efficiency	Lighting Efficiency	Lighting Efficiency	Lighting Efficiency	Cooling - NM
Project Description	Water Well Pump VFDs	Lighting Retrofit	Linear Lighting	Lighting Retrofit	Replacement of shaded pole motor within walk-in refrigerator/freezer with the electronically commuted (EC) motors
Building Type	Other:	Office - Large	Retail - Small	Other:	Restaurant - Sit-Down
Other Building Type	Unknown			Exterior	
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	115,257	10,201	14,018	23,838	13,585
Gross Reported kW	13.79	2.93	3.13	0.00	1.55
Gross Verified kWh	115,259	10,249	17,417	23,549	13,584
Gross Verified kW	20.68	2.94	3.90	0.00	1.55
kWh Realization Rate	1.00	1.00	1.24	0.99	1.00
kW Realization Rate	1.50	1.00	1.25		1.00
Calculation Assessment					
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.		The discrepancy between the ex ante and ex post savings is unknown. The ex post savings were calculated using existing fixture/bulb wattages referenced from the project application and standard wattage table. The equipment quantities were referenced from the project application.	The evaluation team referenced the spec sheets to update the fixture wattage in the ex post calculations.	
Include any other important observations here				1. LPT40/HOR/850/E26/G2 Horizontal Fixture wattage used in ex ante calculations is 20W, it is updated to 40W in ex post calculations as per spec sheet provided. 2. PFM43LED Fixture wattage used in ex-ante calculations is 43W, it is updated to 43.61W in ex post calculations as per spec sheet provided.	

Project ID	OID_4069049	OID4069059	OID4077459	OID4093635	OID4093757
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Cooling - NM	Cooling Efficiency - NM	Custom Efficiency	Cooling Efficiency - NM	Lighting - NM
Project Description	Replacement of shaded pole motor within walk-in refrigerator/freezer with the electronically commuted (EC) motors	Refrigerated walk-in efficient evaporator fan ECM's for motors	Installation of LED lighting to replace high pressure sodium fixtures in a parking lot	DX Unit	Lighting Retrofit
Building Type	Restaurant - Sit-Down	Restaurant - Sit-Down	Education - University	Education - Primary School	Retail
Other Building Type					
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	13,585	12,445	43,029	105	1,864
Gross Reported kW	1.55	1.42	0.00	0.12	0.43
Gross Verified kWh	14,547	12,447	41,316	98	1,670
Gross Verified kW	1.69	1.42	0.00	0.17	0.39
kWh Realization Rate	1.07	1.00	0.96	0.94	0.90
kW Realization Rate	1.09	1.00		1.44	0.90
Calculation Assessment			The ex ante calculation methodology is sound. Generally in line with the Technical Assumptions.		
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	The ex post savings were calculated using the Technical Assumptions documents. The discrepancy between the ex ante and ex post savings is not known.		Ex post calculations use the value for exterior hours of use listed in the Technical Assumptions	The discrepancy between the ex ante and ex post savings is not known. The evaluation team did not receive the algorithm inputs. The evaluation team referenced the other algorithm from the project documentation and SPS' 2020 Technical Assumption documents for the appropriate unit capacity.	The ex post savings were calculated using the Technical Assumptions documents. The discrepancy between the ex ante and ex post savings is not known.
Include any other important observations here				NM TRM (2018) was used to estimate baselines and corresponding HVAC savings for this project. Ex-Ante savings calculations missing; Database does not list Building Type or Unit Capacity.	The discrepancy between the ex ante and ex post savings is not known. Lighting hours of use, HVAC interactive/demand factors and CF are based on Retail - Small building type in Roswell.

Project ID	OID4093950	OID4132473	OID4135113	OID4136712	OID4138575
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Cooling Efficiency - NM	Motors Efficiency - NM	Lighting Efficiency	Lighting Efficiency	Lighting Efficiency
Project Description	Air Cooled Chillers & DX Units	Installation of VFDs on existing motors	Installation of LED linear tubes to replace T8 linear fluorescent tubes	Lighting Retrofit	Linear Lighting
Building Type	Education - Primary School	Manufacturing - Light Industrial	Office - Large	Health/Medical - Hospital	Education - University
Other Building Type					
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	12,240	110,722	34,698	7,534	6,952
Gross Reported kW	8.99	15.24	8.06	1.40	2.00
Gross Verified kWh	12,088	110,722	46,442	7,556	7,692
Gross Verified kW	6.91	15.24	10.79	1.40	2.71
kWh Realization Rate	0.99	1.00	1.34	1.00	1.11
kW Realization Rate	0.77	1.00	1.34	1.00	1.36
Calculation Assessment		Prescriptive calculation using methodology in the SPS Technical Assumption documents			
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	The difference between the ex ante and ex post peak demand savings is not clear. The ex post savings utilized the savings methodology and Roswell inputs for the appropriate measures. The energy savings for the air-cooled chillers were replicated using ELFH hours from the 2020 Technical assumption documents. The evaluation team used the same EFLH values since they are reasonable.		The ex post calculations referenced HOUs/CF/interactive factors for an Other/Misc. building type from the 2020 SPS Technical Assumption documents. The bulb quantity, existing wattage, and installed wattage values were reference from the supplied documentation. The discrepancy between he ex ante and ex post savings is not known based on the supplied documentation.		The ex post savings were calculated using the Technical Assumptions documents. The discrepancy between the ex ante and ex post savings is not known.
Include any other important observations here	NM TRM (2018) was used to estimate baselines and corresponding HVAC savings for this project. Ex-Ante savings calculations missing; Discrepancy between Customer Application - Building Type (Education - Secondary) and Database - Building Type (Primary School)				

Project ID	OID4138642	OID4150727	OID4150796	OID4151041	OID4151044
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Lighting Efficiency	Lighting - NM	Motor and Drive Efficiency	Motor and Drive Efficiency	Motors Efficiency - NM
Project Description	Linear Lighting	Lighting Retrofit	Water Well Pump VFDs	Water Well Pump VFDs	Installation of VFDs on existing motors
Building Type	Education - University	Health/Medical - Hospital	Other:	Other:	Manufacturing - Light Industrial
Other Building Type			Unknown	Unknown	
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	8,466	6,719	290,702	390,399	929,164
Gross Reported kW	2.98	1.25	34.77	40.87	138.86
Gross Verified kWh	10,938	6,030	297,377	390,505	891,717
Gross Verified kW	3.85	1.11	53.35	61.32	138.86
kWh Realization Rate	1.29	0.90	1.02	1.00	0.96
kW Realization Rate	1.29	0.89	1.53	1.50	1.00
Calculation Assessment					
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1	The ex post savings were calculated using the Technical Assumptions documents. The discrepancy between the ex ante and ex post savings is not known.	The ex post savings were calculated using the Technical Assumptions documents. The discrepancy between the ex ante and ex post savings is not known.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	Ex Post savings used 57% for CF as per 2020 SPS workpaper. The CF listed in the SPS Technical Assumption documents was updated in 2020, increasing from 38% in the old Technical Assumptions to 57% in the 2020 version of the SPS Technical Assumptions.	The discrepancy between the ex ante and ex post savings is unknown. May be due to different equipment specifications & quantities listed on the customer application & database. Customer Application - VFD: 2 units/30 HP/3600 RPM, 7 units/30 HP/1800 RPM; Database: 7 units/30 HP/3600 RPM and 2 units/30 HP/1800 RPM. Missing working, discrepancy may be due to other assumptions in calculations.
Include any other important observations here	The ex post savings were calculated using SPS 2020 Workpaper, facility is listed as College/University in application but appears to be a detention facility. There doesn't seem to be a good fit for this building type in the workpaper, so using College.	The discrepancy between the ex ante and ex post savings is unknown. NM TRM (2018) was used to calculate ex post savings for this project. Lighting hours of use, HVAC interactive/demand factors and CF are based on Healthcare/Medical - Nursing Home building type in Roswell.			

Project ID	OID4186304	OID4186568	OID4186811	OID4190567	OID4208757
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Lighting - NM	Lighting - NM	Lighting - NM	Lighting - NM	Motors Efficiency - NM
Project Description	Installation of new high-efficiency lighting.	Installation of new high-efficiency lighting.	Installation of new high-efficiency lighting.	Installation of new high-efficiency lighting.	Installation of VFDs on existing motors
Building Type	Other:	Other:	Other:	Other:	Manufacturing - Light Industrial
Other Building Type	Exterior	Exterior	Exterior	Exterior	
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	10,421	16,311	12,270	30,581	398,501
Gross Reported kW	0.00	0.00	0.00	1.00	60.64
Gross Verified kWh	10,405	16,311	12,308	12,270	398,501
Gross Verified kW	0.00	0.00	0.00	0.00	60.64
kWh Realization Rate	1.00	1.00	1.00	0.40	1.00
kW Realization Rate				0.00	1.00
Calculation Assessment					
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1				The discrepancy between the ex ante and ex post savings is not known. The ex post savings were calculated using quantities and fixtures wattages referenced from the tracking data and project documentation. The main driver of the RR is the savings for the replacement of the eight 400 W metal halides. Based on the amount of fixtures and associated wattages, it's not possible to achieve 28,506 kWh, which is the savings listed for this fixture replacement.	
Include any other important observations here				The main driver of the RR is the savings for the replacement of the eight 400 W metal halides. Based on the amount of fixtures and associated wattages, it's not possible to achieve 28,506 kWh, which is the savings listed for this fixture replacement.	

Project ID	OID4217777	OID4217901	OID4220600	OID4260335	OID4278674
Utility	SPS	SPS	SPS	SPS	SPS
Program	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive	Business Comprehensive
Measure Type	Motors Efficiency - NM	Motors Efficiency - NM	Lighting - NM	Lighting	Motors Efficiency - NM
Project Description	Installation of VFDs on existing motors	Installation of VFDs on existing motors	Installation of new high-efficiency lighting.	Installation of new high-efficiency lighting.	Installation of VFDs on existing motors
Building Type	Manufacturing - Light Industrial	Manufacturing - Light Industrial	Lodging - Hotel	Other:	Manufacturing - Light Industrial
Other Building Type			Exterior	Warehouse	
Site Visit Being Conducted	No	No	No	No	No
Other General Project Info Comments					
Gross Reported kWh	111,193	333,579	14,768	228,355	465,036
Gross Reported kW	15.30	45.91	0.00	17.45	71.38
Gross Verified kWh	111,193	333,579	12,404	233,828	465,036
Gross Verified kW	15.30	45.91	0.00	16.99	71.38
kWh Realization Rate	1.00	1.00	0.84	1.02	1.00
kW Realization Rate	1.00	1.00		0.97	1.00
Calculation Assessment					
TRM/Workpaper Assessment					
Reasons for RR(s) <> 1			The fixture wattage for two of the existing fixtures is not clear based on the application and the claimed savings. Based on the provided documentation, the evaluation team calculated the savings for LED lights replacing the 1,000W (1,080) MHs and two 500W MHs. The low RR is a result of the savings for the 500W MH fixtures.	1. Calculation done as per SPS Workpapers. 2. It seems in ex-ante calculations, for Exterior Lights custom value of Coincident Factor (0.285) used. Ex-post calculations use CF = 0 for Exterior Lights as per Workpapers. 3. HID fixture wattage used with Ballast factor. 4. Exit sign wattages for existing and replaced fixtures not provided in the application.	
Include any other important observations here			The application states that three 1,000 W MH lights and two 500 W MH lights were replaced while the job description section of the NB Construction invoice states, "remove parking lot old HID 1000w light fixtures and install new L.E.D 3-200W and 2-200W fixture parking lot lights." This suggests that all five of the existing parking lot lights were 1000W MH.		

Project ID	OID4289344
Utility	SPS
Program	Business Comprehensive
Measure Type	Lighting Efficiency
Project Description	Installation of LED tubes to replace T8 linear fluorescent tubes
Building Type	Retail - Single-Story Large
Other Building Type	
Site Visit Being Conducted	No
Other General Project Info Comments	
Gross Reported kWh	128,190
Gross Reported kW	22.68
Gross Verified kWh	120,556
Gross Verified kW	21.33
kWh Realization Rate	0.94
kW Realization Rate	0.94
Calculation Assessment	
TRM/Workpaper Assessment	
Reasons for RR(s) <> 1	Ex post calculations use existing fixture wattage referenced from Xcel Input Wattage Guide for the listed fixture. The savings were calculated using the hours/SF/interactive factors referenced from the SPS workpapers for a Grocery/Retail (greater than 50,000 sf) building type. The discrepancy is known known based on the supplied documentation.
Include any other important observations here	

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S TRIENNIAL ENERGY EFFICIENCY PLAN APPLICATION REQUESTING APPROVAL OF: (1) SPS'S 2020-2022 ENERGY EFFICIENCY PLAN AND ASSOCIATED PROGRAMS; (2) A FINANCIAL INCENTIVE FOR PLAN YEAR 2020; (3) RECOVERY OF THE COSTS ASSOCIATED WITH A POTENTIAL ENERGY EFFICIENCY STUDY OVER A TWO-YEAR TIME PERIOD; AND (4) CONTINUATION OF SPS'S ENERGY EFFICIENCY TARIFF RIDER TO RECOVER ITS ANNUAL PROGRAM COSTS AND INCENTIVES,	)	**CASE NO. 19-00140-UT**
SOUTHWESTERN PUBLIC SERVICE COMPANY,	)	
APPLICANT.	)	

CERTIFICATE OF SERVICE

I certify that a true and correct copy of *Southwestern Public Service Company's 2020 Energy Efficiency and Load Management Annual Report* was electronically, as indicated below, on this 17th day of May, 2021:

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Respectfully submitted,

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