ANNUAL REPORT FOR ENERGY EFFICIENCY PROGRAMS CALENDAR YEAR 2019

NMPRC EFFICIENT USE OF ENERGY RULE 17.7.2 NMAC

JUNE 1, 2020

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Section I. Executive Summary

Introduction

El Paso Electric Company ("EPE") submits its annual report on the performance of EPE's Energy Efficiency Programs for calendar year 2019 ("2019 Programs"). This Annual Report for Energy Efficiency Programs ("Annual Report") covers the program period from January 1, 2019, through December 31, 2019, and relies on the statewide independent evaluator's report, *Evaluation of the 2019 El Paso Electric Energy Efficiency Programs* ("EM&V Report") prepared by Evergreen Economics ("Evergreen"). The EM&V Report is included as Attachment A. The programs evaluated in this Annual Report were approved by the New Mexico Public Regulation Commission ("NMPRC" or "Commission") as part of EPE's 2019-2021 Energy Efficiency and Load Management Plan in accordance with 17.7.2.8(A) NMAC. See Final Order Adopting Recommended Decision in Case No. 18-00116-UT (March 6, 2019) ("Final Order").

Summary of Results

The following 2019 Programs are included in this Annual Report:

- LivingWise® Program
- Residential Comprehensive Program
- Residential Lighting Program
- ENERGY STAR® New Homes Program
- NM EnergySaver (Low Income) Program
- Commercial Load Management
- Commercial Comprehensive Program
- SCORE Plus Program

Results are based upon the EM&V Report by Evergreen.

The following is a short summary of the overall results[1]:

- EPE's 2019 EE/LM Portfolio achieved cost effectiveness of 1.48[2] as measured by the Utility Cost Test ("UCT"). The majority of the 2019 Programs were cost effective.
- The total annual net energy savings were 16,549,072 kilowatt-hours ("kWh") at the customer meter.
- The total 2019 Programs expenditures were $5,116,681.
- The total amount collected through Rate No. 17 - Efficient Use of Energy Recovery Factor ("EUERF") was $4,577,965.

[1] Totals in tables may not tie due to rounding.
[2] A UCT of greater than one indicates the cost effectiveness of the energy efficiency portfolio or program.

Table 1 shows the total number of participants or units, the verified annual demand and energy savings, the lifetime energy savings, and the total program costs for the 2019 Programs.

Table 1 - 2019 Results Summary

Program	Participants or Units	Annual Savings (kW)	Annual Savings (kWh)	Lifetime Savings (kWh)	Total Program Expenses*
Educational					
LivingWise Program	2,466	40	448,180	3,804,006	$ 67,784
Residential					
Residential Comprehensive Program	1,333	1,611	2,673,452	39,696,115	$ 944,460
Residential Lighting Program	205,534	724	4,290,570	42,357,213	$ 556,354
ENERGY STAR New Homes Program	400	224	502,848	10,461,944	$ 407,487
Low Income					
NM EnergySaver Program	735	739	2,159,256	34,312,955	$ 829,992
Commercial					
Commercial Load Management	6	492	6,392	6,392	$ 165,882
Commercial Comprehensive Program	147	191	1,509,839	21,829,230	$ 492,885
SCORE Plus Program	74	871	4,958,534	72,363,576	$ 1,651,837
TOTAL	**210,695**	**4,892**	**16,549,072**	**224,831,431**	**$ 5,116,681**

*Total Program Expenses include EPE's internal administration costs of $227,942 recovered through base rates, therefore those costs are not recovered in Rate No. 17 - EUERF.

Table 2 presents the 2019 Benefit-Cost Analysis by Program based on the net present value ("NPV") of the 2019 Programs' benefits, expenses, and the program and portfolio UCT ratios. In accordance with the New Mexico Efficient Use of Energy Act ("EUEA") NMSA 1978 Section 62-17-5, EPE's portfolio of programs meets the UCT cost-effectiveness standard.

Table 2 - 2019 Benefit-Cost Analysis by Program

Program	NPV of Benefits	NPV of Expenses	UCT
Educational			
LivingWise Program	$ 85,668	$ 67,784	1.26
Residential			
Residential Comprehensive Program	$ 2,230,321	$ 944,460	2.36
Residential Lighting Program	$ 1,149,479	$ 556,354	2.07
ENERGY STAR New Homes Program	$ 366,018	$ 407,487	0.90
Low Income			
NM EnergySaver Program	$ 1,452,958	$ 829,992	1.75
Commercial			
Commercial Load Management Program	$ 100,937	$ 165,882	0.61
Commercial Comprehensive Program	$ 452,264	$ 492,885	0.92
SCORE Plus Program	$ 1,714,061	$ 1,651,837	1.04
TOTAL	**$ 7,551,705**	**$ 5,116,681**	**1.48**

2019 Cumulative Program Goals

Table 3 provides the annual and cumulative energy savings achieved from 2008 through 2019. The EUEA requires that EPE achieve cumulative savings of 65,815,596 kWh by 2014, which is equal to five percent (5%) of EPE's 2005 retail sales, and 105,304,953 kWh by 2020, which is equal to eight percent (8%) of EPE's 2005 retail sales. By the end of 2019, EPE had achieved a cumulative total savings of 152,067,100 kWh. This exceeds the 2020 statutory goal by about 44 percent.

The 2019 cumulative savings includes all annual savings for program years 2008 through 2019, less the 2008 annual expired portfolio kWh. Those savings were removed once they expired in 2015.

Table 3 - 2019 Cumulative Energy Savings

Year	Portfolio EUL	Annual kWh Savings	Annual Expired Portfolio kWh	Cumulative kWh Savings	EUEA Goal
2008	7	**855,912**		855,912	
2009	11	4,667,928		5,523,840	
2010	13	5,169,908		10,693,748	
2011	13	14,728,590		25,422,338	
2012	13	13,537,655		38,959,993	
2013	11	12,832,995		51,792,988	
2014	13	20,692,228		72,485,216	65,815,596
2015	13	15,729,342		88,214,558	
2008 Expired			**(855,912)**	87,358,646	
2016	13	18,213,422		105,572,068	
2017	14	12,729,242		118,301,310	
2018	14	17,216,718		135,518,028	
2019	14	16,549,072		152,067,100	
2020					105,304,953

Section II. Program Descriptions

Educational Program

LivingWise Program

The LivingWise Program is an educational program that targets fifth grade students. Participating teachers are provided educational materials that are presented in the classroom. Students receive a kit containing energy and water efficient devices for installation at home to generate immediate and long-term resource savings. EPE contracted with Franklin Energy Services to implement and manage this program. Franklin Energy Services identified and enrolled teachers and their students within EPE's New Mexico service territory. EPE distributed 2,466 kits during the 2019 fall semester and achieved a net savings of 448,180 kWh.

Residential Programs

Residential Comprehensive Program

The Residential Comprehensive Program offers rebates for building envelope and weatherization measures to include air infiltration, duct sealing, ceiling and floor insulation, solar screens, evaporative coolers, refrigerated air conditioners, heat pumps, HVAC Tune-Ups, as well as ENERGY STAR® cool roofs, windows, smart thermostats, and pool pumps. The rebates are paid directly to the customer, or upon customer approval, can be paid to the contractors that perform the installation. EPE contracted with Frontier Energy to administer the rebate process. EPE promoted this program through various outreach methods including radio and newspaper advertising, bill inserts, and targeted outreach to contractors that install these measures. In 2019, a total of 1,333 rebates were processed with a net savings of 2,673,452 kWh.

Residential Lighting Program

The Residential Lighting Program provides incentives in the form of markdowns at retail locations. The program encourages customers to replace their existing inefficient light bulbs with more energy efficient Light Emitting Diodes ("LED") lighting. EPE contracted with CLEAResult Consulting to provide outreach and administration for this program. A total of 30 retail locations participated in this program. EPE promoted the Residential Lighting Program through radio and newspaper advertising, social media, and point-of-purchase displays in stores. Additionally, EPE partnered with New Mexico State University to promote energy efficiency and provide free LED light bulbs at several successful athletic events. Free LED events were also held at food pantries and EPE payment centers in Anthony, Sunland Park, and Las Cruces.

As part of the Commission's Final Order, on page 5, paragraph 13, EPE was directed to:

- review annually the cost effectiveness of the Residential Lighting program, employing the UCT. This annual review must compare the cost effectiveness of the total program, including CFL and halogen lighting, to LED lighting alone within the program. The results of this review must be included in EPE's annual energy efficiency report.

Having conducted the review, EPE determined that 100% of the lighting products distributed through the Residential Lighting Program in 2019 were LEDs. Therefore, there is no difference between the cost effectiveness of the total program and the cost effectiveness of LED lighting alone. A total of 205,534 bulbs were sold and distributed through this program, with a net savings of 4,290,570 kWh.

ENERGY STAR® New Homes Program

The ENERGY STAR® New Homes Program provides incentives for homebuilders to construct energy efficient homes that exceed current 2009 International Energy Conservation Code ("IECC") standards. EPE offered two incentive paths depending on which best fits the homebuilders' needs. The Performance Path provides tiered incentive levels for new homes that exceed the 2009 IECC building code goals by ten percent. The Prescriptive Path provides incentives for measures that exceed building code requirements. The installation of a combination of measures includes ENERGY STAR® lighting, refrigerators, radiant barriers, insulation, and refrigerated air conditioning. EPE contracted with ICF to implement and manage this program. EPE promoted this program through various informational training sessions for homebuilders and real estate agents in the area throughout the year. EPE provided yard signs for homes in the Performance Path, advertising that their homes were more energy efficient than other homes in the area. EPE targeted its marketing efforts through the Las Cruces Home Builders Association and its trade magazine. In 2019, 400 homes participated in this program and had a net savings of 502,848 kWh.

Low Income Program

New Mexico EnergySaver Program

The New Mexico EnergySaver Program offers income-qualified customers a variety of energy efficiency measures at no cost. Qualification for the Program is based on an annual household income at or below 200 percent of the federal poverty guidelines. Frontier Energy administered and tracked the results of this program, and EnergyWorks identified customers and implemented the direct installs. Homes with refrigerated air conditioning qualified for LEDs, attic insulation, air infiltration, duct sealing, advanced power strips and smart thermostats. Homes with evaporative coolers qualified for LEDs, advanced power strips and evaporative cooler upgrades. In 2019, EPE continued to expand our efforts to help low-income customers by installing 248 evaporative coolers. Homes with electric water heaters also qualified for low flow kitchen and bathroom faucet aerators, low-flow showerheads, and water heater pipe and tank insulation. Advanced power strips, smart thermostats and evaporative cooler upgrades, water heater pipe and tank insulation were new measures added in 2019. EnergyWorks collaborated with a variety of community organizations, church groups, and low-income service providers, and continued to combine energy efficiency services with New Mexico Gas Company and Zia Natural Gas Company when possible to provide customers a more comprehensive energy efficiency service approach. EPE promoted this program through outreach utilizing referrals, door-to-door marketing, and radio and newspaper advertising. EPE and EnergyWorks also targeted customers with ability to pay issues through community educational events at EPE payment centers.

The Final Order, page 11, paragraph 29, directed EPE and its Measurement & Verification ("M&V") Evaluator to:

- meet with Staff and the parties, on or before June 1, 2019, to devise more comprehensive and meaningful measures of the program's effectiveness and to include such measures in EPE's next annual report and thereafter.

EPE met with the M&V Evaluator, Commission Staff, and the parties to analyze and incorporate cost effective measures in the program. As a result of these meetings, EPE agreed to provide a report with a more comprehensive and meaningful breakdown of measure sectors to show the program's effectiveness. The results are shown in Table 4 below.

Table 4 - 2019 NM EnergySaver Program Summary

	Home Count	Measure Count	Unit Count *	Expected Gross kW Savings**	Expected Gross kWh Savings**
Building Envelope (Evap. Coolers, Insulation, Air Infiltration, Duct Efficiency)		622	622	688	1,715,539
Water Heating (Low Flow Showerheads, Aerators, Pipe Wrap, Water Heater Jackets)		410	554	5	81,477
LED Lighting		584	10,799	16	105,400
Small Energy Devices (Advanced Power Strips, Smart Thermostats)		82	82	0	20,723
Total	**735**	**1,698**	**12,057**	**709**	**1,923,139**

* Multiple units per home. Count provided for # of LEDs, faucet aerators, showerheads, etc.
** Reference the EM&V Report in Attachment A.

This program had 735 participants and had a net savings of 2,159,256 kWh.

Commercial Programs

Commercial Load Management Program

The Commercial Load Management Program provides energy efficiency incentives to participating commercial customers that provide voluntary load curtailment during the peak demand season of June 1 through September 30. Incentives are based on verified demand savings that customers achieve for participating in load management events called by EPE. EPE contracted with Trane US ("Trane") to actively recruit eligible customers and provide a detailed evaluation of building operations to estimate optimal load shedding options, installation and integration of controls as needed, enabling real-time energy use monitoring. Trane calculates and verifies demand savings and dispenses incentive payments. The 2019 inaugural load management season had one participant with six sites that had a total demand reduction of 492 kW. In late 2019, the Commercial Load Management Program acquired a second participant for a total contracted amount slated for 2020 of 1,130 kW demand reduction potential.

Table 5 - Commercial Load Management Events

Event Date	Start Time	End Time	Duration (Hr)
8/2/2019	2:30 PM	4:30 PM	2.0
8/7/2019	3:30 PM	5:30 PM	2.0
9/18/2019	3:30 PM	5:30 PM	2.0
9/23/2019	3:00 PM	5:00 PM	2.0
9/25/2019	3:30 PM	5:30 PM	2.0
9/26/2019	3:00 PM	5:00 PM	2.0
9/27/2019	3:00 PM	5:00 PM	2.0
9/30/2019	2:30 PM	4:30 PM	2.0
8 Events in 2019			**16.0**

Commercial Comprehensive Program

The Commercial Comprehensive Program provides energy efficiency incentives and rebates for commercial customers whose average annual demand is up to and including 100 kilowatts ("kW"). Incentives and rebates are offered for lighting and lighting controls, Heating, Ventilation, and Air Conditioning ("HVAC") upgrades and HVAC controls, HVAC tune-ups, cool roofs, window treatments, water conservation measures and more. EPE contracted with Frontier Energy to implement the program, administer the incentive and rebate process, and track the results of the program. EPE and Frontier Energy identified possible energy efficiency measures by conducting walk-through audits. EPE advertised the Commercial Comprehensive Program through print, digital, and radio campaigns, and business events. To further promote this program, EPE and Frontier Energy reached out to electrical and HVAC contractors and distributors, and property managers. Three High Performance HVAC Tune-Up trainings were provided to interested HVAC contractors. A lunch and learn was held in Hatch to provide small commercial business customers from Hatch, Las Uvas, Rincon, Salem, Garfield and Arrey an opportunity to learn about the program and the incentives offered by both EPE and Zia Natural Gas Company.

The Final Order, page 6, paragraph 14, directed EPE to:

- undertake annual reviews in this program as well, including (1) comparison of the cost-effectiveness of LED lighting versus CFL and halogen lighting; (2) participation rates for each type of light in the program; and (3) savings for each type of light actually achieved. The results of this review must be included in EPE's annual energy efficiency report.

Having conducted the review, EPE determined that 100% of the lighting products distributed through the Commercial Comprehensive Program in 2019 were LEDs or controls for LED fixtures. Therefore, there is no difference between the cost effectiveness of the total program and the cost effectiveness of LED lighting alone. Table 6 shows the participation rates for each type of light in the program.

Table 6 - 2019 Commercial Comprehensive Lighting Participation Rates

Fixture Type	Expected Gross kWh Savings*	%
Halogen	-	0.0%
High Intensity Discharge (HID)	-	0.0%
Integrated-ballast CFL Lamps	-	0.0%
Integrated-ballast CCFL Lamps	-	0.0%
Modular CFL and CCFL Fixtures	-	0.0%
Integrated-ballast LED Lamps	305,169	15.0%
Light Emitting Diode (LED)	1,704,127	83.8%
Linear Fluorescent	-	0.0%
Lighting Controls	24,545	1.2%
Total	**2,033,841**	**100.0%**

* Expected Gross kWh savings are only for the lighting and controls components of the Program.

The Commercial Comprehensive Program had 147 participants and had a net savings of 1,509,839 kWh.

SCORE Plus Program

The SCORE Plus Program offers customer incentives, technical support, and outreach services to commercial customers with an annual average demand of greater than 100 kW, as well as schools and government, regardless of their annual average demand. This program offers incentives for a range of energy efficiency measures including lighting, lighting controls, HVAC upgrades, HVAC controls, and more, as well as custom projects. EPE contracted with CLEAResult to actively recruit eligible customers and to identify energy efficiency improvements that could be made to their facilities. CLEAResult also assisted customers in the program application process. EPE promoted this program through direct customer and contractor contact. A High Performance HVAC Tune-Up training was provided to interested HVAC contractors. In 2019, a total of 74 participants had a net savings 4,958,534 kWh through various energy efficiency measures.

Section III. Energy Efficiency Rule Reporting Requirements

Section III of the Annual Report provides program information to comply with the EUEA as required by the NMPRC Energy Efficiency Rule 17.7.2.14.

Documentation of Program Expenditures

Table 7 shows the 2019 expenses by program. The Commission approved EPE's 2019 Program budget in accordance with 17.7.2.8(A) NMAC. All 2019 Program expenses were tracked through a unique work order number. Likewise, all revenue collected through EPE's EUERF was booked to a separate work order number. The total 2019 program expenses were $5,116,681 of the approved $5,723,226 budget or about 89.4 percent of the budget.

Table 7 - 2019 Program Expenditures

Programs	Administration*	Marketing	M&V	Customer Incentives	Total Program Expenses
Educational					
LivingWise Program	$ 8,444	$ -	$ -	$ 59,340	$ 67,784
Residential					
Residential Comprehensive Program	$ 208,963	$ 37,105	$ 25,750	$ 672,643	$ 944,460
Residential Lighting Program	$ 187,656	$ 20,094	$ -	$ 348,603	$ 556,354
ENERGY STAR New Homes Program	$ 179,755		$ -	$ 227,732	$ 407,487
Low Income					
NM EnergySaver Program	$ 105,920	$ 36,559	$ 26,957	$ 660,555	$ 829,992
Commercial					
Commercial Load Management	$ 128,890	$ 962	$ 15,000	$ 21,030	$ 165,882
Commercial Comprehensive	$ 170,090	$ 12,907	$ 25,959	$ 283,929	$ 492,885
SCORE Plus Program	$ 700,165	$ 39,840	$ 35,943	$ 875,889	$ 1,651,837
TOTAL	**$ 1,689,884**	**$ 147,467**	**$ 129,609**	**$ 3,149,722**	**$ 5,116,681**

*Administration includes EPE's internal administration costs of $227,942 recovered through base rates, therefore those costs are not recovered in Rate No. 17 - EUERF.

Table 8 shows the breakdown of customer incentives by rate class.

Table 8 - Customer Incentives by Rate Class

Program	Residential NMRT01	Small Commercial NMRT03	General Service NMRT04	City and County NMRT07	Large Power NMRT09	State University NMRT26	Large Power Interruptible NMRT29	Total Participant Incentives
Educational								
LivingWise Program	$ 59,340	$ -	$ -	$ -	$ -	$ -	$ -	$ 59,340
Residential								
Residential Comprehensive Program	$ 672,643	$ -	$ -	$ -	$ -	$ -	$ -	$ 672,643
Residential Lighting Program	$ 348,603	$ -	$ -	$ -	$ -	$ -	$ -	$ 348,603
ENERGY STAR New Homes Program	$ 227,732	$ -	$ -	$ -	$ -	$ -	$ -	$ 227,732
Low Income								
NM EnergySaver Program	$ 660,555	$ -	$ -	$ -	$ -	$ -	$ -	$ 660,555
Commercial								
Commercial Load Management	$ -	$ -	$ -	$ 21,030	$ -	$ -	$ -	$ 21,030
Commercial Comprehensive	$ -	$ 157,198	$ 126,731	$ -	$ -	$ -	$ -	$ 283,929
SCORE Plus Program	$ -	$ 300	$ 593,767	$ 83,434	$ 52,287	$ 117,478	$ 28,623	$ 875,889
TOTAL	**$ 1,968,873**	**$ 157,498**	**$ 720,498**	**$ 104,464**	**$ 52,287**	**$ 117,478**	**$ 28,623**	**$ 3,149,722**

EPE did not make any adjustments to expenditures in plan year 2019. Table 9 shows the budgeted amounts, the program expenditures, and the variances for each program during 2019. The variances in individual program costs from the budgeted amounts were primarily due to customer participation being lower or higher than projected.

Table 9 - Budget Variances

Program	2019 Approved Budget	2019 Actual Expenses	Variance %
Educational			
LivingWise Program	$ 75,939	67,784	-11%
Residential			
Residential Comprehensive Program	$ 1,113,201	944,460	-15%
Residential Lighting Program	$ 568,443	556,354	-2%
ENERGY STAR New Homes Program	$ 445,707	407,487	-9%
Low Income			
NM EnergySaver Program	$ 555,171	829,992	50%
Commercial			
Commercial Load Management Program	$ 378,313	165,882	-56%
Commercial Comprehensive Program	$ 1,017,499	492,885	-52%
SCORE Plus Program	$ 1,568,955	1,651,837	5%
TOTAL	**$ 5,723,226**	**$ 5,116,681**	**-11%**

Estimated and Actual Customer Participation and Savings Levels

Table 10 presents the estimated and actual customer participation levels, annual energy savings, and annual peak demand savings for each program.

Table 10 - Estimated vs. Actual

Program	Estimated Participants or Units	Actual Participants or Units	Estimated Savings (kWh)	Actual Savings (kWh)	Estimated Savings (kW)	Actual Savings (kW)
Educational						
LivingWise Program	3,050	2,466	863,634	448,180	10	40
Residential Comprehensive Program	2,336	1,333	3,308,960	2,673,452	1,989	1,611
Residential Lighting Program*	101,325	205,534	1,184,390	4,290,570	120	724
ENERGY STAR New Homes Program	300	400	587,895	502,848	285	224
NM EnergySaver Program	42,785	735	1,845,568	2,159,256	259	739
Commercial Load Management	15	6	40,903	6,392	4,083	492
Commercial Comprehensive Program	295	147	4,139,158	1,509,839	722	191
SCORE Plus Program	175	74	5,520,186	4,958,534	1,309	871
TOTAL	**150,281**	**210,695**	**17,490,694**	**16,549,072**	**8,777**	**4,892**

* In Case No. 18-00116-UT, the Commission ordered the inclusion of the Residential Lighting Program in EPE's 2019-2021 EE/LM Program portfolio.

Estimated and Actual Costs (Expenses) and Avoided Costs (Benefits)

Table 11 presents the net present value of estimated and actual monetary expenses and benefits for each program.

Table 11 - Estimated and Actual Costs (Expenses) and Avoided Costs (Benefits)

	Estimated NPV of Monetary Costs	Actual NPV of Monetary Costs	Estimated NPV of Monetary Benefits	Actual NPV of Monetary Benefits
Educational				
LivingWise Program	$ 75,939	$ 67,784	$ 90,676	$ 85,668
Residential				
Residential Comprehensive Program	$ 1,113,201	$ 944,460	$ 1,672,040	$ 2,230,321
Residential Lighting Program	$ 568,443	$ 556,354	$ 722,701	$ 1,149,479
ENERGY STAR New Homes Program	$ 445,707	$ 407,487	$ 445,796	$ 366,018
Low Income				
NM EnergySaver Program	$ 555,171	$ 829,992	$ 604,987	$ 1,452,958
Commercial				
Commercial Load Management	$ 378,313	$ 165,882	$ 395,349	$ 100,937
Small Commercial Comprehensive Program	$ 1,017,499	$ 492,885	$ 1,244,497	$ 452,264
SCORE Plus Program	$ 1,568,955	$ 1,651,837	$ 2,080,880	$ 1,714,061
TOTAL	**$ 5,723,226**	**$ 5,116,681**	**$ 7,256,926**	**$ 7,551,705**

Cost Effectiveness Evaluation

Table 12 presents the UCT for each program for 2019. The UCT of the total portfolio of programs was 1.48. A UCT of greater than one indicates the cost effectiveness of the energy efficiency portfolio or program. UCTs are based on NMPRC Case No. 18-00116-UT weighted average cost of capital and avoided costs. EPE's 2019 total portfolio of programs passed cost effectiveness.

Table 12 - Cost Effectiveness by Program

Program	UCT
Educational	
LivingWise Program	1.26
Residential	
Residential Comprehensive Program	2.36
Residential Lighting Program	2.07
ENERGY STAR New Homes Program	0.90
Low Income	
NM EnergySaver Program	1.75
Commercial	
Commercial Load Management	0.61
Small Commercial Comprehensive Program	0.92
SCORE Plus Program	1.04
TOTAL	**1.48**

Self-Directed Program Participation

EPE did not receive any applications for customer self-directed programs in 2019.

Independent Measurement and Verification Report

The statewide independent evaluator, Evergreen, was selected by the NMPRC. EPE contracted with Evergreen to conduct the independent evaluation of its 2019 Programs. The EM&V Report is included as Attachment A to this report and includes:

- Documentation of expenses at both the individual and total portfolio program levels;
- Measured and verified energy and demand savings;
- Cost-effectiveness of all 2019 Programs;
- Deemed savings and other assumptions used by Evergreen; and,
- Description of the M&V process used by Evergreen.

Program Expenditures Not Covered in the Independent EM&V Report

All program-related expenditures are included in the EM&V Report.

Annual Economic Benefits by Program

Table 13 presents the annual and lifetime energy savings, estimated useful life ("EUL"), and annual economic benefits for the 2019 Programs. The average EUL is calculated by dividing the total lifetime energy savings by the annual energy savings, resulting in an average estimate of how long measures will continue to provide savings.

Table 13 - Annual Economic Benefits

Program	Annual Energy Savings (kWh)	Lifetime Energy Savings (kWh)	Estimated Useful Life	Annual Benefits
Educational				
LivingWise Program	448,180	3,804,006	8	$ 10,093
Residential				
Residential Comprehensive Program	2,673,452	39,696,115	15	$ 150,208
Residential Lighting Program	4,290,570	42,357,213	10	$ 116,436
ENERGY STAR New Homes Program	502,848	10,461,944	21	$ 17,592
Low Income				
NM EnergySaver Program	2,159,256	34,312,955	16	$ 91,432
Commercial				
Commercial Load Management	6,392	6,392	1	$ 100,937
Small Commercial Comprehensive Program	1,509,839	21,829,230	14	$ 31,281
SCORE Plus Program	4,958,534	72,363,576	15	$ 117,452
TOTAL	**16,549,072**	**224,831,431**	**14**	**$ 635,432**

Non-Energy Benefits

Table 14 shows the estimated emissions savings, and Table 15 shows the estimated water savings associated with the 2019 Programs. The annual and lifetime avoided emissions are determined by multiplying the emission rates times the annual and lifetime megawatt-hours ("MWh") saved. The water savings are determined by multiplying EPE's average portfolio water consumption per MWh times the annual and lifetime energy savings.

Table 14 - Emissions Savings

Emission Type	Avoided Electric Emmision Rate (lbs/MWh)	Annual Avoided Emissions (tons)	Lifetime Avoided Emissions (tons)
SO_2	0.0058	0.05	0.65
NO_X	1.03	8.55	116.23
CO_2	1,145	9,471	128,671
Particles	0.0870	0.72	9.78

Table 15 - Water Savings

Water Impact	EPE Portfolio Water Consumption (gal/MWh)	Annual Water Saved (gal)	Lifetime Water Saved (gal)
Water Saved	476.8	7,890,071	107,192,476

Tariff Reconciliation

Table 16 presents the calculation for EPE's 2019 tariff reconciliation based on the 2019 program expenditures plus the approved 2019 utility incentive, less EPE's internal administration costs, and less the cost recovery through EPE's EUERF from January through December 2019. The costs recovered through the EUERF are therefore not recovered through EPE's base rates.

EPE's 2019 utility incentive is based on its costs and satisfactory performance of measures and programs. Utilizing the sliding scale utility incentive approved by the Final Order (7.1 percent for verified annual savings of at least 12 gigawatt-hours ("GWh") with an adder incentive of 0.075 percent for each 1.0 GWh of additional energy savings, up to a maximum of 7.6657 percent), EPE earned a profit incentive of 7.625 percent for its verified annual energy savings of 16.55 GWh.

Table 16 - Energy Efficiency Historical (Underage)/Overage Recovery

Description	Total Program Expenses	7.625% Utility Incentive	Internal Admin Costs Recovered Through Base Rates	EUERF Recovery	(Underage)/ Overage
Beginning Balance (PY2017)					$ (609,580)
2019 Energy Efficiency Activity	$ 5,116,681	$ 390,147	$ 227,942	$ 4,577,965	$ 91,341
Ending Balance					**$ 91,341**

EPE's beginning balance originated from an underage of $609,580 for Program Year 2017. The total program expenses ($5,116,681 + $390,147 utility incentive = $5,506,828) exceeded the revenues collected ($227,942 + $4,577,965 = $4,805,907) in 2019, resulting in a cumulative overage amount of $91,341.

Table 17 presents the month-by-month reconciliation of EPE's tariff reconciliation.

Table 17 - Energy Efficiency Historical (Underage)/Overage Recovery

Month	Total Program Expenses	7.625% Utility Incentive	Internal Admin Costs Recovered Through Base Rates	EUERF Recovery	(Underage)/ Overage of Expenses
Beg. Bal. (PY2017)					(609,580)
Jan 2019	$ 18,995	$ 1,448	$ 18,995	$ 351,969	(960,101)
Feb 2019	$ 30,918	$ 2,357	$ 18,995	$ 323,910	(1,269,731)
Mar 2019	$ 111,659	$ 8,514	$ 18,995	$ 315,726	(1,484,278)
Apr 2019	$ 157,859	$ 12,037	$ 18,995	$ 214,906	(1,548,284)
May 2019	$ 173,748	$ 13,248	$ 18,995	$ 315,774	(1,696,056)
Jun 2019	$ 287,769	$ 21,942	$ 18,995	$ 432,283	(1,837,623)
Jul 2019	$ 481,870	$ 36,743	$ 18,995	$ 497,222	(1,835,228)
Aug 2019	$ 641,661	$ 48,927	$ 18,995	$ 496,467	(1,660,102)
Sep 2019	$ 366,424	$ 27,940	$ 18,995	$ 573,152	(1,857,886)
Oct 2019	$ 492,652	$ 37,565	$ 18,995	$ 454,447	(1,801,112)
Nov 2019	$ 658,782	$ 50,232	$ 18,995	$ 297,290	(1,408,383)
Dec 2019	$ 1,694,345	$ 129,194	$ 18,995	$ 304,819	$ 91,341
Total	**$ 5,116,681**	**$ 390,147**	**$ 227,942**	**$ 4,577,965**	

Estimated Program Expenditures Expected in 2020

Table 18 shows estimated program expenditures for 2020. EPE's Program Year 2020 budget, approved in NMPRC Case No. 18-00116-UT on March 6, 2019, is $5,113,646 (excluding the Program Year 2018 overage of $365,102).

Table 18 - Estimated Program Expenditures Expected in 2020

2020 Program	Budget
Educational	
LivingWise Program	$ 76,021
Residential	
Residential Comprehensive Program	$ 950,064
Residential Lighting Program	$ 483,180
ENERGY STAR New Homes Program	$ 446,895
Low Income	
NM EnergySaver Program	$ 537,717
Commercial	
Commercial Load Management	$ 382,212
Commercial Comprehensive Program	$ 717,100
SCORE Plus Program	$ 1,520,458
TOTAL	**$ 5,113,646**

On May 22, 2020, EPE filed a motion with the Commission to modify its 2019-2021 Energy Efficiency and Load Management Plan to approve a new Residential Load Management Program for the remaining 2020 and 2021. Expected adjustments for 2020 are shown in Table 19 if the Motion to Modify is approved.

Table 19 - Estimated Program Expenditures Expected in 2020 if Motion to Modify is approved

2020 Program	Budget
Educational	
LivingWise Program	$ 76,021
Residential	
Residential Comprehensive Program	$ 862,164
Residential Lighting Program	$ 483,180
ENERGY STAR New Homes Program	$ 446,895
Residential Load Management Program	$ 350,000
Low Income	
NM EnergySaver Program	$ 537,717
Commercial	
Commercial Load Management	$ 382,212
Commercial Comprehensive Program	$ 455,000
SCORE Plus Program	$ 1,520,458
TOTAL	**$ 5,113,646**

EVERGREEN ECONOMICS

Evaluation of the 2019 El Paso Electric Energy Efficiency Programs

Final Report

May 25, 2020

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 El Paso Electric (EPE) energy efficiency programs for program year 2019 (PY2019).

The EPE 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, EPE 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. 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 EPE's savings estimates;
- **Demand Side Analytics** conducted the impact evaluation of the Commercial Load Management program; and
- **Research & Polling** fielded all the phone surveys.

For PY2019, the following EPE programs were evaluated:

[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

- Commercial Comprehensive
- SCORE Plus
- NM EnergySaver
- Commercial Load Management

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. Brief process evaluations were also conducted for the Small Commercial Comprehensive and SCORE Plus programs.

The analysis methods used for the evaluated PY2019 programs are summarized as follows:

Commercial Comprehensive. The Small Commercial Comprehensive program offers rebates to EPE's small commercial customers that install energy efficient lighting, HVAC, energy management, and other equipment. The measures eligible for the Commercial Comprehensive program are primarily prescriptive in nature. 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 major measure types. A phone survey was used to verify installation and to collect information needed for a self-report analysis of free ridership to determine net impacts.

SCORE Plus. The SCORE Plus program provides energy efficiency measures to schools, government buildings, and other large commercial customers and covers measures and projects similar to those in the Commercial Comprehensive program. As a consequence, the impact evaluation methods were similar across the two programs. Gross impacts were estimated based on an engineering desk review of a statistically representative sample of projects completed in 2019. Interviews with SCORE Plus participants were conducted to verify installation and collect information needed for a self-report analysis of free ridership to determine net impacts.

NM EnergySaver. The NM EnergySaver program provides weatherization and other efficiency improvements at no cost to low-income customers. Other measures provided include LEDs, Smart Thermostats, and water conservation measures for customers with electric water heaters. These are prescriptive measures, and as such, the focus of the evaluation for this program was a deemed savings review. This included a review of the source of deemed savings, whether that was the New Mexico Technical Reference Manual (TRM) or another source, as well as verification that the deemed savings were applied correctly in the tracking data via engineering desk reviews.

Commercial Load Management. EPE operates a Commercial Load Management demand response program for six middle schools and high schools in its service territory. The program compensates participants for reducing electric load upon dispatch during periods of high system load. For summer 2019, the portfolio-committed capacity was 380 kW. Individual participant-committed capacities ranged from 20 kW to 100 kW. In 2018, Evergreen worked closely with EPE and Trane, the implementer, to reach agreement on the mechanics of the demand response performance calculation mechanism and in 2019 conducted a validation of settlement claims. This calculation centers on the baseline, or the estimate of what load would have been in the participating facilities on event days if demand response had not been called.

Table 1 summarizes the PY2019 evaluation methods.

Table 1: Summary of PY2019 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Verification	Engineering Desk Reviews	Validation of Settlement Claims
Commercial Comprehensive	◆	◆	◆	
SCORE Plus	◆	◆	◆	
NM EnergySaver	◆		◆	
Commercial Load Management				◆

The results of the PY2019 impact evaluation are shown in Table 2 (kWh) and Table 3 (kW), with the programs evaluated in 2019 highlighted in blue.

EVERGREEN ECONOMICS

Table 2: PY2019 Savings Summary - kWh

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
LED Lighting	205,534	6,403,835	1.0000	6,403,835	0.6700	4,290,570
LivingWise	2,466	448,180	1.0000	448,180	1.0000	448,180
Energy Star New Homes	400	550,764	1.0000	550,764	0.9130	502,848
NM EnergySaver	735	1,923,139	1.1228	2,159,256	1.0000	2,159,256
Residential Comprehensive	1,333	4,042,721	1.0000	4,042,721	0.6613	2,673,452
SCORE Plus	74	7,336,816	1.0099	7,409,645	0.6692	4,958,534
Commercial Comprehensive	147	2,106,527	0.9970	2,100,207	0.7189	1,509,839
Commercial Load Management	6	6,392	1.0000	6,392	1.0000	6,392
Total	**210,695**	**22,818,374**		**23,121,000**		**16,549,071**

Table 3: PY2019 Savings Summary - kW

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
LED Lighting	205,534	1,080	1.0000	1,080	0.6700	724
LivingWise	2,466	40	1.0000	40	1.0000	40
Energy Star New Homes	400	246	1.0000	246	0.9130	224
NM EnergySaver	735	709	1.0426	739	1.0000	739
Residential Comprehensive	1,333	2,436	1.0000	2,436	0.6613	1,611
SCORE Plus	74	1,332	0.9773	1,302	0.6692	871
Commercial Comprehensive	147	266	0.9983	265	0.7189	191
Commercial Load Management	6	489	1.0062	492	1.0000	492
Total	**210,695**	**6,598**		**6,600**		**4,892**

Using net realized savings from this evaluation and cost information provided by EPE, the evaluation team calculated the ratio of benefits to costs for each of EPE'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.[2] The evaluation team conducted this test in a manner consistent with the California Energy Efficiency Policy Manual.[3] The results of the UCT are shown below in Table 4. The portfolio overall was found to have a UCT ratio of 1.48.

[2] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
[3] California Public Utilities Commission. 2013. *California Energy Efficiency Policy Manual – Version 5.* http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPolicyManualV5forPDF.pdf

Table 4: PY2019 Cost Effectiveness

Program	Utility Cost Test (UCT)
LED Lighting	2.07
LivingWise	1.26
Energy Star New Homes	0.90
NM EnergySaver	1.75
Residential Comprehensive	2.36
SCORE Plus	1.04
Commercial Comprehensive	0.92
Commercial Load Management	0.61
Overall Portfolio	**1.48**

Based on the data collection and analysis conducted for this evaluation, the evaluation team found that, overall, EPE is operating programs that are resulting in energy and demand savings and satisfied participants.

The impact evaluation—which included engineering desk reviews for a sample of NM EnergySaver, SCORE Plus, and Commercial Comprehensive projects and deemed savings reviews for the NM EnergySaver, SCORE Plus, and Commercial Comprehensive programs—resulted in a mix of realized gross savings. Adjustments to savings based on the Commercial Comprehensive program were due to the use of a Texas TRM input. For the SCORE Plus program, adjustments were made to account for the correct number of units installed, and the coefficient of performance (COP)/ heating seasonal performance factor (HSPF) equipment efficiencies were used to calculate heating savings. For NM EnergySaver, adjustments were made due to inconsistencies of quantities in documentation and alignment of certain measures with algorithms outlined in the NM TRM.

In terms of cost effectiveness, the UCT test was used and found that five of the eight programs were cost effective. The process evaluation activities, which included surveys with Commercial Comprehensive participants and contractors and interviews with SCORE Plus participants, found high levels of satisfaction across various aspects of the programs. Contractors and distributors continue to be a key source of awareness about program rebates.

1 Introduction

This report presents the independent evaluation results for El Paso Electric (EPE) energy efficiency programs for program year 2019 (PY2019).

The EPE 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).[4] 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, EPE 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 EPE in May 2017, and a project initiation meeting was held with EPE staff on November 2, 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 EPE's savings estimates;
- **Demand Side Analytics** conducted the impact evaluation of the Commercial Load Management program; and

[4] NMSA §§ 62-17-1 *et seq* (SB 644). Per the New Mexico Public Regulation Commission Rule 17.7.2 NMAC, 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

- **Research & Polling** fielded all the phone surveys.

For PY2019, the following EPE programs were evaluated:

- Commercial Comprehensive
- SCORE Plus
- NM EnergySaver
- Commercial Load Management

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. Brief process evaluations were also conducted for the Commercial Comprehensive and SCORE Plus programs.

The remainder of this report is organized as follows. The *Evaluation Methods* chapter describes the various analysis methods and data collection activities that were conducted for the PY2019 evaluation. The *Impact Evaluation Results* chapter follows and presents the energy and demand savings by program. *The Cost Effectiveness Results* are summarized in the next chapter, followed by a chapter presenting the *Process Evaluation Results.* The main report concludes with a chapter on evaluation *Conclusions and Recommendations.* Additional technical detail on the evaluation methods and results are included in several appendices.

2 Evaluation Methods

The analysis methods used for the evaluated PY2019 programs are summarized as follows:

Commercial Comprehensive. The Commercial Comprehensive program offers rebates to El Paso Electric's (EPE's) small commercial customers that install energy efficient lighting, HVAC, energy management, and other equipment. The measures eligible for the Commercial Comprehensive program are primarily prescriptive in nature. 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 major measure types. A phone survey was used to verify installation and to collect information needed for a self-report analysis of free ridership to determine net impacts.

SCORE Plus. The SCORE Plus program provides energy efficiency measures to schools, government buildings, and other large commercial customers and covers measures and projects similar to those in the Commercial Comprehensive program. As a consequence, the impact evaluation methods were similar across the two programs. Gross impacts were estimated based on an engineering desk review of a statistically representative sample of projects completed in 2019. Interviews with SCORE Plus participants were conducted to verify installation and collect information needed for a self-report analysis of free ridership to determine net impacts.

NM EnergySaver. The NM EnergySaver program provides weatherization and other efficiency improvements at no cost to low-income customers. Other measures provided include LEDs and water conservation measures for customers with electric water heaters. These are prescriptive measures, and as such, the focus of the evaluation for this program was a deemed savings review. This included a review of the source of deemed savings, whether that was the New Mexico Technical Reference Manual (TRM) or another source, as well as verification that the deemed savings were applied correctly in the tracking data via engineering desk reviews.

Commercial Load Management. EPE operates a Commercial Load Management demand response program for six middle schools and high schools in its service territory. The program compensates participants for reducing electric load upon dispatch during periods of high system load. This evaluation verified savings calculated by Trane for purposes of settlement with the participating customers.

Table 5 summarizes the PY2019 evaluation methods. Additional detail on each of these evaluation methods is included in the remainder of this chapter.

Table 5: Summary of PY2019 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Verification	Engineering Desk Reviews	Validation of Settlement Claims
Commercial Comprehensive	◆	◆	◆	
SCORE Plus	◆	◆	◆	
NM EnergySaver	◆		◆	
Commercial Load Management				◆

2.1 Phone Surveys

Phone surveys were fielded in March 2020 for participants in the Commercial Comprehensive program, and phone interviews were conducted with SCORE Plus participants and participating contractors in the Commercial Comprehensive program. The evaluation team attempted to complete an interview with the one participating contractor in the NM EnergySaver program but was unable to successfully contact the participant. The surveys and interviews ranged from 15 to 20 minutes in length and covered the following topics:

- Verification of measures included in EPE'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.

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

The original goal was to complete 70 phone surveys and interviews across the two programs (50 for Commercial Comprehensive program participants, 10 for participating contractors in the Commercial Comprehensive program, and 10 for SCORE Plus participants). Table 6 shows the distribution of completed surveys and interviews.

Table 6: EPE Phone Survey and Interview Summary

Program	Customers with Valid Contact Info	Target # of Completes	Completed Surveys
Commercial Comprehensive Participants	72	50	31
Commercial Comprehensive Contractors	37	10	9
SCORE Plus Participants	27	10	9
Total	**136**	**70**	**49**

The final survey instrument for the Commercial Comprehensive program is included in Appendix A, and the interview guides for the SCORE Plus program participants and Commercial Comprehensive contractors are included in Appendices B and C.

2.2 Engineering Desk Reviews

To verify gross savings estimates, the evaluation team conducted engineering desk reviews for a sample of the projects in the Commercial Comprehensive, SCORE Plus, and NM EnergySaver programs. 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 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 Commercial Comprehensive and SCORE Plus programs that used deemed savings values, the engineering desk reviews included the following:

- Review of measures available in the New Mexico TRM and the Texas TRM to determine the most appropriate algorithms that apply to the installed measures;
- Recreation of savings calculations using TRM algorithms and inputs as documented by submitted specifications, invoices, and post-installation inspection reports; and

- Review of New Mexico TRM algorithms to identify candidates for future updates and improvements.

For projects in the NM EnergySaver program, the engineering desk reviews included the following:

- Recreation of savings calculations using TRM algorithms and inputs as documented in the tracking system data; and
- Review of project documentation, specifications, and installation verification photos to ensure accurate program tracking.

2.3 Impact Estimation Method

In 2018, Evergreen worked closely with EPE and Trane to reach agreement on the mechanics of the demand response performance calculation mechanism. This calculation centers on the baseline, or estimate of what load would have been in the participating facilities on event days if demand response had not been called. The settlement calculations called for a "high 8-of-10" baseline with a capped, symmetric day-of adjustment. Only non-event, non-holiday weekdays were eligible to be baseline days. For each two-hour event window, the method for the settlement calculations was as follows:

1. Select the last ten non-event, non-holiday weekdays.
2. Select the eight days (out of ten) with the highest average load during the event window, using the 15-minute interval load data (on case by case 30-minute interval load data).
3. For each 15-minute interval, calculate the average load of the eight selected baseline days. This is known as the "raw baseline."

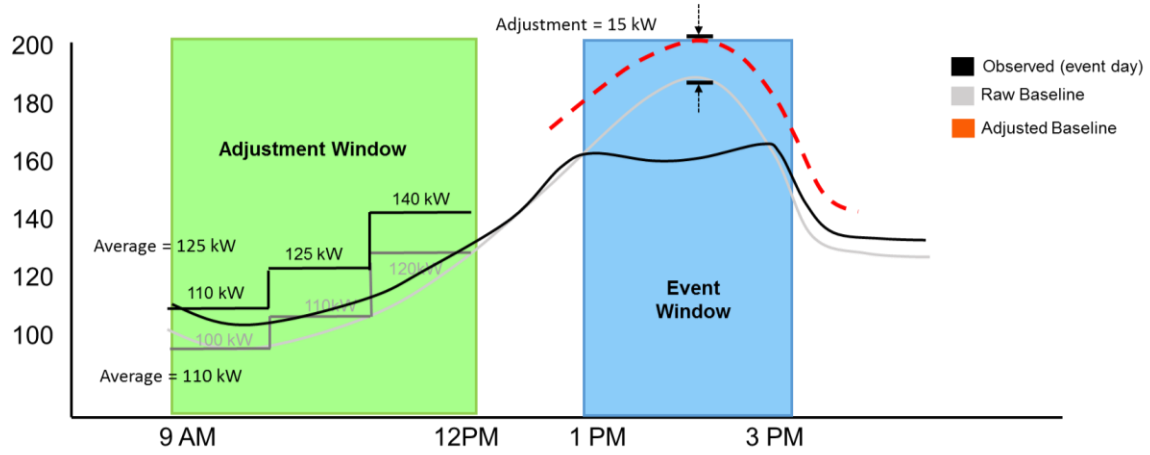
After the raw baseline was calculated, a day-of "Adjustment Factor" was calculated and applied to the raw baseline to create the "Adjusted Baseline," as follows:

- Designate the three hours prior to the event, excluding the hour immediately prior to the event, as the "Adjustment Window."
- Calculate the average observed load on the event day during the Adjustment Window (single value).
- Calculate the average load of the three baseline days during the Adjustment Window (single value).
- For each interval in the event window, add/subtract an Adjustment Factor to/from the raw baseline to calculate the Adjusted Baseline. The Adjustment Factor (single value) is defined as the difference of the average observed load and the average

load of baseline days, capped at +/- 20 percent of the corresponding baseline average load.

A sample calculation is illustrated in Figure 1. In this example, the adjusted baseline is 15 kW higher than the raw baseline during the event window, because the actual average observed load during the adjustment window was 15 kW higher on the event day (125 kW) compared to the baseline days (110 kW).

Figure 1: Illustration of Adjusted Baseline Calculation



2.4 Net Impact Analysis

2.4.1 Self-Report Approach

The evaluation team estimated net impacts for most programs 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 the 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 (i.e., 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 (e.g., would less efficient equipment have been installed, would the project have been delayed)?
- Were there other program or utility interactions that affected the decision to choose high efficiency equipment (e.g., 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 TRM.[5] For the EPE 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.

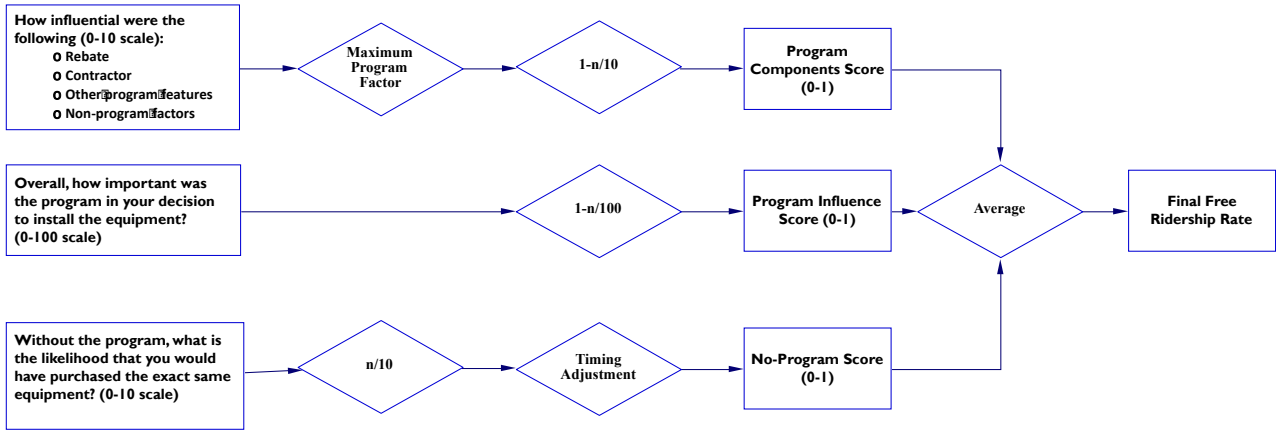
Each component was assessed using survey responses that rated the influence of various factors on the respondent's equipment choice. Since opposing biases potentially affect the main components, the No-Program Component typically indicates higher free ridership than the Program Component/Influence questions. Therefore, combining these opposing influences helps mitigate the potential biases. This framework also relies on multiple questions that are crosschecked with other questions for consistency. This prevents any single survey question from having an excessive influence on the overall free ridership score.

Figure 2 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

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

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 2: 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 2, 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 Component Questions

A separate battery of ***No-Program Component*** questions was designed to understand what the customer might have done if the EPE 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 EPE.

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 Component questions were analyzed and combined with a timing adjustment to calculate the No-Program score, as shown in Figure 2. 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:

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

2.5 Gross and Net Realized Savings Calculations

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.):

Gross Realized Savings =

(*Ex Ante* Savings)*(Installation Adjustment)*(Engineering Adjustment Factor)

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

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

2.6 Cost Effectiveness

The cost effectiveness of EPE's 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 requested the following from EPE:

- 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;
- Any assumed non-energy benefits; and
- Administrative costs (all non-incentive expenditures associated with program delivery).

In response to this data request, EPE provided its annual average avoided costs, discount rate, line loss factors, and program costs. EPE does not explicitly quantify separate avoided costs of CO2 emissions or transmission and distribution, instead including these factors in the avoided costs of energy and capacity.

For all programs, the evaluation team took the energy savings and effective useful life values from the final PY2019 tracking data submitted by EPE. 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 EPE were reasonable. The final cost-effectiveness analysis uses net verified impacts, which take into account NTG ratios and engineering adjustment 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. The evaluation team applied this 20 percent benefit adder to the benefits calculated for EPE's NM EnergySaver program.

3 Impact Evaluation Results

The results of the PY2019 impact evaluation are shown in **Error! Reference source not found.** (kWh) and **Error! Reference source not found.** (kW), with the programs evaluated in 2019 highlighted in blue.

As noted previously, each program is required to be evaluated a minimum of once every three years. For 2019, the evaluated programs covered 50 percent of the total *ex ante* kWh savings and 42 percent of the total *ex ante* kW savings.

Table 7: PY2019 Savings Summary - kWh

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
LED Lighting	205,534	6,403,835	1.0000	6,403,835	0.6700	4,290,570
LivingWise	2,466	448,180	1.0000	448,180	1.0000	448,180
Energy Star New Homes	400	550,764	1.0000	550,764	0.9130	502,848
NM EnergySaver	735	1,923,139	1.1228	2,159,256	1.0000	2,159,256
Residential Comprehensive	1,333	4,042,721	1.0000	4,042,721	0.6613	2,673,452
SCORE Plus	74	7,336,816	1.0099	7,409,645	0.6692	4,958,534
Commercial Comprehensive	147	2,106,527	0.9970	2,100,207	0.7189	1,509,839
Commercial Load Management	6	6,392	1.0000	6,392	1.0000	6,392
Total	**210,695**	**22,818,374**		**23,121,000**		**16,549,071**

Table 8: PY2019 Savings Summary - kW

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
LED Lighting	205,534	1,080	1.0000	1,080	0.6700	724
LivingWise	2,466	40	1.0000	40	1.0000	40
Energy Star New Homes	400	246	1.0000	246	0.9130	224
NM EnergySaver	735	709	1.0426	739	1.0000	739
Residential Comprehensive	1,333	2,436	1.0000	2,436	0.6613	1,611
SCORE Plus	74	1,332	0.9773	1,302	0.6692	871
Commercial Comprehensive	147	266	0.9983	265	0.7189	191
Commercial Load Management	6	489	1.0062	492	1.0000	492
Total	**210,695**	**6,598**		**6,600**		**4,892**

Details on the individual program impacts are summarized below, with additional details on the analysis methods and results for some programs included as appendices where noted.

3.1 Commercial Comprehensive, SCORE Plus, and NM EnergySaver Programs

3.1.1 Gross Impacts

The *ex ante* 2019 gross savings are summarized in Table 9 for the Commercial Comprehensive and SCORE Plus programs. In total, the Commercial Comprehensive program accounted for 9 percent of energy impacts in EPE's overall portfolio, while the SCORE Plus program accounted for 32 percent and NM EnergySaver accounted for 8 percent of energy impacts.

Table 9: Commercial Comprehensive, SCORE Plus, NM EnergySaver Gross Savings Summary

Program	# of Projects	Expected Gross kWh Savings	Expected Gross kW Savings
Commercial Comprehensive	147	2,106,527	266
SCORE Plus	74	7,336,816	1,332
NM EnergySaver	735	1,923,139	709

The majority of the gross impact evaluation activities were devoted to engineering desk reviews of a sample of projects. For the desk reviews, separate samples were drawn for the Commercial Comprehensive, SCORE Plus, and NM EnergySaver programs. For each program, 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 measure group. 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 designs are shown in Table 10 through Table 12. For Commercial Comprehensive, the sample had a relative precision of 90/5.3 for the program overall. For NM Energy Saver, the sample had a relative precision of 90/6.9 for the program overall. For SCORE Plus, the sample had a relative precision of 90/6.5 for the program overall.

Table 10: Commercial Comprehensive Desk Review Sample

Measure Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Lighting	1	11	84,122	925,338	43.9%	6
Lighting	2	20	31,170	623,406	29.6%	6
Lighting	3	91	5,405	491,816	23.3%	5
Other	1	3	7,551	22,652	1.1%	3
Other	2	6	4,150	24,902	1.2%	3
Other	3	16	1,151	18,413	0.9%	3
Total		**147**	**22,258**	**2,106,527**	**100%**	**26**

Table 11: SCORE Plus Desk Review Sample

Measure Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Lighting	0	4	483,598	1,934,390	26.4%	4
Lighting	1	8	186,288	1,490,300	20.3%	6
Lighting	2	26	36,859	958,334	13.1%	5
Other	0	2	1,103,494	2,206,987	30.1%	2
Other	1	34	21,956	746,805	10.2%	5
Total		**74**	**366,439**	**7,336,816**	**100%**	**22**

Table 12: NM EnergySaver Review Sample

Measure Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Advanced Power Strip	1	42	2,622	110,126	5.7%	2
HVAC	1	101	5,758	581,512	30.2%	4
HVAC	2	135	4,071	549,534	28.6%	4
HVAC	3	182	3,020	549,610	28.6%	3
LED	1	79	251	19,852	1.0%	2
LED	2	103	137	14,110	0.7%	2
Smart Thermostat	1	31	2,039	63,210	3.3%	3
Water Conservation	1	25	843	21,071	1.1%	4
Water Conservation	2	37	381	14,114	0.7%	4
Total		**735**	**2,125**	**1,923,139**	**100%**	**28**

As discussed in the *Evaluation Methods* chapter, the evaluation team determined gross realized impacts for the Commercial Comprehensive, SCORE Plus, and NM EnergySaver programs by performing engineering desk reviews on the sample of projects.

For prescriptive projects, the evaluation team found measures that existed in both the New Mexico TRM and the Texas TRM. In the cases where EPE calculated savings using the Texas TRM, the evaluation team reviewed both savings sources and deferred to the New Mexico TRM if the Texas TRM did not offer more accuracy. Other incentivized measures existed only in the Texas TRM. The evaluation team reviewed the algorithms from the Texas TRM for accuracy and adjusted calculations as necessary to verify savings estimates.

EPE has developed Excel-based calculators to estimate savings for lighting and HVAC projects. The factors and assumptions used in these calculators were reviewed by the evaluation team and compared to the New Mexico TRM. The evaluation team reviewed any calculator assumptions that deviated from the New Mexico TRM to determine if the calculator value was reasonable in comparison to the available TRM values. The evaluation team did not modify calculator values, which deviated from the New Mexico TRM but appeared consistent with the TRM values.

For the energy impacts overall, the desk reviews resulted in an engineering adjustment factor of 0.9970 for the Commercial Comprehensive program, 1.0099 for the SCORE Plus program, and 1.1228 for the NM EnergySaver program. For the kW impacts, the engineering adjustment factor was similar at 0.9983 for Commercial Comprehensive, 0.9773 for SCORE Plus, and 1.0426 for NM EnergySaver (Table 13, Table 14).

Table 13: PY2019 Gross kWh Impact Summary

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings
Commercial Comprehensive	147	2,106,527	0.9970	2,100,207
SCORE Plus	74	7,336,816	1.0099	7,409,645
NM EnergySaver	735	1,923,139	1.1228	2,159,256

Table 14: PY2019 Gross kW Impact Summary

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings
Commercial Comprehensive	147	266	0.9983	265
SCORE Plus	74	1,332	0.9773	1,302
NM EnergySaver	735	709	1.0426	739

For the projects that received engineering desk reviews, engineering adjustment factors differed from 1 for the following reasons:

- One project in the Commercial Comprehensive program completed A/C tune-ups on several units. EPE calculated the savings for this project using the savings methodology and algorithm inputs (EFLHc) from the Texas TRM. The evaluation team adjusted the calculations to use EFLHc for a small retail building type derived for the New Mexico climate (Las Cruces), resulting in a 44 percent reduction in energy (kWh) savings. The adjustment did not impact the peak demand (kW) savings.
- The evaluation team adjusted the estimated savings for one project in the SCORE Plus program that installed HVAC system upgrades, for which EPE calculated the heating savings using SEER efficiencies and did not account for equipment quantities. The evaluation team made two adjustments to the *ex ante* calculations.

The first adjustment was to account for the number of units installed based on the project documentation. The second adjustment included using the COP/HSPF equipment efficiencies to calculate the heating savings for the installed equipment. These adjustments combined to increase the energy (kWh) and peak demand (kW) savings by 123 percent and 124 percent, respectively.

- The evaluation team adjusted the estimated savings for 25 of the 28 projects in the NM EnergySaver program impact sample. These adjustments increased the energy (kWh) and peak demand (kW) savings for 24 of the projects in the impact sample. The adjustments included the following:
    - The evaluation team updated the savings algorithms for the Duct Efficiency, Infiltration, Water Jacket, Low Flow Showerheads, and LED bulbs measures to align with the algorithms and algorithm inputs outlined in the New Mexico TRM.
    - The evaluation team also found inconsistencies between the equipment quantities in the tracking database and the information in the project files, specifically as it pertains to the amount of LED bulbs installed at two homes. The evaluation team updated the savings calculations using the information listed in the project documentation.

A summary of the individual desk review findings for each of the reviewed projects is included in Appendix F.

3.1.2 Net Impacts

Net impacts for the Commercial Comprehensive program were developed using the self-report method described in the *Evaluation Methods* chapter and based on participant phone survey data. For the SCORE Plus program, the average values from the 2018 and 2019 evaluations were utilized, due to the small number of interviews that were able to be completed with 2019 SCORE Plus participants. In particular, there were three large SCORE Plus projects that accounted for 78 percent of the savings for the survey sample, and these three responses had a large impact on the final free ridership estimates. Given the small survey sample sizes for both years, the decision was made to use the average free ridership from 2018 and 2019 to guard against a small number of responses having too large an influence on the overall free ridership rate.

For the SCORE Plus and Commercial Comprehensive programs, the survey respondents acknowledged the assistance they received from EPE through the program and generally enjoyed working with the program. As the expanded survey questions relating to free ridership make clear, however, the program is only one of several factors that are affecting customers' choices regarding energy efficiency. While the program is having a positive

effect, factors unrelated to EPE involvement (e.g., corporate or management directives to install energy efficient equipment) are also driving these equipment choices.

The resulting NTG ratio for the Commercial Comprehensive program is 0.7189; for the SCORE Plus program, the NTG ratio is 0.6692, and for NM EnergySaver, the NTG ratio is 1.0000.

Table 15 and Table 16 summarize the PY2019 net impacts calculations for the three programs.

Table 15: PY2019 Net kWh Impact Summary

Program	# of Projects	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Commercial Comprehensive	147	2,100,207	0.7189	1,509,839
SCORE Plus	74	7,409,645	0.6692	4,958,534
NM EnergySaver	735	2,159,256	1.0000	2,159,256

Table 16: PY2019 Net kW Impact Summary

Program	# of Projects	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Commercial Comprehensive	147	265	0.7189	191
SCORE Plus	74	1,302	0.6692	871
NM EnergySaver	735	739	1.0000	739

3.2 Commercial Load Management

The evaluation team found one discrepancy between the Trane-calculated impact analysis and its own calculations among the combinations of 48 sites and events (6 sites * 8 events = 48 evaluations). For the August 7, 2019 event for Gadsden High School, when setting the raw baseline, the 8th and 9th highest baseline days had the exact same average kW for the event window, which was from 3:30 p.m. to 5:30 p.m. The Trane calculation incorporated both of these days into its calculation of the raw baseline (i.e., the Trane calculation used nine days to calculate the raw baseline as opposed to eight). This option was not discussed during the 2018 methodology review or detailed in the document describing the high 8-of-10 method, but the evaluation team believes that only one of these two days should count

in the raw baseline calculation. Our calculation, which uses recency in the case of a tie, incorporated only one of the two "low-demand" days rather than both of the "low-demand" days, yielding a slightly higher raw baseline and a slightly higher impact. Other than the instance described above, the evaluation team was able to exactly replicate the load reductions calculated by Trane. The result of the discrepancy is that the evaluation team's calculated average delivered load reduction for the portfolio is 3 kW higher than Trane's calculation (489 kW versus 486 kW).

Demand response events may also yield energy savings if the demand reductions during the event window are not more than offset by actions such as precooling that defer demand usage to intervals outside of the event window. Our approach to estimating the net energy savings on demand response event days is similar to our approach for estimating demand savings. Recall that to measure demand savings, the evaluation team measured the difference between a site's actual load and its baseline load for the two hours in the event window only. To calculate energy savings, by contrast, the evaluation team measures the difference between a site's actual load and its baseline load for the daytime hours of event days from 8 a.m. to 8 p.m.[6] By looking at the hours outside the event window, we account for increases in energy consumption that may occur before or after the demand response event as a result of pre-cooling or other load-shifting activities.

Table 17 shows the portfolio net energy savings for each event and in total. Total energy savings across the eight events was 6,392 kWh.

[6] The cutoff hours of 8 a.m. and 8 p.m. were chosen based on a comparison of daily load shapes across different days and specifically the observation that load profiles tend to track each other closely until 8 a.m., and converge again after 8 p.m. We measure energy savings from 8 a.m. to 8 p.m. only because we would not expect the baseline and event day loads to differ outside of these time periods as a result of weather conditions or other factors.

Table 17: Energy Savings by Event Day

Date	Energy Savings (kWh)
Aug 2	822
Aug 7	950
Sep 18	682
Sep 23	442
Sep 25	231
Sep 26	349
Sep 27	319
Sep 30	2,597
Total	**6,392**

4 Cost Effectiveness Results

The evaluation team calculated cost effectiveness using the Utility Cost Test (UCT) for each individual EPE energy efficiency program, as well as the cost effectiveness of the entire portfolio of programs.[7] The evaluation team conducted these tests in a manner consistent with the California Energy Efficiency Policy Manual.[8]

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 18.

Table 18: 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

Using net realized savings from this evaluation and cost information provided by EPE, the evaluation team calculated the ratio of benefits to costs for each of EPE's programs and for the portfolio overall. The results of the UCT are shown below in Table 19. The portfolio overall was found to have a UCT ratio of 1.48.

[7] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
[8] California Public Utilities Commission. *California Energy Efficiency Policy Manual – Version 5*. 2013. http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPolicyManualV5forPDF.pdf

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Table 19: PY2019 Cost Effectiveness

Program	Utility Cost Test (UCT)
Commercial Comprehensive	0.92
SCORE Plus	1.04
LED	2.07
Residential Comprehensive	2.36
ENERGY STAR New Homes	0.90
NM EnergySaver	1.75
LivingWise	1.26
Commercial Load Management	0.61
Overall Portfolio	**1.48**

5 Process Evaluation Results

This chapter summarizes key methods and findings from the PY2019 process evaluation of the EPE Commercial Comprehensive and SCORE Plus programs. For the Commercial Comprehensive program, the evaluation team spoke with both participants and contractors. For SCORE Plus, we spoke with participants. The evaluation team attempted to complete an interview with the one participating contractor in the NM EnergySaver program but was unable to successfully contact the participant. These findings, along with findings from the impact evaluation, informed the conclusions and recommendations presented in the following chapter.

5.1 Commercial Comprehensive

5.1.1 Participant Surveys

As part of the evaluation, the evaluation team conducted telephone surveys with representatives from 31 participating companies that received rebates through the EPE Commercial Comprehensive program. These surveys were completed in March 2020 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 the program experience;
- Survey responses for use in the free ridership calculations;
- Baseline data on energy use and/or equipment holdings;
- Participant drivers and barriers; and
- Additional process evaluation topics.

EPE provided program data on the Commercial Comprehensive participant projects, which allowed the evaluation team to select a sample for surveys. The evaluation team randomly selected and recruited program participants from the entire population of Commercial Comprehensive participants that had valid contact information.

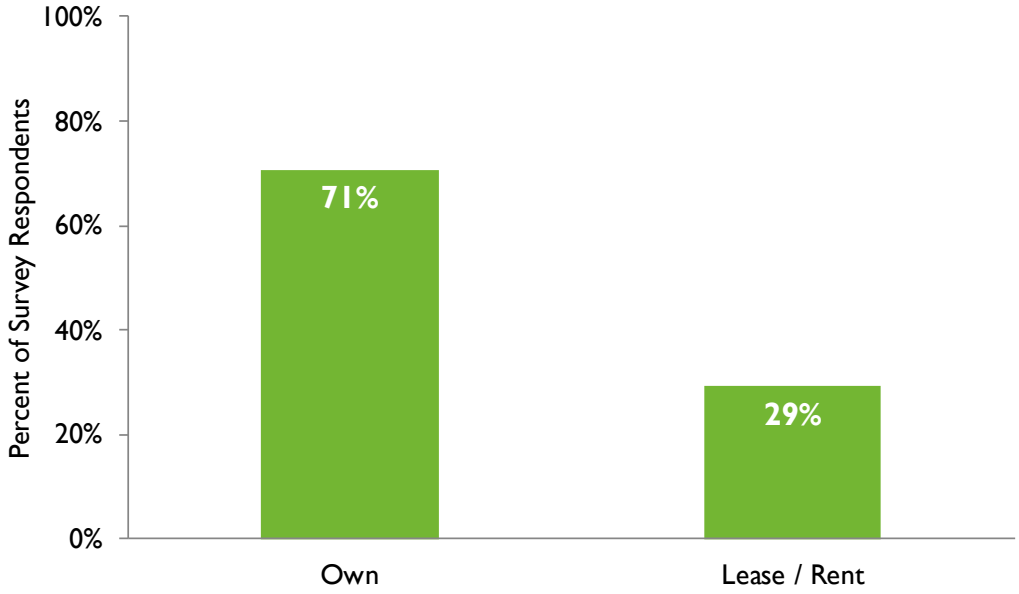
The following subchapters report results on company demographics, sources of program awareness, motivations for participation, and program satisfaction.

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

We asked survey respondents whether their company owns or leases the building where the project was completed. Somewhat counterintuitive to what would be expected of small businesses, Figure 3 shows that 71 percent of participants own the building where the measure was installed compared to 29 percent of respondents who rent.

Figure 3: Participant Own or Rent (n=30)



The following two figures summarize the survey respondents' building size and number of employees. Mostly consistent with program design, Figure 4 and Figure 5 both show that the majority of participant firms are mid-sized to smaller businesses. Forty percent of participating firms reported occupying buildings of less than 10,000 square feet, while 49 percent occupied buildings of between 10,000 and 49,999 square feet. A small portion (10%) reported occupying buildings of 50,000 square feet or greater. Additionally, 65 percent of participants reported having fewer than 20 full-time employees.

Figure 4: Participant Building Size (n=24)

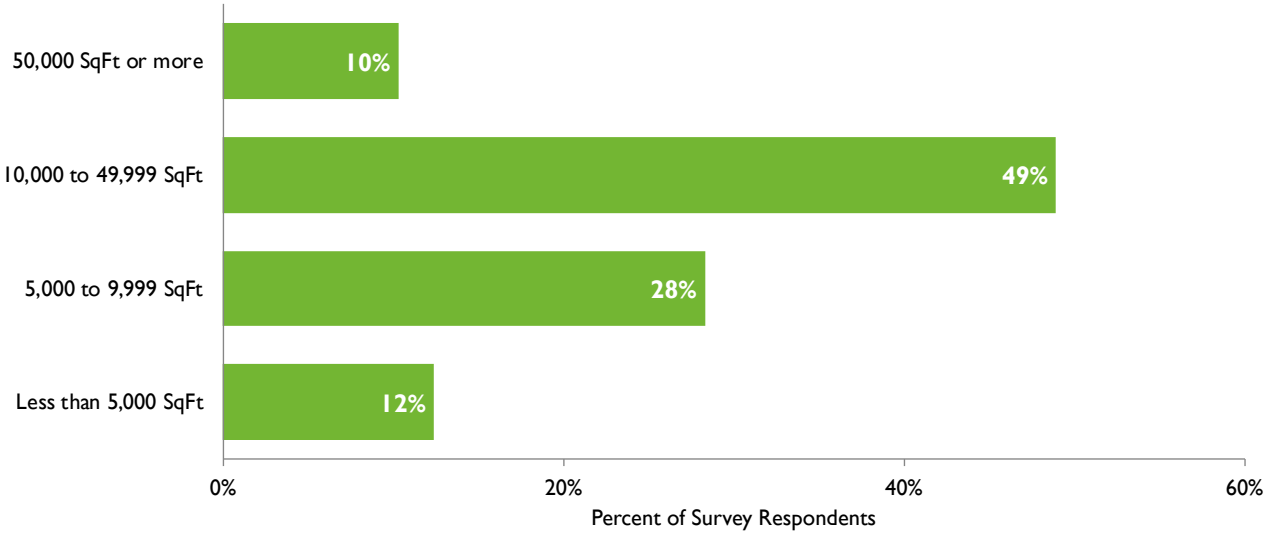
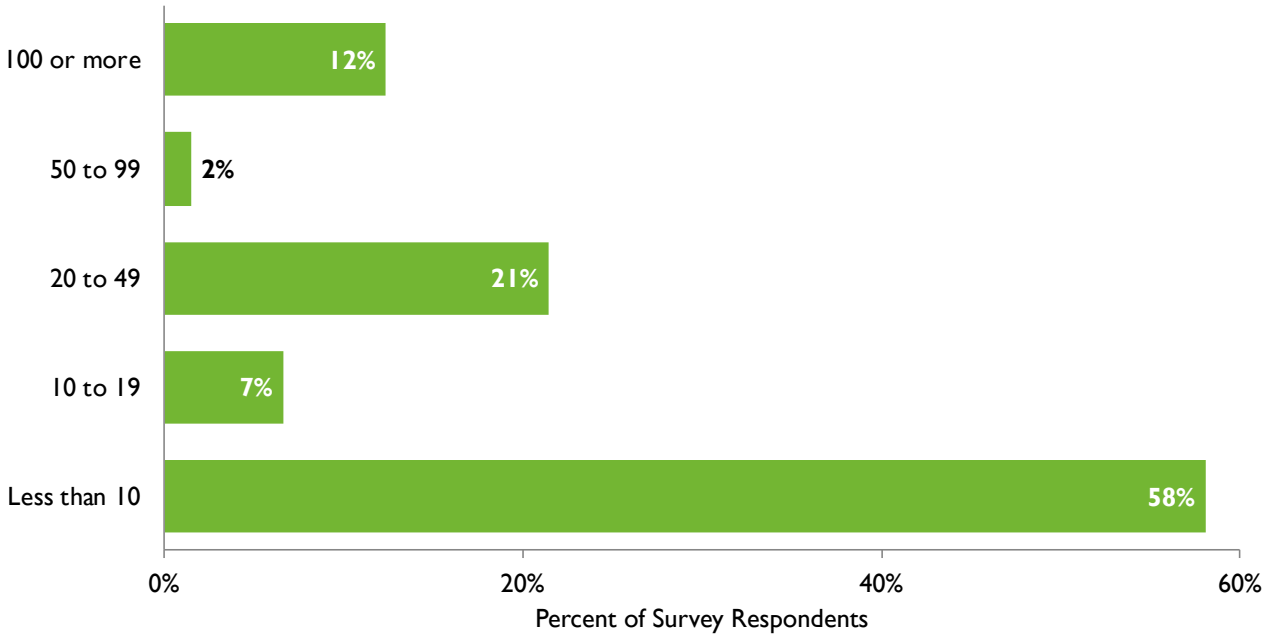
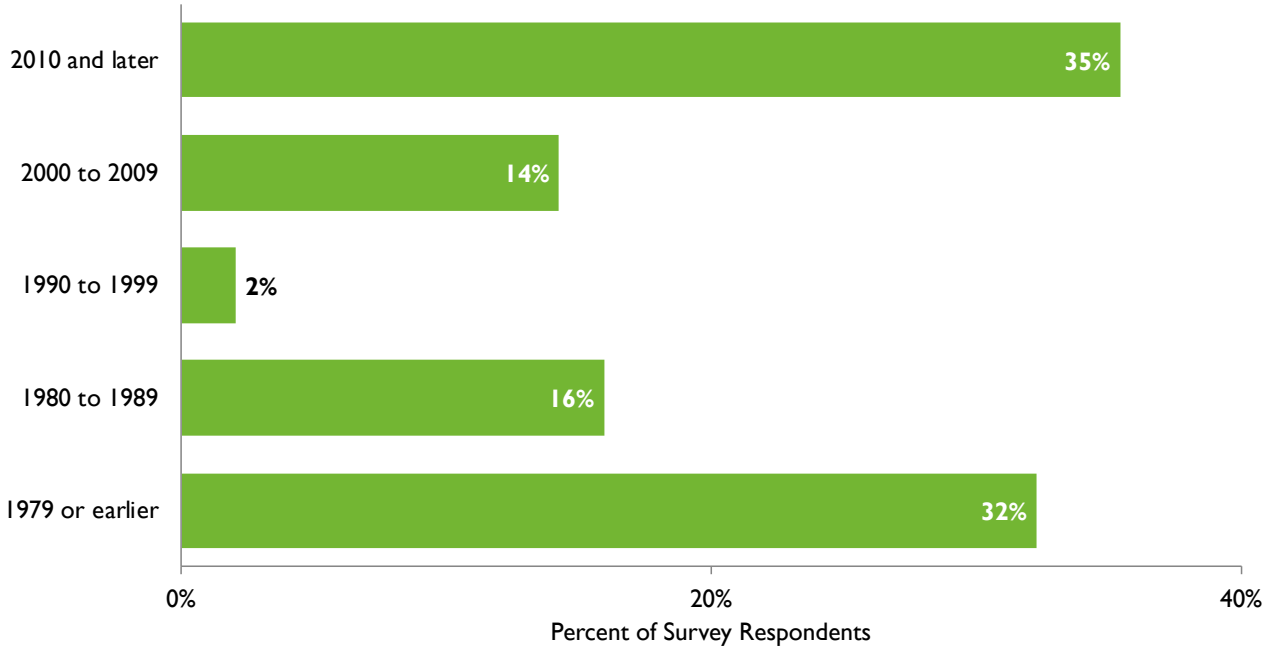


Figure 5: Participant Number of Employees (n=25)



Additionally, Figure 6 shows that there was an almost even distribution of newer and older buildings targeted in PY2019. A little less than half of participants' (49%) buildings were built after or during the year 2000, and 51 percent were built before the year 2000. This suggests that the program is doing an equally good job at targeting both older buildings where the potential for significant energy savings are the greatest, and newer buildings.

Figure 6: Participant Building Age (n=23)

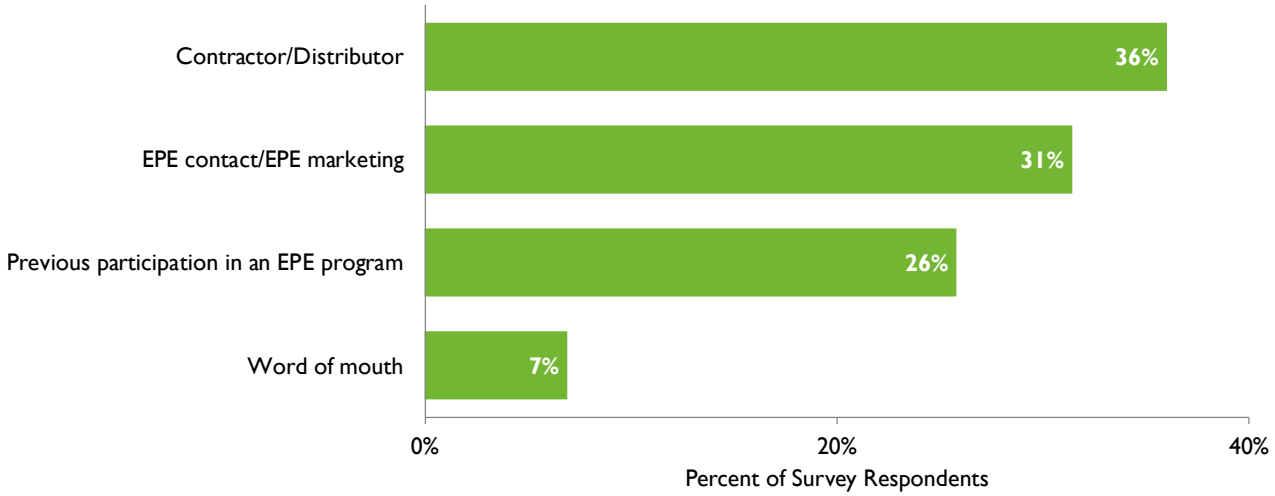


Sources of Awareness

Commercial Comprehensive program participants became aware of the program rebates and assistance through a variety of channels including contractors and/or distributors, word of mouth, EPE marketing and outreach, and previous participation in a rebate program. As shown in Figure 7, 36 percent of participants learned about the program offerings through contractors or distributors, and 31 percent of participants learned about the program offerings through an EPE contact or EPE marketing materials.

For the three respondents who indicated that they learned about the program through multiple sources, the evaluation team asked which source was the most useful in their decision to participate. Respondents most frequently indicated that interactions with contractors (73%) were the most useful sources of awareness. This indicates that interactions with contractors and distributors and interactions with EPE (either through direct contact and/or marketing) are significant drivers for the program.

Figure 7: Initial Source of Awareness (n=30)



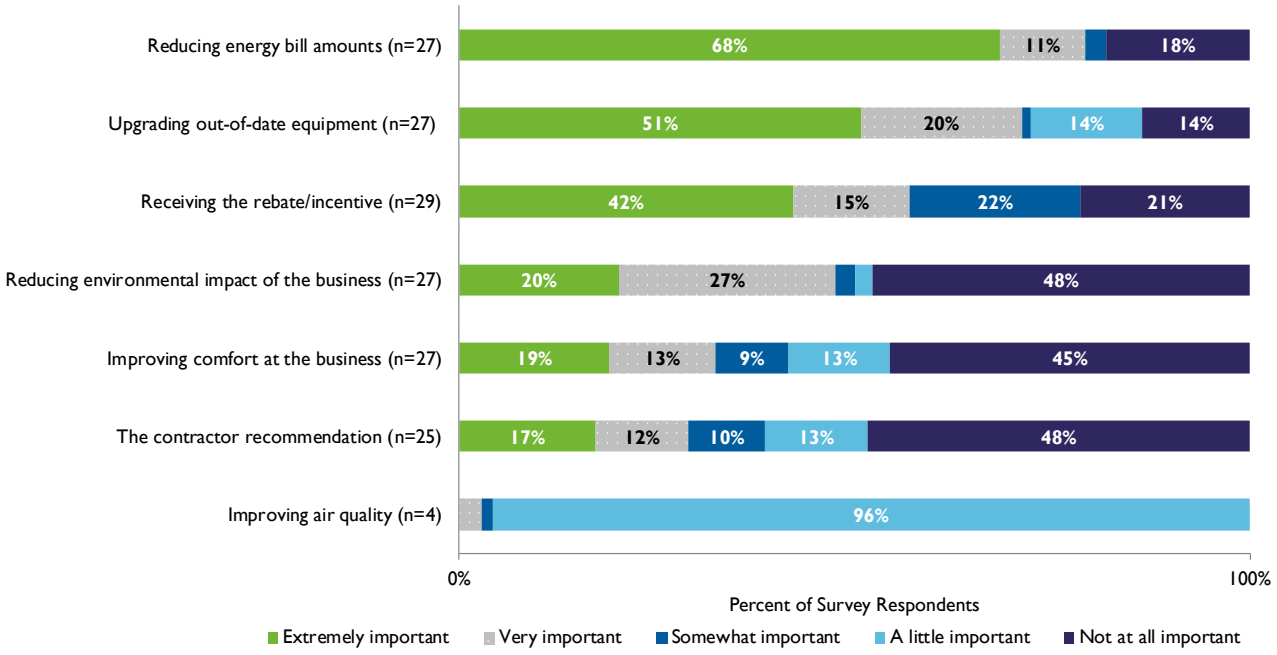
5.1.2 Motivations for Participation

Figure 8 shows the level of importance placed by respondents on a variety of factors that might be influencing customers to participate in the Commercial Comprehensive program.

Sixty-eight percent of respondents reported that reducing energy bill amounts was extremely important in their decision to participate in the program. Other factors that participants reported as being important included upgrading out-of-date equipment, receiving the rebate, and reducing environmental impacts of their business.

Aside from improving air quality (which was only asked among HVAC measure participants), the contractor recommendation was the least important factor in respondents' decisions to participate in the Commercial Comprehensive program, with 29 percent saying it was extremely or very important in their decision to participate. This suggests the real value of the contractors is to introduce the program to participants.

Figure 8: Motivations for Participation



In addition to motivations for participating, respondents were given a list of potential program and non-program factors that may have influenced their decision about how energy efficient their equipment would be and were then asked to rate their importance on a 0 to 10 point scale.[9] As shown in Figure 9, the majority of respondents rated the recommendation by a vendor or distributor, the dollar amount of the rebate, the recommendation by a contractor, and previous participation in an EPE program as very or extremely important (a score of 8 to 10) in their decision to determine how energy efficient their equipment would be. Technical assistance from EPE staff was the least important factor in the participants' decision to determine how energy efficient their project would be, with just 11 percent saying it was very or extremely important and 89 percent reporting that it was a little important (a score of 4 or 5) or not at all important (a score of 0 to 3) in their decision.

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

Figure 9: Importance of Program Factors

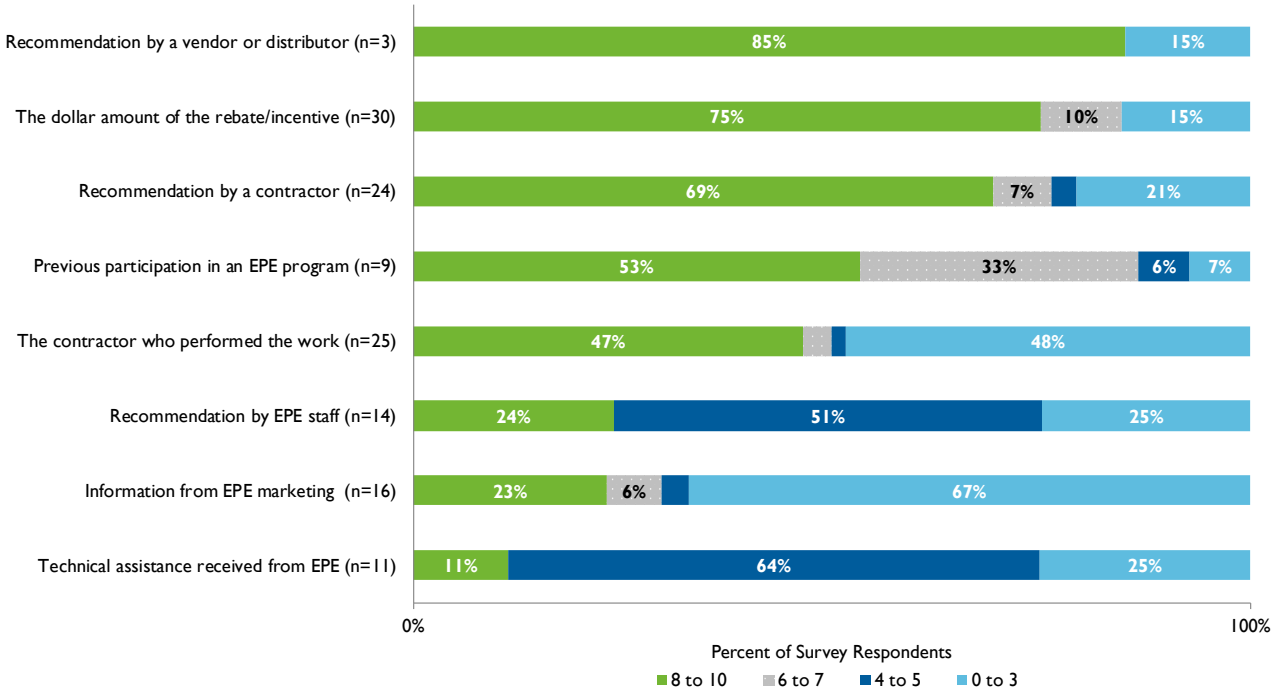
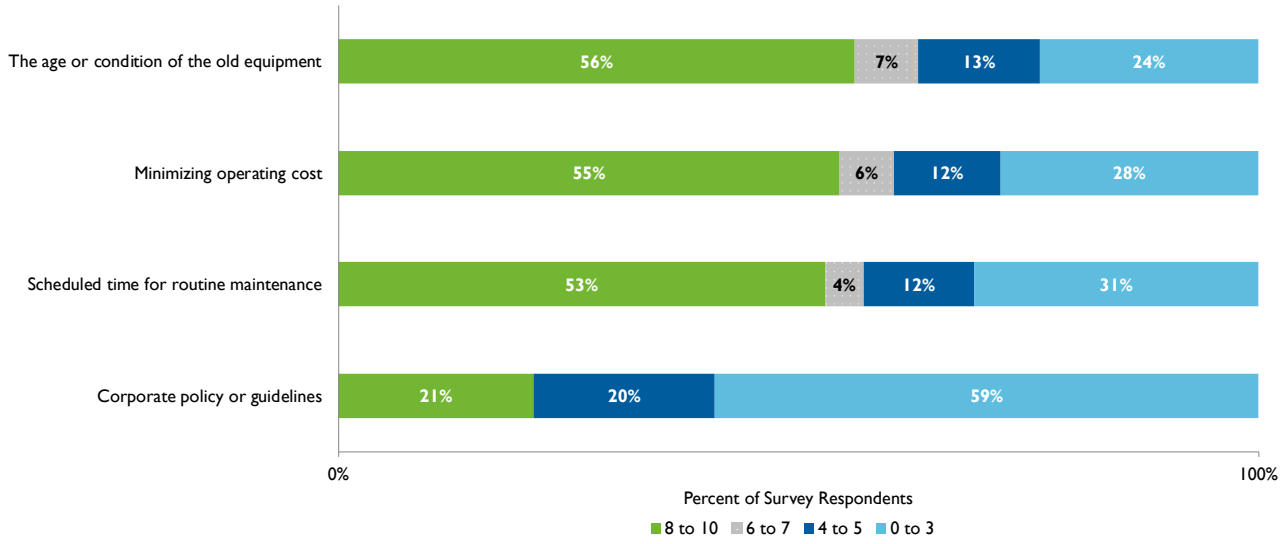


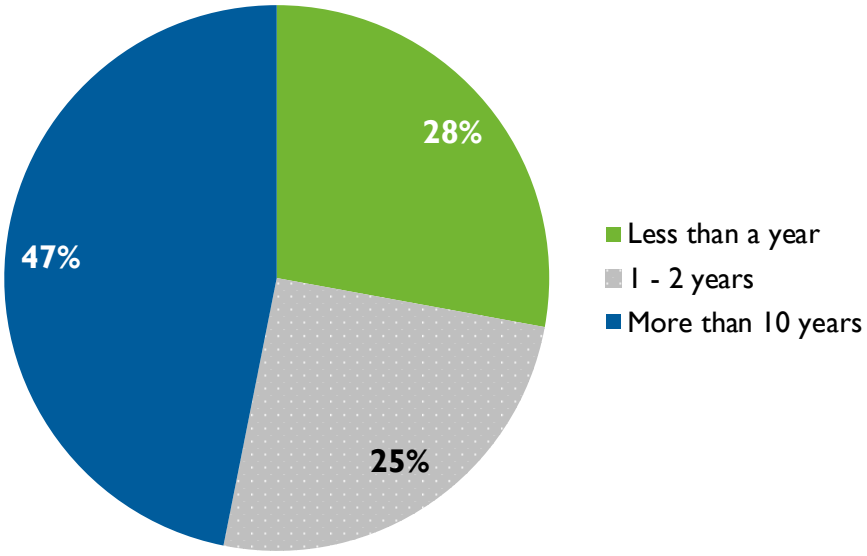
Figure 10 shows that the majority of Commercial Comprehensive participants rated the age or condition of old equipment, minimizing operating costs, and scheduled time for routine maintenance as very to extremely important (a score of 8 to 10) on the decision to determine how energy efficient their project would be. Corporate policy and/or guidelines was the least influential non-program factor in the decision regarding the efficiency level of the equipment, with 21 percent of participants rating it extremely important and 59 percent rating it as not at all important.

Figure 10: Importance of Non-Program Factors (n=25)



To allow the evaluation team to get a sense of the condition of the existing equipment, respondents were asked approximately how much longer the equipment would have lasted if it had not been replaced. Figure 11 shows that a large portion (47%) of surveyed respondents believed that their equipment would have lasted 10 or more years. This suggests that the program is doing a good job of targeting customers with functioning equipment, rather than those whose equipment is not working and would need to be replaced anyway (i.e., potential free riders).

Figure 11: Equipment Remaining Life (n=14)



Participant Satisfaction

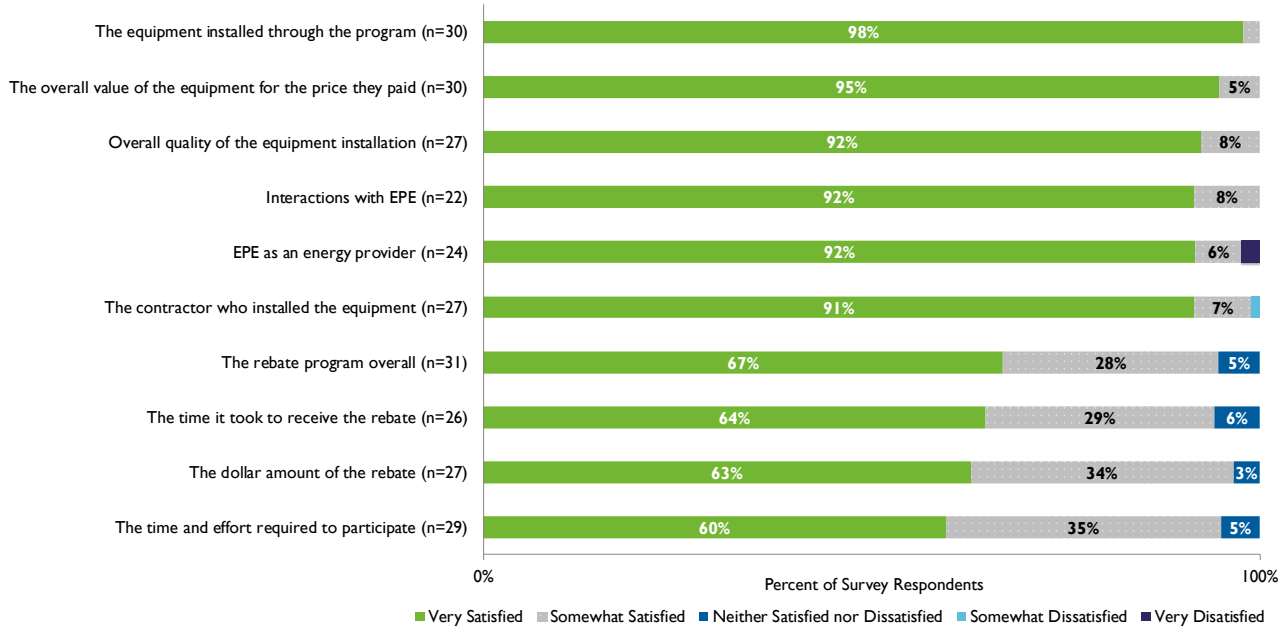
The participants evaluated their satisfaction with various components of the Commercial Comprehensive program on the following scale: very satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, and very dissatisfied. The individual components that participants were asked to rank their satisfaction with included:

- EPE as an energy provider
- The rebate program overall
- The equipment installed through the program
- The contractor who installed the equipment
- Overall quality of the equipment installation
- The time it took to receive the rebate
- The dollar amount of the rebate
- Interactions with EPE
- The overall value of the equipment for the price they paid
- The time and effort required to participate
- The project application process

Figure 12 summarizes the satisfaction levels of the Commercial Comprehensive program participants.

Overall, surveyed program participants expressed high levels of satisfaction with the Commercial Comprehensive program components. As shown in Figure 12, the majority of participants reported that they were "very satisfied" with all of the program components. Ninety-eight percent reported being "very satisfied" with the equipment installed through the program, and 95 percent were "very satisfied" with the overall value of the equipment for the price they paid. The amount of time and effort required to participate in the program received the lowest satisfaction rating from participants (but they were still relatively satisfied), with 35 percent reporting they were "somewhat satisfied" and 5 percent mentioning they were "neither satisfied nor dissatisfied."

Figure 12: Participant Program Satisfaction



5.1.2 Contractor Interviews

The evaluation team completed interviews with nine contractors involved in the Commercial Comprehensive program. The interviews focused on the following topics:

- Contractor background and program involvement;
- Program satisfaction; and
- Role and influence of the EPE programs in the market.

Due to the low number of interviews and the depth of discussion, this section presents results in a qualitative fashion to show the range of perceptions and responses.

Contractor Background and Program Involvement

Interviewed contractors from the Commercial Comprehensive program reported that most of their projects in 2019 were completed in the commercial sector. Four contractors also worked on residential properties. The interviewed contractors hold a variety of roles such as property manager and owner of the company. Of those who responded, most contractors involved in the Commercial Comprehensive program specialize in lighting, with one specializing in HVAC equipment.

Program Satisfaction

Contractors were asked to quantify their level of satisfaction with the program overall using a 1 to 5-point scale, with 1 indicating very dissatisfied and 5 indicating very satisfied. Seven contractors with the Commercial Comprehensive program rated the program a 5 (very satisfied), and two contractors rated the program a 4 (somewhat satisfied).

All interviewed contractors were satisfied with the program and praised EPE for consistent and clear communication. Four contractors mentioned that their EPE rep was available for questions and problems, which helped their customers as well. One material suggestion made was to implement an app for contractors to use in order to keep up with technology demands. Another interviewed contractor stated that the rebate process should be sped up to keep up with other programs in the area that can deliver rebates within four weeks on average, estimating that the EPE Commercial Comprehensive rebate takes around six weeks. The EPE program literature states that rebates may take a total of four to five weeks.

When asked to describe their experience with the process of completing the paperwork required for the programs, the consensus was positive overall. Eight contractors agreed that the paperwork process is simple and concise, with one interviewee warning that users not familiar with lighting systems may have questions on the workbook portion.

When asked to discuss the ways in which the program is helpful to contractors in their business, all contractors responded positively. The interviewees attributed an increase in business and up-sells to the program, and one mentioned that having the EPE logo on materials gave them more credibility.

In addition to customer satisfaction, one contractor stressed the importance of the program on their small business, stating:

"This program allows me to be the kind of person and business I want to be, helping people and getting customers what they need."

Program Influence

In an effort to gauge the level of influence the Commercial Comprehensive program has on the market for energy efficient equipment, the evaluation team explored what role the program played in the contractors' and customers' ultimate choices, and how contractors became aware of the Commercial Comprehensive program.

All interviewed contractors believe the Commercial Comprehensive program will continue to increase the interest and demand for energy efficient equipment. Four contractors mentioned that their customers likely would not have upgraded to energy efficient models without the program.

Four interviewed contractors agreed that the Commercial Comprehensive program influenced what kind of products to recommend to customers in order to be eligible for the rebate.

When asked to recall how they first became involved with the program, six interviewed contractors said they heard of it through others in their industry. One contractor worked at EPE on the initial design of the program before they retired, then became involved when they opened their own business. Two others recalled that they had seen the program on EPE's website. While most contractors faced no barriers and had no reservations about participating, one noted that upon implementation of the program four years ago, customers were skeptical of LEDs and the initial price to install them. The skepticism of the LEDs caused a barrier initially; however, with increasing education and familiarity with LEDs the barrier has since been eradicated.

In order to educate and encourage more contractors to participate in the program, some interviewed participants (n=2) suggested that EPE should reach out to small contracting firms and distribute educational materials to increase awareness and availability of the Commercial Comprehensive program. EPE staff reported that Commercial Comprehensive outreach included door to door outreach, distributor outreach, A Commercial Kick Off Meeting, Lunch and Learn in Hatch and co-promotion with Zia Natural Gas. Additionally they reported attending a Business Showcase for the Las Cruces Chamber of Commerce.

5.2 SCORE Plus Program Participant Interviews

The evaluation team completed eight in-depth interviews with 2019 EPE SCORE Plus program participants. The interviewees had completed a variety of projects, including both new construction and retrofit projects, as well as lighting and non-lighting projects.

Overall, the interviewees represented projects that accounted for 34 percent of 2019 program kWh savings, including two of the three largest projects.

The interviews were completed in March of 2020 and focused on the following topics:

- Project context and background;
- Role of the utility program;
- Role and influence of the SCORE Plus program in the decision to make efficiency upgrades; and
- Program satisfaction.

5.2.1 Project Background

Six out of eight participants completed more than one project through the SCORE Plus program; the highest number of completed projects for any one participant was 18. While participants had varying levels of interaction with the SCORE Plus program directly, all eight were familiar with the recorded project and played a significant role in their business's participation in the program. Interviewees included executive directors (n=3), administrators (n=3), and company managers (n=2).

Business types included schools and universities (n=3), retail and grocery stores (n=3), a metal fabrication company (n = 1), and a municipality (n=1). Seven out of eight participants completed some type of lighting measure in their SCORE Plus projects—including interior and exterior LED lighting replacements—while four out of seven completed some type of HVAC measure in their SCORE Plus projects. Seven participants stated that they used one or more contractors to complete their projects through the SCORE Plus program, while one participant stated that their company completed their LED replacements themselves.

5.2.2 Program Satisfaction

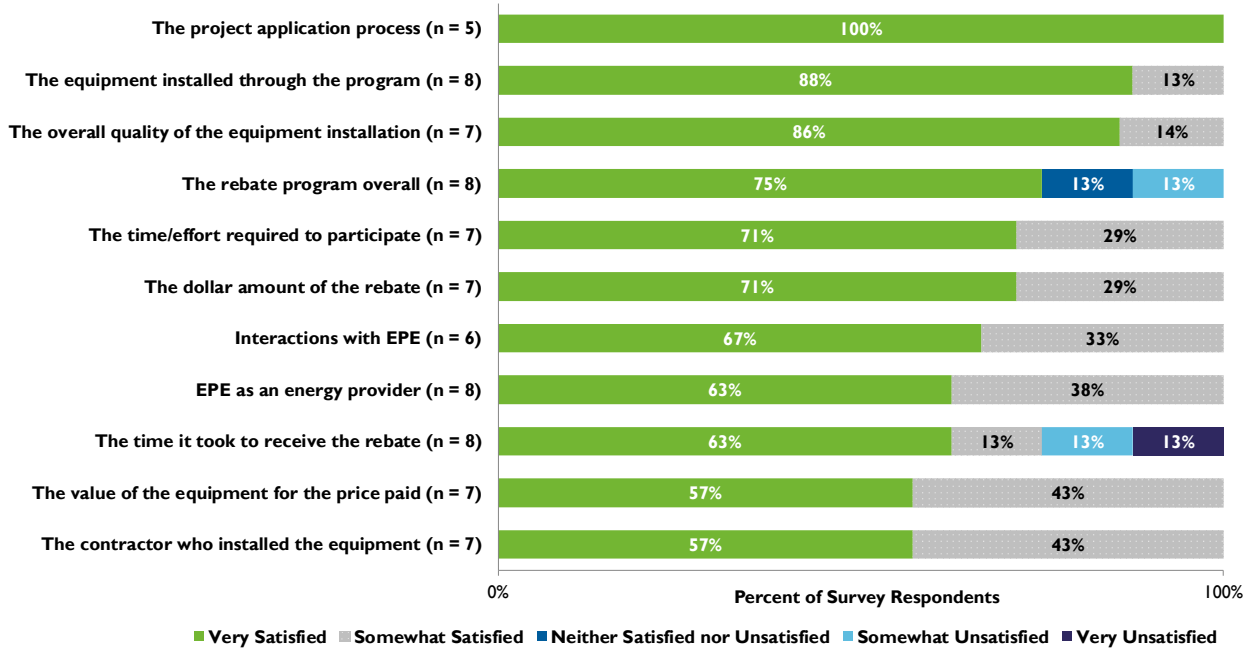
SCORE Plus interview participants were asked a series of questions to quantify their level of satisfaction with various components of the program. Participants rated their satisfaction on a scale of 1 to 5, with 1 being "very unsatisfied" and 5 being "very satisfied." The program components included:

- EPE as an energy provider
- The rebate program overall
- The equipment installed through the program
- The contractor who installed the equipment
- The overall quality of the equipment

- The amount of time it took to receive the rebate
- The dollar amount of the rebate
- Interactions with EPE
- The overall value of the equipment for the price they paid
- The amount of time and effort required to participate in the program
- The project application process

Overall, as shown in Figure 13 below, participants expressed a high level of satisfaction across most of the program components, particularly with the equipment installed through the SCORE Plus program (a mean score of 4.9) and the overall quality of the equipment installation (4.9). While seven of eight participants were very satisfied with the SCORE Plus program overall, one participant was somewhat unsatisfied with the program, resulting in a mean satisfaction score of 4.6. Additionally, participants were less satisfied with the amount of time it took to receive their rebate, with two participants stating that they were either "somewhat unsatisfied" or "very unsatisfied" (resulting in a mean score of 4).

Figure 13: SCORE Plus Participant Satisfaction



Given the relatively high level of satisfaction, participants did not share many direct suggestions for improving the SCORE Plus program. However, one participants who noted that they were not satisfied with the time it took to receive their rebate commented:

> *"We did these projects in 2017, but the funding ran out in 2017. Then, we got on the new list for funding in 2018, but the funding also ran out. It took until 2019 to get our rebate when the project was already closed. Usually, utility programs pay [the rebates] the year of the project, so I thought it was unusual."*

Additionally, one participant who was involved with a national chain store noted that their refrigeration control upgrades were not eligible for any incentives, which he felt was a missed opportunity for EPE, as he stated that there were a lot of benefits from upgrading those types of systems, particularly in terms of energy savings. EPE reported that they did not reject any refrigeration control upgrades in this program year so there may be some misunderstanding.

Program Influence

The evaluation team also asked SCORE Plus interview participants a series of questions about how various factors—both internal to the program and independent of EPE—influenced their decision to install energy efficiency equipment. These questions were asked in order to gauge the level of influence that the SCORE Plus program had on participants' decisions to upgrade their equipment relative to the non-program factors. The quantitative components of these influence questions were subsequently used to estimate free ridership and a program-level net-to-gross ratio, as outlined in the *Impact Evaluation Results* chapter.

To gauge the influence of the program, interviewees were asked how influential factors such as the rebate, any technical assistance, recommendations or information from the utility, and their prior participation in EPE rebate programs were in their decision to make efficiency upgrades. In evaluating the influence of non-program factors, the evaluation team asked participants how factors such as the financial benefits of the efficiency upgrade through reduced operating costs and pre-existing corporate energy efficiency targets contributed to their efficiency upgrade.

Overall, two out of eight participants weighed the program and non-program factors equally in their decision to upgrade their equipment, while the other six stated that the non-program factors outweighed the program factors in their decision to upgrade their efficiency equipment. Six of eight participants stated that it was very likely that they would have done the same efficiency upgrades even without the rebate in a similar timeframe. Of the remaining two participants, one participant who ranked the program and non-program factors as equal stated that they would not have completed their HVAC project if the rebate had not existed. The other participant, who ranked the non-program factors as more influential, explained that their company's energy efficiency decisions were driven by the amount of corporate capital available to them. As a result, they explained that they likely would not have completed the project without the SCORE Plus

program rebate, as their company resources would have gone to other, higher-priority projects.

In general, participants were thankful for the presence of the rebate program and remarked that they enjoyed working with the program staff.

6 Conclusions and Recommendations

Based on the results from the data collection and analysis methods described in the previous chapters, the evaluation team has developed a number of conclusions and associated recommendations to improve EPE's programs. These are organized below by program

6.1 Commercial Comprehensive Program

Process evaluation activities for the Commercial Comprehensive program included interviews with participants and contractors. Commercial Comprehensive participants who responded to the survey were likely to own the building their business was in (71%), and 65 percent of companies had fewer than 20 full-time employees. Buildings were split in age with about half being built in 2000 or later, and the rest having been built in prior years. Contractors and distributors were the most common initial sources of program awareness (36%), but EPE marketing or contact along with previous participation in an EPE program were close (31% and 26% of respondents, respectively).

Participants reported that contractors and distributors (in addition to vendors) were also important influences in their decision making process. Reducing energy bills and upgrading old equipment were the two largest motivators for participation. Close to half of survey respondents thought that their equipment would have lasted another 10 years or so, suggesting that the program is doing a good job of targeting some customers with functioning equipment. Still, the remaining half of the survey respondents thought that their equipment had two years or less before it would no longer function.

Overall, surveyed program participants expressed high levels of satisfaction with the Commercial Comprehensive program components. Contractors also reported being somewhat to very satisfied with the program overall. They believe it helps their business and that the program will continue to increase interest and demand for energy efficient equipment. Most contractors learned of the program through others in their industry.

Impact evaluation activities for the Commercial Comprehensive program included engineering desk reviews for a sample of projects. Based on these desk reviews, an engineering adjustment factor of 0.9970 was found for kWh savings, and 0.9983 was found for kW savings. Conclusions and recommendations resulting from these desk reviews are discussed below:

- The evaluation team adjusted the savings methodology and algorithm inputs (EFLHc) for one HVAC project. The *ex ante* savings were calculated using the methodology and algorithm inputs listed in the Texas TRM. The evaluation team

adjusted the EFLHc in the *ex post* savings calculation to the value listed in the NM TRM for the Las Cruces climate zone.

- **Recommendation:** Utilize New Mexico-specific algorithm inputs when they are available in the New Mexico TRM.

6.2 SCORE Plus Program

The process evaluation for the SCORE PLUS program consisted of interviews with participants that were comprised of a mix of business types, roles within companies, and equipment installed. Participants expressed a high level of satisfaction across most of the program components, particularly with the equipment installed through the SCORE Plus program. Six of eight participants stated that it was very likely that they would have done the same efficiency upgrades even without the rebate in a similar timeframe. This response is also reflected in a lower NTG score for this program.

Impact evaluation activities for the SCORE Plus program included engineering desk reviews for a sample of projects. Based on these desk reviews, an engineering adjustment factor of 1.0099 was found for kWh savings, and 0.9773 was found for kW savings. Conclusions and recommendations resulting from these reviews are discussed below:

- For one project installing HVAC equipment, the evaluation team adjusted the calculations to account for the correct quantities of installed equipment and changed the COPs used to calculate the heating savings. These adjustments combine to increase energy savings by 123 percent.
  - **Recommendation:** Ensure savings calculations account for the correct **equipment quantities.**
  - **Recommendation: When calculating the heating savings for heat pumps, use the equipment COP or HSPF in the savings algorithm.**
- The evaluation team reviewed one HVAC project for which the *ex ante* savings were calculated using IPMVP Option C (Whole Facility). The evaluation team agrees with the approach EPE used to calculate the savings, but there are several adjustments and assumptions in the savings analysis that were not explained in the project documentation. For example, EPE did not use billed usage data for three of the twelve months during the baseline period when developing their baseline regression model. Similarly, two months of post-installation data were not used to create the post-installation regression model. Finally, different base point temperatures were used to calculate the cooling degree-days (CDDs) and heating

degree-days (HDDs) during the baseline and post-installation periods. It is not clear why different temperatures were used.

- **Recommendation**: Provide a rationale in the project documentation to explain the omission of data when calculating savings.
- **Recommendation**: Provide a rationale in the project documentation to explain all assumptions used in a savings analysis fully (e.g., different base point temperatures in the baseline and post-installation periods).

6.3 NM EnergySaver Program

Impact evaluation activities for the NM EnergySaver program included engineering desk reviews for a sample of projects. Based on these desk reviews, an engineering adjustment factor of 1.1228 was found for kWh savings, and 1.0426 was found for kW savings. EnergySaver worked with Zia Natural Gas in an effort to combine installation efforts. Conclusions and recommendations resulting from these reviews are discussed below:

- Several measures did not follow the New Mexico TRM. Specifically:
  - Duct Efficiency:
    - The *ex ante* savings calculated in the tracking data did not adjust the seasonal energy efficiency ratio (SEER) value based on the age of the existing equipment, which is the approach described in the TRM. Rather, the actual SEER of the installed equipment was used to calculate the savings. Default values of SEER 13 were used for equipment manufactured after 2006 and SEER 10 values for equipment manufactured before 2006.
    - The energy savings were not calculated consistently with the methodology outlined in the New Mexico TRM. The *ex post* savings for some projects matched the *ex ante* savings, while others did not. The reason for the inconsistency is not known.
  - Infiltration:
    - The energy savings were not calculated consistently with the methodology outlined in the New Mexico TRM. The *ex post* savings for some projects matched the *ex ante* savings, while others did not. The reason for the inconsistency is not known.
    - It appears an 80 percent heating efficiency was applied to some of the electric resistance heating systems, which are 100 percent efficient.

- Water Heater Jacket
  - The difference between the *ex ante* and *ex post* savings could not be identified. The *ex ante* savings for this measure in the tracking system are consistently 10 percent larger than the savings predicted by the New Mexico TRM methodology for all sizes of water heaters.
- Low Flow Shower Heads
  - The *ex ante* savings did not account for the different savings values for single-family and multi-family housing.
- LED bulbs
  - The majority of installations appeared to use a baseline wattage of 15.5 watts. This is less than the EISA Tier 1 standards that were in effect for 2019. The New Mexico TRM stipulates that a 43-watt lamp is the appropriate baseline for the 800 lumen bulbs installed through the program. The evaluation team updated the lighting baseline, which resulted in a large increase to the energy and demand savings for LED bulbs.
  - **Recommendation:** Review the tracking system algorithms and adjust them to reflect the TRM methodology. Identify measures with changing baselines such as LED bulbs and update them to the appropriate baseline as needed. Periodically review the tracking system results to ensure they are consistent with the TRM methodology and that all required values are collected and input.[10]

- The Infiltration measure in the New Mexico TRM does not handle baseline SEER efficiency the same way as Duct Efficiency and Ceiling Insulation measures. Specifically, it defines SEER as 13 for all equipment, not allowing for custom inputs or a tiered SEER level based on the age of the equipment.
  - **Recommendation:** Update the TRM to include the same methodology for SEER across all measures. Specifically consider using the 10 SEER baseline for equipment older than 2006 and 13 SEER for newer equipment. Allow for

[10] The evaluation team is updating the appropriate lighting baselines for 2020 through a separate effort, and will deliver results in spring 2020.

site specific values to be used if identified. Make sure the baseline stays up to date with updating codes for newer equipment.[11]

- Documentation for the sampled projects was inconsistent and, at times, incomplete. Sampled projects were missing verification photos, equipment details such as HVAC model numbers, and existing light bulb wattages. In addition, some of the on-site survey forms were included but not fully filled out or had conflicting information. For example, forms would provide the total number of LEDs, but would not designate where they are installed. Similarly, on-site forms that did list bulb location would occasionally have discrepancies between the total on the form and the total shown in EPE tracking data. Finally, of the 28 sampled sites, four did not have LED bulbs claimed; however, upon review of the project files, LED installation forms were found and showed that bulbs were installed at two of these locations.
    - **Recommendation:** Develop a checklist and spot check installer project files to ensure all documents are collected and uploaded.
    - **Recommendation:** Consider developing an electronic on-site data collection tool to eliminate the need for paperwork. This tool will ensure all inputs are filled out and the data will be accurately transferred into the tracking system.
- Implementation staff do not currently collect information on the size of the heating and cooling equipment for the Smart Thermostat measure. The algorithms in the TRM assume a three-ton system to calculate the *ex ante* savings. The program observed houses ranging in size from 400 to 3,360 sq ft with expected cooling requirements from 0.5 and 6 tons of cooling, with the average being 1,220 sq ft needing about 2 to 2.5 tons of cooling.
    - **Recommendation:** Implementation staff should collect HVAC capacity while on site and use it when calculating the savings using the methodology in the New Mexico TRM.

6.4 Commercial Load Management

The portfolio delivered average reductions in excess of the 380 kW of committed capacity in six of eight events, with the average portfolio load reduction being 489 kW, or 109 kW (29%) greater than the portfolio committed capacity. Moreover, each of the six individual sites delivered load reductions that were on average at or above their individual

[11] The evaluation team will track this recommendation and include it during the next TRM update, which is scheduled to begin summer 2020.

committed capacity. Other than one instance, the evaluation team was able to exactly replicate the load reductions calculated by the implementer, Trane. The result of the discrepancy is that the evaluation team's calculated average delivered load reduction for the portfolio is 3 kW higher than Trane's calculation (489 kW versus 486 kW).

EVERGREEN ECONOMICS

Evaluation of the 2019 El Paso Electric Energy Efficiency Programs

Final Report - Appendices

May 25, 2020

ECOMETRIC

RESEARCH & POLLING INC

Demand Side Analytics
DATA DRIVEN RESEARCH AND INSIGHTS

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Appendix A – Commercial Comprehensive Participant Survey Instrument

Hello, my name is (*YOUR NAME*) from Research & Polling, Inc. I am calling on behalf of El Paso Electric. 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 EL PASO ELECTRIC.

I'm calling because our records show that you recently completed an energy efficiency project where you installed lighting/[MEASURE_1] at your business located at [SITE_ADDRESS] and received a rebate/incentive through the EL PASO ELECTRIC [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) EL PASO ELECTRIC 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 EL PASO ELECTRIC improve its energy rebate/incentive programs.

SECTION A [MEASURE _1]

1. (A 1) Our records show in 2019 your business got a rebate/incentive through EL PASO ELECTRIC for installing lighting/[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 the lighting/[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 lighting/[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 lighting/[MEASURE_1] for which you received a rebate/incentive, is the lighting/[MEASURE_1] still installed in your facility?

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

4a. (A 3) Was the lighting/[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 lighting/[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 lighting/[MEASURE_1] removed/never installed? *(OPEN VERBATIM)*

_____

_____

_____

(SKIP TO SECTION A [MEASURE_2]

6. (A 4) Is the lighting/[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 lighting/[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 2019 your business got a rebate/incentive through EL PASO ELECTRIC for installing a (MEASURE_2]. Do you remember this?

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

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

_____*(SKIP TO Q. 3)*

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

2. VACANT

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

1. Yes *(SKIP TO Q. 6)*
2. No
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 lighting/[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 EL PASO ELECTRIC rebate/incentive 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/incentive 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/incentive before

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

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 lighting/[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 2) 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?

	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/Cooling 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/incentive (Only asked of Not Direct Install)	5	4	3	2	1	6
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/incentive 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)	*Extremely Important*										*Not at all Important*	*DK/ WS*
N/A												
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/incentive	10	09	08	07	06	05	04	03	02	01	00	
11	12											
26. (D1C) Technical assistance received from EL PASO ELECTRIC staff	10	09	08	07	06	05	04	03	02	01	00	
11	12											
27. (D1D) Endorsement or recommendation by your EL PASO ELECTRIC account manager or other EL PASO ELECTRIC staff	10	09	08	07	06	05	04	03	02	01	00.	
11	12											
28. (D1E) Information from EL PASO ELECTRIC marketing or informational materials	10	09	08	07	06	05	04	03	02	01	00	
11	12											
29. (D1F) Previous participation in an EL PASO ELECTRIC 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) VACANT

Now, I would like to read you some factors that are <u>not</u> related to the rebate/incentive 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*
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/incentive, marketing from EL PASO ELECTRIC, recommendation by a contractor and technical assistance from EL PASO ELECTRIC. 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 EL PASO ELECTRIC 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/incentive, marketing from EL PASO ELECTRIC, recommendation by a contractor and technical assistance from EL PASO ELECTRIC]

____ ____ _____ % = 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: INSURE 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 Q. 46)*
3. Would not have done the project at all *(SKIP TO Q. 46)*
4. Prefer not to answer *(SKIP TO Q. 46)*
5. Don't know *(SKIP 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 Q. 46)*
3. Between 2 years and 3 years *(SKIP TO Q. 46)*
4. Greater than 3 years *(SKIP TO Q. 46)*
5 Or would you not have installed the equipment at all *(SKIP TO Q. 46)*
6. Prefer not to answer *(SKIP TO Q. 46)*
7. Don't know *(SKIP 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

NOTE: Q.46 AND 47 ONLY ASKED IF MEASURE IS LIGHTING

46. (D12) 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 <u>quantity</u> of lights 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. 47 **----------SKIP TO INTRO TO QUESTION 48----------**

47. (D13) Can you briefly why you were likely to install the same number of lights without the [REBATE_PROGRAM] program? (*RECORD VERBATIM)*

_____

_____

_____

<u>SECTION E</u>

Now I have some questions about your satisfaction with various aspects of EL PASO ELECTRIC 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*.

48. (E1A) EL PASO ELECTRIC as an energy provider

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)*

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

_____

_____

_____

50. (E1B) The rebate/incentive program overall

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)*

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

_____

_____

_____

52. (E1C) The equipment installed through the program

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)*

53. 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. 54)**
2. **No (SKIP TO Q. 58)**

54. (E1D) The contractor who installed the equipment

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)*

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

_____

_____

_____

56. (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.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)*

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

_____

_____

EVERGREEN ECONOMICS

58. (E1F) The amount of time it took to receive your rebate/incentive for your 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)*

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

60. (E1G). The dollar amount of the rebate/incentive for the equipment

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)*

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

62. (E1H) Interactions with EL PASO ELECTRIC

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)*

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

_____

_____

_____

64. (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.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)

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

_____

_____

_____

66. (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.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)*

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

_____

_____

_____

68. (E1K) The project application process

1. Very Dissatisfied
2. Somewhat Dissatisfied
3. Neither Satisfied nor Dissatisfied
4. Somewhat Satisfied *(SKIP TO Q.70)*
5. Very Satisfied *(SKIP TO Q.70)*
6. Not applicable *(SKIP TO Q.70)*
7. Prefer not to answer *(SKIP TO Q.70)*
8. Don't know *(SKIP TO Q.70)*

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

_____

_____

_____

70. (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

SECTION: CHARACTERISTICS AND DEMOGRAPIHCS

71. (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)* _____

72. (Gen1a) Does your firm pay your EL PASO ELECTRIC 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

73. (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)*

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

01. 1939 or earlier
02. 1940 to 1949
03. 1950 to 1959
04. 1960 to 1969

05. 1970 to 1979
06. 1980 to 1989
07. 1990 to 1999
08. 2000 to 2009
09. 2010 and later
10. Prefer not to answer *(DO NOT READ)*
11. Don't know *(DO NOT READ)*

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

01. Less than 5
02. 5-9
03. 10-19
04. 20 - 49
05. 50 - 99
06. 100 - 249
07. 250 - 499
08. 500 - 999
09. 1,000 - 2,500
10. More than 2,500
11. Prefer not to answer
12. Don't know

76. (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.

NOTE TO INTERVIEWER, WAS RESPONDENT:

1. Male
2. Female

Unique ID #: _____ _____ _____

Project ID#: _____

Rebate Program Name: _____

Measure 1: _____

Measure 2: _____

Respondent's Phone Number: _____

Interviewer's Name: _____

Interviewer's Code: _____

Appendix B – SCORE Plus Participant Interview Guide

Background Information to Retrieve during Interview Prep

Contact Person		**Project Information**	
Name		Utility	
Title / Role		Program	
Company		Implementer	
Contact Info		Calendar Year	
Building/Site Information			
Address			
Other			
Rebated Measures			
	Type / description	Quantity	Savings or rebate $
Measure 1			
Measure 2			
Measure 3			
Measure 4+			

Introduction

Talking points for recruitment

- Evergreen Economics is conducting an evaluation of utility energy efficiency programs for the New Mexico Public Service Commission and El Paso Electric
- We have identified selected efficiency projects that were supported by the efficiency programs in 2019 for brief telephone interviews; one of those was an upgrade in

[insert general description of end-uses, not specific measures] at the building at [address].

- You were listed as the project contact. Are you the best person to discuss the efficiency upgrade, the decision-making behind it, and your organization's experiences with the rebate program? Or is there someone else involved in the project who would better be able to answer questions?
- We would need about 15-20 minutes for the interview.
- Your responses will be anonymous but will be very helpful in helping El Paso Electric ensure their energy efficiency programs best serve their customers.
- When would be a good time to talk?

Talking points for starting the interview

- Identify self.
- Thank you for taking the time to talk about the efficiency upgrades at [building name/address] that were conducted with support from El Paso Electric's SCORE Plus program.
- This should take about 15-20 minutes.
- Your responses will be anonymous, so please feel free to speak candidly.
- What we hear from you and other program participants will be helpful to El Paso Electric to ensure their programs best serve their customers.
- Do you have any questions before we begin?
- Would you feel comfortable if I record this call for note taking purposes? We will not share the recording with anyone outside our company and will not attribute anything you say back to you.

Context and Measures

Let's begin with a couple of background questions....

A1. Please tell me a little bit about the building or complex.

Probe on:

- size
- location
- building age or when completed
- who pays for the energy use in the building?

A2. Please tell me a bit about your role and connection with the building.

Probe enough to understand:

- temporary or long-term role
- level or sphere of decision-making authority

A3. Next, I just want to confirm the efficiency upgrades you installed with utility support. I will read the main items on my list. Afterwards, please tell me if anything on my list didn't get installed, or if I missed anything important. According to my records, you installed [summarize the primary measures from program records].

Probe on:

- anything missing
- anything on my list that didn't get installed

A4. How have those efficiency upgrades or equipment worked out for you?

Probe specifically to understand:

- did everything get installed to your satisfaction?
- is everything still functioning as expected?
- has anything been replaced?

A5. Was a contractor involved in installing any rebated equipment? [INTERVIEWER NOTE: USED FOR SKIP INSTRUCTIONS IN SECTION D]

A6. [FOR NEW CONSTRUCTION] Did you receive a rebate based on the overall efficiency of the design of the building or for including specific equipment?

Overall Entree and Role of Utility Program

B1. Now I'd be interested to understand how and when the El Paso Electric rebates first entered the picture. When and where did you first hear about the rebates program?

Probe to understand:

- information source
- timing – before or during consideration of the project

B2. Can you describe the role that the El Paso Electric program played in this project?

B3a. [if B2 response indicates that program was influential] Please elaborate on how the program or rebates changed your plans.

If needed, probe by group of measures to understand:

- what would you have done differently?
- how/why did the [utility name] program influence your choices?
- (for new construction) how much better than code did you end up and how much better than code would the building have been without the El Paso Electric program input and incentives?

B3b. [if B2 response indicates program was not influential] So, just to confirm, the El Paso Electric program didn't really change what you did but made it less costly with the rebate. Is that correct?

B4. [FOR RETROFITS] How much longer would the equipment that was in place have lasted before it would have needed replacement?

Quantitative Program Influence Questions

Next, I'd like to try to quantify some of what we've been talking about, as best as possible. For these next questions, please step back and think about the efficiency improvements made to the building [FOR NEW CONSTRUCTION, ADD: compared to code requirements] [FOR RETROFITS, ADD: from the upgrades you did as part of this project].

[IF NEEDED: Let's talk specifically about [refer to most impactful measure or group of measures].]

C1. For this next question, I will read a number of factors that might have played a role in the upgrade of the building's efficiency [FOR RETROFITS, ADD: from what it was] [FOR

NEW CONSTRUCTION, ADD: compared to code]. For each one, please indicate how important that factor was in influencing the energy efficiency level you ended up with on a scale from 0 to 10. Zero means the factor was not at all important, and 10 means it was extremely important. If something just isn't applicable, let me know that too.

[READ AS NEEDED: How important was ... [insert items below] ... in influencing the ultimate efficiency level?]

a) [SKIP IF NO CONTRACTOR INVOLVED] the contractor who performed the work and any distributor or vendor involved in supplying the equipment

b) the rebate available from El Paso Electric

c) any technical assistance, recommendations, or information from El Paso Electric or its program representatives, including CLEAResult

d) your (or your colleagues') previous participation in a El Paso Electric program

e) [SKIP FOR NEW CONSTRUCTION] the age or condition of the old equipment

f) [SKIP FOR NEW CONSTRUCTION] routine maintenance practices

g) corporate policy, guidelines or pre-existing energy efficiency goals

h) the financial benefits of the efficiency upgrade through reduced operating costs

C2. Some of the factors we just talked about are related to the El Paso Electric program, while others are completely independent of the utility. I'd like you to assign 100 points across both the utility program elements and the non-utility factors based on how much they contributed to the upgrade in efficiency [FOR NEW CONSTRUCTION, ADD: compared to code].

[PARAPRHASE AS NEEDED BASED ON PRIOR RESPONSES in C1, REFERRING TO ITEMS THAT SCORED 7-10 OR THE HIGHER RATED ONES:] Again, the utility program elements were the rebate and any technical assistance, recommendations, and information from the utility or its program partners, and your prior participation in the utility rebate programs. The non-utility factors are everything else, like the financial benefits of the upgrade on its own, corporate policy, maintenance and operational needs, and so forth.

a) How much of the efficiency upgrades was due to the program elements together?

b) How much was due to non-program factors together?

[REVISIT / CLARIFY IF THE TWO NUMBERS DO NOT ADD TO 100.]

C3. Now, please consider what you would have done if the El Paso Electric program hadn't existed at all. Using that 0-10 scale, how likely is it that you would have [FOR RETROFITS: installed the same equipment with the same efficiency level] [FOR NEW CONSTRUCTION: reached the same building energy efficiency level (or higher)]? Zero means not at all likely, and 10 means extremely likely.

C3a. Thinking just about the energy efficient part of your project for which you got a rebate from El Paso Electric, how likely would you have been to do that part of the project the same, with the exact same efficiency level, if the program support and rebate had not been available? Please tell me on the same 0-10 scale where zero means not at all likely, and 10 means extremely likely.

C4. [FOR RETROFITS] If you had done the same things or something similar, when would you have made those upgrades?

Probe to categorize:

- within one year
- between 12 months and less than 2 years
- between 2 and 3 years
- greater than 3 years
- not at all

C5. [AS NEEDED IF WE ARE GETTING A MIXED MESSAGE ON PROGRAM INFLUENCE OVERALL BASED ON RESPONSES TO SECTIONS B2, C1, and C3.]

Please help me understand just how and how much the utility efforts influenced the efficiency upgrade for this building. I feel like I am hearing that [DESCRIBE THE MIXED MESSAGE, SUCH AS: the utility had a high influence, but you would have done the same thing anyway]. I may have misunderstood something. Can you elaborate?

Program Satisfaction

Finally, I have some questions about your satisfaction with El Paso Electric and its rebate program.

D1. For each of the following, please tell me how satisfied you are on a scale of 1 to 5, where 1 is "very dissatisfied", and 5 is "very satisfied". If you are dissatisfied with anything specific, please tell me a bit more about that too.

[READ AS NEEDED: How satisfied were you with ... [insert items below]?]

[INTERVIEWER NOTE: OKAY TO ACCEPT "NOT APPLICABLE," "PREFER NOT TO ANSWER," AND "DON'T KNOW." WE JUST DON'T WANT TO OFFER THOSE AS STANDARD OPTIONS.]

a) El Paso Electric as an energy provider

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

b) the rebate program overall

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

c) the equipment installed through the program [INTERVIEWER NOTE: THIS MAY NOT APPLY TO SOME NEW CONSTRUCTION PARTICIPANTS. RECORD "NOT APPLICABLE" AS NEEDED.]

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

d) [IF CONTRACTOR INVOLVED] the contractor who installed the equipment

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

e) [IF CONTRACTOR INVOLVED] the overall quality of the equipment installation

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

f) the amount of time it took to receive your rebate

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

g) the dollar amount of the rebate

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

h) interactions with El Paso Electric

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

i) the overall value of the equipment your company received for the price you paid [INTERVIEWER NOTE: MAY NOT APPLY FOR NEW CONSTRUCTION IF THE REBATE WAS BASED ON BUILDING DESIGN RATHER THAN EQUIPMENT.]

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

j) the amount of time and effort required to participate in the program

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

k) the project application process

[IF RATING = 1 OR 2] Can you tell me why you gave that rating?

D2. Do you have any recommendations for El Paso Electric concerning their energy efficiency program?

Closing

E1. Those are all the questions I have. Is there anything else you would like to comment on?

[Thank the interviewee.]

Appendix C – Contractor Interview Guide

Introduction

Talking points for recruitment

- Evergreen Economics is conducting an evaluation of [UTILITY's] [PROGRAM] for the New Mexico Public Regulation Commission and the state's utilities.
- We have identified selected contractors that installed equipment that received rebates from the efficiency programs in 2019 for brief telephone interviews.
- We would need about 20 minutes for the interview.
- Your responses will be anonymous but will be very helpful in helping the state's utilities ensure their energy efficiency programs best serve their customers.
- When would be a good time to talk?

Talking points for starting the interview

- Identify self.
- This should take about 20 minutes.
- Your responses will be anonymous, so please feel free to speak candidly.
- Do you have any questions before we begin?
- Would you feel comfortable if I record this call for note taking purposes? We will not share the recording with anyone outside our company and will not attribute anything you say back to you.

Interviewee Background

Let's begin with a couple of background questions….

A1. To start, please tell me a bit about your company.

- Probe to understand:
    - Services offered
    - Types of customers (esp. sector – residential, commercial, or both) – if both, ask: What percentage of your work is done in the residential sector? And in the commercial sector?
    - Regions served
    - Interviewee role

Program Awareness and Engagement

B1. Do you recall how you first learned about and got involved with the [residential/commercial] energy efficiency programs through [UTILITY]?

- Listen (and probe as needed) for:
  - Any reservations about participating
  - Any barriers to participating
  - Whether or not they work with any other New Mexico [UTILITY] rebate programs

B2. Can you describe in what ways you are involved with the New Mexico [UTILITY] energy efficiency program as a contractor?

Probe as needed:

- In what ways do you interact with New Mexico [UTILITY] or their implementers about this program?
- What information or services do you receive from New Mexico [UTILITY] (beyond the ability to offer rebates/incentives to your customers)?

B3. In what ways is the [UTILITY] program helpful to you in your business?

- Probe, as needed:
  - Rebate/incentive
    - Increases customer satisfaction with us
    - Increases business
    - Helps us up-sale to higher efficiency levels
  - Ability to mention the connection with the [UTILITY] program
  - [UTILITY] messaging to customers on benefits of [MEASURE(S)]

B4. What share of your [residential/commercial] projects within [UTILITY] territory would you estimate currently end up qualifying for and receiving a [UTILITY] rebate/incentive?

- What could [UTILITY] do to involve you more in the program?

B5. Does [UTILITY] make it clear which of your products or services are eligible for [UTILITY] rebates/incentives?

- Probe as needed:
  - Is there anything [UTILITY] should do to more clearly communicate that?

B6. Have the programs influenced what equipment you suggest to a customer?

B7. Do you have any suggestions for [UTILITY] contractor services and support – either overall or for the [PROGRAM] specifically?

Program Processes

C1. In what ways are you involved with the rebate/incentive portion of the program and the paperwork and process required to participate?

- Probe to understand:
    - Whether contractor completes the rebate/incentive application
    - Time required for paperwork and whether that is a burden
    - Whether the rebate/incentive goes directly to the customer or contractor (with a markdown on the charge to customer)
    - Recommended improvements

C2. When and how do you bring up either [UTILITY] rebates/incentives or the equipment they rebate/incentivize when talking with customers?

- Listen for (and probe as needed):
    - What share of customers are already aware of rebates/incentives before the contractor brings it up
    - What it is the most effective sales tool or message to get customers to upgrade to high efficiency
    - What role the [UTILITY] rebates/incentives play in motivating upgrades
    - What particular equipment is easier or harder to get customers to upgrade to high efficiency and why

C3. Do you have any comments about the program offerings? Is there anything missing? Anything not needed? Or anything that could be better?

Market Response

D1. Overall, to what degree do you see the program increasing the interest and demand for energy efficient equipment?

Probe to understand:

- Why is that?
- Is the program having a large or small effect on the market?

D2. Are there markets that you feel [UTILITY] [residential/commercial] energy efficiency programs are reaching well? Not well?

- Probe to understand:
    - Suggested approaches that might expand the reach of the program into markets that may be underserved by the program.

D3. Overall, what issue(s), if any, may affect future program participation by customers? What about future program participation by contractors? [INTERVIEWER NOTE: Example issues are changes to building codes and standards being promoted and program incentive levels].

Program Satisfaction

E1. Finally, I'd like to ask about your and your customers' satisfaction with the [UTILITY] [PROGRAM]. Please rate your overall satisfaction with the program on a 1 to 5 scale where 1 is not at all satisfied, 2 is somewhat dissatisfied, 3 is neither satisfied nor dissatisfied, 4 is somewhat satisfied and 5 is very satisfied?

- What is your satisfaction?
- How do you think your customers would rate the program?
    -
    - [IF RATING < 5] What could [UTILITY] do to increase your satisfaction with the program?
    -

      Probe if needed:

        - What is working best?
        - What is most challenging or needs improvement?

E2. Have you had any feedback from your customers about their experiences with the [PROGRAM] that you think [UTILITY] should know?

E3. Aside from anything we've already discussed, was there ever an occasion when the program didn't meet your expectations? Please explain.

Closing

F1. Is there anything else we didn't cover that you'd like to mention or discuss about your experiences with the [UTILITY] [PROGRAM]?

[THANK AND END]

Appendix D – Commercial Load Management Detailed Methods and Findings

1.1 Background

El Paso Electric (EPE) operates a Commercial Load Management demand response (DR) program for six middle schools and high schools in its service territory. The program compensates participants for reducing electric load upon dispatch during periods of high system load. For summer 2019, the portfolio committed capacity was 380 kW. Individual participant committed capacities ranged from 20 kW to 100 kW.

During the summer 2019 demand response season, EPE and the program implementer (Trane) called eight demand response events, all of which lasted two hours. As the statewide evaluator for New Mexico, Evergreen Economics was asked to verify the savings calculated by Trane for purposes of settlement with the participating customers. This work will also be the basis for verified program savings for the 2019 El Paso Electric evaluation report due mid-2020.

1.2 Summary of Findings

Our findings for demand savings by event and in total are summarized in Table 1. The portfolio delivered average reductions in excess of the 380 kW of committed capacity in six of eight events, with the average portfolio load reduction being 489 kW, or 109 kW (29%) greater than the portfolio committed capacity. Moreover, each of the six individual sites delivered load reductions that were on average at or above their individual committed capacity.

Table 1: 2019 Performance Summary by Event

Date	Start Time	End Time	Portfolio Baseline (kW)	Portfolio Load Reduction (kW)	Portfolio Committed Capacity (kW)	Reduction Relative to Committed Capacity (kW)	Max Temp in Interval[1] (°F)
Aug 2	2:30 PM	4:30 PM	2,191	517	380	137	102.9
Aug 7	3:30 PM	5:30 PM	2,430	718	380	338	99.0
Sep 18	3:30 PM	5:30 PM	2,096	376	380	-4	91.9
Sep 23	3:00 PM	5:00 PM	2,166	445	380	65	89.1
Sep 25	3:30 PM	5:30 PM	1,900	292	380	-88	87.1
Sep 26	3:00 PM	5:00 PM	2,110	390	380	10	89.1
Sep 27	3:00 PM	5:00 PM	2,016	433	380	53	87.1
Sep 30	2:30 PM	4:30 PM	1,918	737	380	357	84.9
	Average		**2,103**	**489**	**380**	**109**	**91.4**

1.3 Validation of Settlement Claims

1.3.1 Methodology

In 2018, Evergreen worked closely with EPE and Trane to reach agreement on the mechanics of the DR performance calculation mechanism. This calculation centers on the baseline or estimate of what load would have been in the participating facilities on event days if DR had not been called. The settlement calculations called for a "high 8-of-10" baseline with a capped, symmetric day-of adjustment. Only non-event, non-holiday weekdays were eligible to be baseline days. For each two-hour Event Window, the method was as follows:

- Select the last ten non-event, non-holiday weekdays
- Select the eight days (out of ten) with the highest average load during the Event Window, using the 15-minute interval load data
- For each 15-minute interval, calculate the average load of the eight selected baseline days. This is known as the "Raw Baseline."

After the Raw Baseline was calculated, a day-of "Adjustment Factor" was calculated and applied to the Raw Baseline to create the "Adjusted Baseline," as follows:

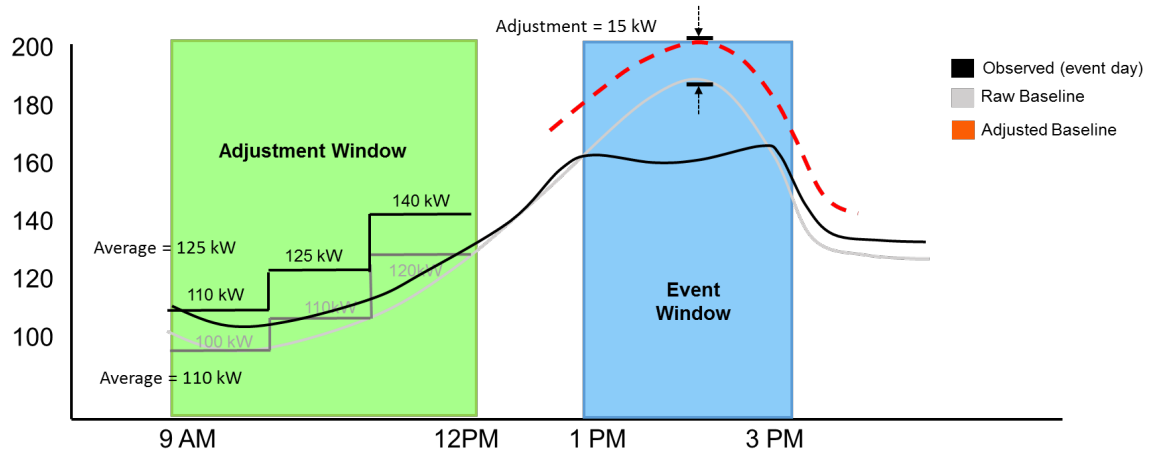
- Designate the three hours prior to the event, excluding the hour immediately prior to the event, as the "Adjustment Window"

[1] Hourly temperature data from El Paso International Airport was used.

- Calculate the average observed load on the event day during the Adjustment Window (single value)
- Calculate the average load of the three baseline days during the Adjustment Window (single value)
- The Adjustment Factor (single value) is defined as the difference of the average observed load and the average load of baseline days, capped at +/- 20% of the corresponding baseline average load
- For each interval in the event window, add/subtract the Adjustment Factor to/from the Raw Baseline to calculate the Adjusted Baseline

A sample calculation is illustrated in Figure 1. In this example, the Adjusted Baseline is 15 kW higher than the Raw Baseline during the event window, because the actual average observed load during the Adjustment Window was 15 kW higher on the event day (125 kW) compared to the baseline days (110 kW).

Figure 1: Illustration of Adjusted Baseline Calculation



1.3.2 Findings

The Evergreen Study Team found one discrepancy between the Trane-calculated impact analysis and our own calculations among the combinations of 48 sites and events (six sites * eight events = 48 evaluations). For the August 7 event for Gadsden High School, when setting the Raw Baseline, the 8th and 9th highest baseline days had the exact same average kW for the event window, which was from 3:30 PM to 5:30 PM. The Trane calculation incorporated both of these days into its calculation of the Raw Baseline (i.e., the Trane calculation used nine days to calculate the Raw Baseline as opposed to eight). This option was not discussed during the 2018 methodology review or detailed in the document describing the high 8-of-10 method, but the Evergreen Study Team believes that only one of these two days should count in the Raw Baseline calculation. Our calculation, which uses recency in the case of a tie, incorporated only one of the two "low-demand" rather

than both of the "low-demand" days, yielding a slightly higher Raw Baseline and a slightly higher impact. Other than the instance described above, the Evergreen Study Team was able to exactly replicate the load reductions calculated by Trane. The result of the discrepancy is that the Study Team's calculated average delivered load reduction for the portfolio is 3 kW higher than Trane's calculation (489 kW vs 486 kW).

1.3.3 Energy Savings

Demand response events may also yield energy savings if the demand reductions during the event window are not more than offset by actions like precooling that defer demand usage to intervals outside of the Event Window. Our approach to estimating the net energy savings on DR event days is similar to our approach for estimating demand savings. Recall that to measure demand savings, we measured the difference between a site's actual load and its baseline load for the two hours in the Event Window only. To calculate energy savings, by contrast, we measure the difference between a site's actual load and its baseline load for the daytime hours of event days from 8:00 AM to 8:00 PM.[2] By looking at the hours outside the Event Window, we account for increases in energy consumption that may occur before or after the DR event as a result of pre-cooling or other load-shifting activities.

Table 2 shows the portfolio net energy savings for each event and in total. Total energy savings across the eight events was 6,392 kWh.

Table 2: Energy Savings by Event Day

Date	Energy Savings (kWh)
Aug 2	822
Aug 7	950
Sep 18	682
Sep 23	442
Sep 25	231
Sep 26	349
Sep 27	319
Sep 30	2,597
Total	**6,392**

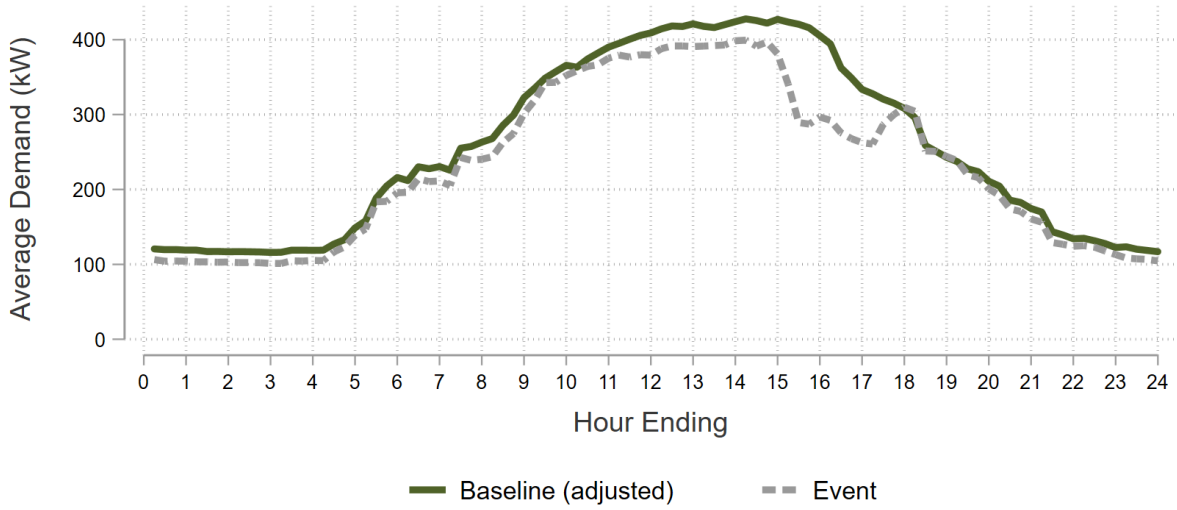
[2] The cutoff hours of 8:00 AM and 8:00 PM were chosen based on a comparison of daily load shapes across different days and specifically the observation that load profiles tend to track each other closely until 8:00 AM and converge again after 8:00 PM. We measure energy savings from 8:00 AM to 8:00 PM only because we would not expect the baseline and event day loads to differ outside of these time periods as a result of weather conditions or other factors.

1.4 Detailed Results

1.4.1 Baseline and Event Load Visualization

Figure 2 shows the average event-day and baseline-day site loads for the three events that start at 3:00 PM. There is a clear reduction in load starting at 3:00 PM, as expected, with a smaller increase in load occurring after 5:00 PM when the event ended. There is a similar trend for events starting at 2:30 PM and 3:30 PM.

Figure 2: Average Baseline and Event Loads for Events Beginning 3:00 PM



1.4.2 Duration of Load Reductions

While settlement is based on the average load reduction across each two-hour event window, the minimum or first-interval load reduction may also be of interest, depending on the DR use case. Figure 3 shows how the magnitude of kW savings varies depending on which metric is used – average, minimum, and first-interval value. The average reduction, shown in green, corresponds to the values presented in Table 1 in the Summary of Findings.

Figure 3: Average, Minimum, and First-Interval Load Reduction by Event

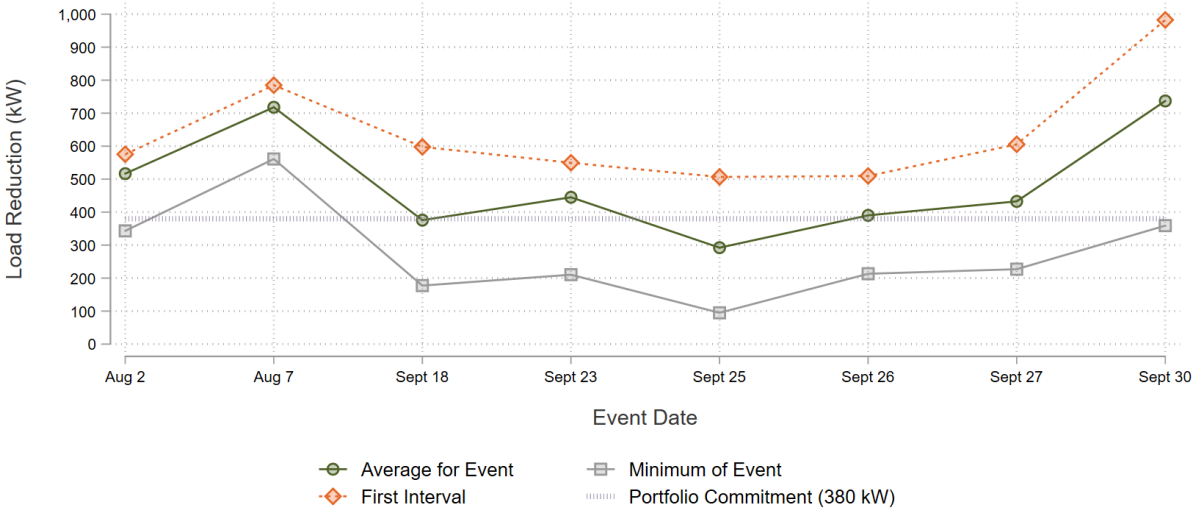


Figure 4 and Figure 5 provide more detail as to how load reductions changed between the beginning and end of each event. Figure 4 shows how load reductions vary by interval across different sites. To normalize across sites with different levels of demand, the y axis is the load reduction as a percent of that site's baseline demand for the relevant interval. This helps to control for different-sized sites and also changes in loads over time.[3] On average, the delivered load reductions decrease over time, and the largest declines over the interval are seen among sites with the highest load reductions as a fraction of the baseline.

[3] For instance, **Error! Reference source not found.** shows that sites' baseline energy use tends to peak at 3:00 PM and decline thereafter.

Figure 4: Load Reduction by 15-Minute Interval and School (Average of all Events)

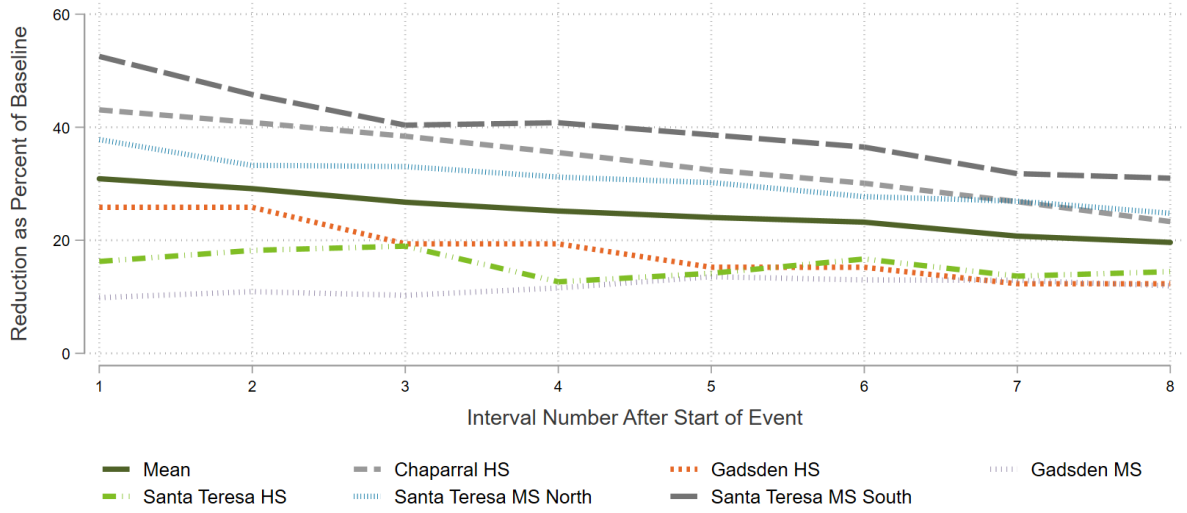
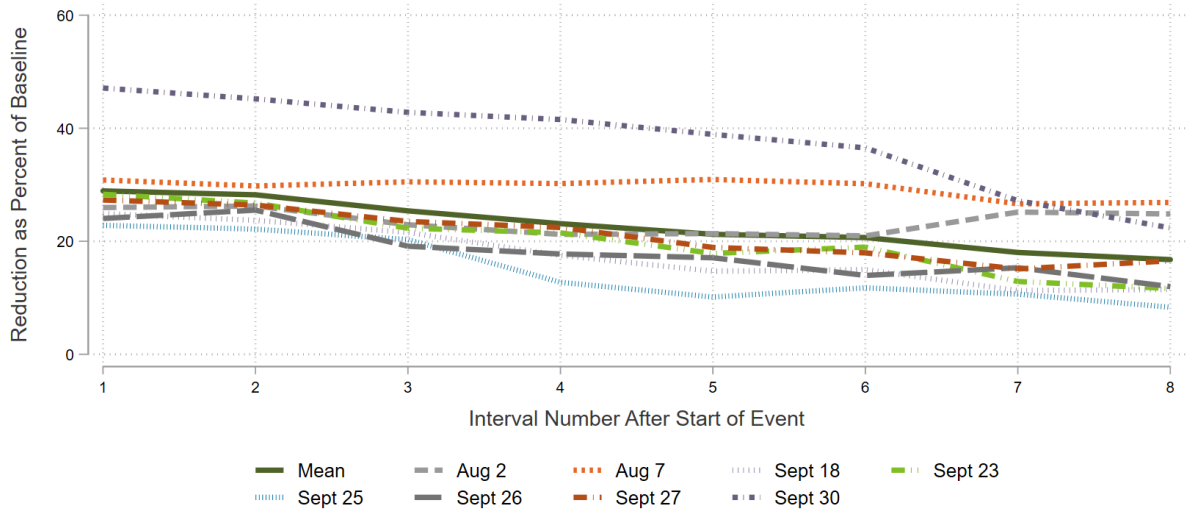


Figure 5 shows how load reductions vary by interval across different dates. Consistent with Table 1, the highest delivered load reductions happened on September 30 and August 7.

Figure 5: Load Reduction by 15-Minute Interval and Event (Average of all Sites)

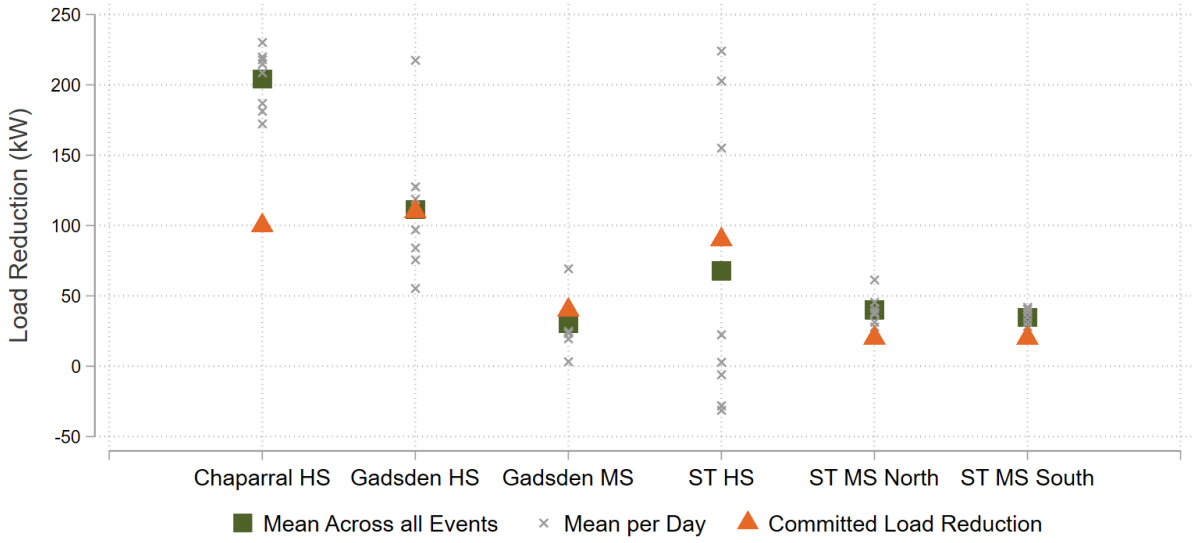


1.4.3 Load Reduction by School

Figure 6 shows the variance by site of the average event load reductions across the eight summer 2019 DR events. The gray marks represent average load reduction for each of the eight events, and the green square represents the average load reduction across all eight events. The orange triangle represents the committed reduction for each site.

The graph shows that Chaparral High School consistently outperformed its committed reduction, and that other schools performed in line with their committed reductions on average. The variability of load reductions was generally low, except for Santa Teresa High School, which saw three events exceed its committed reduction and five events not exceed its committed reduction, both by relatively large amounts compared with other sites.

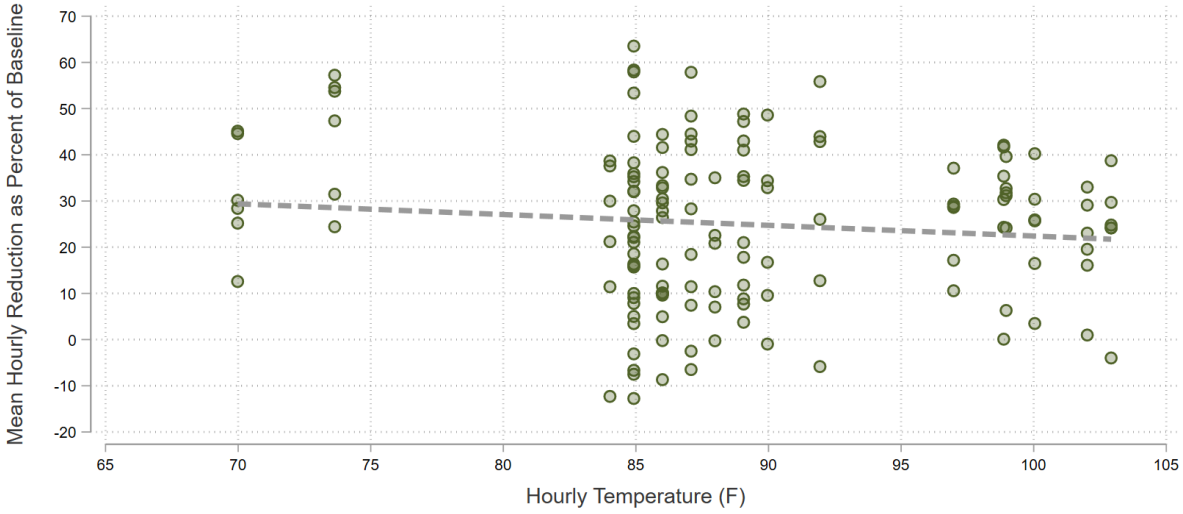
Figure 6: Average Event Reduction by Day



1.4.4 Load Reduction as Function of Temperature

To test whether load reductions were correlated with outside temperature, in Figure 7 we plot the average hourly load reduction as a percent of the site's baseline against the average hourly temperature at El Paso International Airport. While we found that site loads tend to increase with outdoor temperature, we did not find any clear relationship between load reduction and outdoor temperature.

Figure 7: Average Hourly Load Reduction vs Temperature



Appendix E – Commercial Comprehensive and SCORE Plus Desk Review Detailed Results

Project ID	19CLG2	19CLG6	19CLG8
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Other	Other	Other
Project Description	HVAC High efficiency AC	HVAC High efficiency AC	HVAC High efficiency AC
Building Type	Lodging - Hotel	Retail - Small	Office - Small
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,498	3,923	770
Gross Reported kW	1.02	1.32	0.23
Gross Verified kWh	1,498	3,923	770
Gross Verified kW	1.02	1.32	0.23
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00	1.00	1.00
Calculation Assessment			
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	19KE2	211165	EPE-19CLG10
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Other	Other	Other
Project Description	Energy Efficient Fryer	HVAC High efficiency AC	Installation of new high-efficiency DX AC units
Building Type	Restaurant - Sit-Down	Retail - Small	Health/Medical - Hospital
Other Building Type			New Construction
Site Visit Being Conducted	No	No	No
Gross Reported kWh	2,536	2,647	10,416
Gross Reported kW	0.53	1.07	2.00
Gross Verified kWh	2,498	1,487	10,416
Gross Verified kW	0.53	1.07	2.00
kWh Realization Rate	0.99	0.56	1.00
kW Realization Rate	0.98	1.00	1.00
Calculation Assessment			Followed New Mexico TRM - 2018, Commercial HVAC for New Construction
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1	Minor deviation noticed due to rounding off. TX TRM v7 used for ex-post analysis.	The evaluation team adjusted the EFLHc to align with a small retail building type in the Las Cruces climate zone.	Due to rounding

Project ID	EPE-19CLG3	EPE-19CLG4	EPE-19CUST1
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Other	Other	Other
Project Description	Installation of new high-efficiency DX AC units and Heat Pump	Installation of new high-efficiency DX AC units	Installation of VFD on booster pump
Building Type	Restaurant - Sit-Down	Health/Medical - Hospital	Other:
Other Building Type	New Construction	New Construction	Lab
Site Visit Being Conducted	No	No	No
Gross Reported kWh	6,354	5,849	5,882
Gross Reported kW	2.92	2.27	0.56
Gross Verified kWh	6,354	5,849	5,881
Gross Verified kW	2.92	2.27	0.56
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00	1.00	1.00
Calculation Assessment	Followed New Mexico TRM - 2018, Commercial HVAC for New Construction	Followed New Mexico TRM - 2018, Commercial HVAC for New Construction	Referenced Hawaii Energy TRM
TRM/Workpaper Assessment			New Mexico TRM currently doesn't have a deemed measure for VFDs on pumps.
Reasons for RR(s) <> 1	Due to rounding	Due to rounding	

Project ID	19LGT100	19LGT103	19LGT10
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting
Project Description	installation of LED indoor and outdoor	Interior and exterior LED installation	Exterior Billboard
Building Type	Assembly	Restaurant - Sit-Down	Other:
Other Building Type			Less than Dusk to Dawn 1
Site Visit Being Conducted	No	No	No
Gross Reported kWh	45,059	82,890	6,067
Gross Reported kW	0.71	13.82	0.00
Gross Verified kWh	44,891	82,905	6,067
Gross Verified kW	0.71	13.82	0.00
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00	1.00	
Calculation Assessment		Savings were calculated using customer reported operating hours (,1566) for external lights.	Savings were calculated using customer reported operation hours (2,192).
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1	Seems to be rounding error.		

Project ID	19LGT111	19LGT112	19LGT113
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting
Project Description	Interior LED installation	Interior LED installation	Interior LED installation
Building Type	Restaurant - Sit-Down	Office - Small	Other:
Other Building Type			Exterior
Site Visit Being Conducted	No	No	No
Gross Reported kWh	40,818	2,864	16,667
Gross Reported kW	7.30	0.60	0.00
Gross Verified kWh	40,794	2,866	16,667
Gross Verified kW	7.31	0.58	0.00
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00	0.97	
Calculation Assessment		Savings were calculated using deemed input values for a small office.	
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1	The realization rates are so close to 100% that is must be a rounding issue.	Ex ante peak demand is rounded to two decimal places while ex post is not rounded at all.	

Project ID	19LGT118	19LGT1	19LGT24
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting
Project Description	Interior and exterior LED installation	Interior lighting retrofit LED	Exterior Billboard
Building Type	Assembly	Grocery	Other:
Other Building Type			Less than Dusk to Dawn 1
Site Visit Being Conducted	No	No	No
Gross Reported kWh	22,234	17,397	3,792
Gross Reported kW	2.77	2.96	0.00
Gross Verified kWh	22,236	17,388	3,792
Gross Verified kW	2.75	2.96	0.00
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	0.99	1.00	
Calculation Assessment			Savings were calculated using customer reported operating hours.
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	19LGT44	19LGT49	19LGT62
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting
Project Description	Exterior Billboard	Exterior Billboard	Installation of interior LED fixtures
Building Type	Other:	Other:	Office - Large
Other Building Type	Less than Dusk to Dawn 1	Less than Dusk to Dawn 1	
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,517	4,551	20,839
Gross Reported kW	0.00	0.00	6.12
Gross Verified kWh	1,517	4,551	20,774
Gross Verified kW	0.00	0.00	6.06
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate			0.99
Calculation Assessment	Savings were calculated using customer reported operating hours.	Savings were calculated using customer reported operating hours.	
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	19LGT66	19LGT75	19LGT80
Utility	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting
Project Description	Exterior lighting	Installation of parking lot lighting	New construction lighting
Building Type	Other:	Other:	Health/Medical - Hospital
Other Building Type	Exterior	Exterior	
Site Visit Being Conducted	No	No	No
Gross Reported kWh	25,177	97,271	25,557
Gross Reported kW	0.00	0.00	3.46
Gross Verified kWh	25,177	97,271	25,574
Gross Verified kW	0.00	0.00	3.46
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate			1.00
Calculation Assessment			
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	19LGT92	19LGT95
Utility	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting
Project Description	Installation of interior LED fixtures	Installation of interior LED fixtures
Building Type	Retail - Small	Retail - Single-Story Large
Other Building Type		
Site Visit Being Conducted	No	No
Gross Reported kWh	102,932	46,121
Gross Reported kW	2.89	7.32
Gross Verified kWh	102,400	46,121
Gross Verified kW	2.91	7.32
kWh Realization Rate	0.99	1.00
kW Realization Rate	1.01	1.00
Calculation Assessment		
TRM/Workpaper Assessment		
Reasons for RR(s) <> 1		

Project ID	PRJ-1448692
Utility	EPE
Program	SCORE PLUS
Measure Type	Custom Efficiency - NM
Project Description	Conveyor System Retrofit
Building Type	Other:
Other Building Type	Industrial
Site Visit Being Conducted	No
Gross Reported kWh	102,179
Gross Reported kW	14.23
Gross Verified kWh	103,153
Gross Verified kW	14.37
kWh Realization Rate	1.01
kW Realization Rate	1.01
Calculation Assessment	Custom analysis; Logged data for 2 weeks of pre and post motors
TRM/Workpaper Assessment	
Reasons for RR(s) <> 1	The evaluator noticed the post Qline motor had several spikes i.e. power draw exceeding more than 4-5 times the rated kW of the motor. The evaluator marked these events (381 minutes out of 28,000 mins) as singularities and capped them at 7 kW (or 10 Amp current draw) of power draw. The evaluator also checked for average power draw during 3-6 PM on weekdays to estimate peak demand savings (assuming similar operation will be replicated during the hottest days of the year).

Project ID	PRJ-2018496	PRJ-2018502	PRJ-2118086
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Other	Lighting
Project Description	Interior LED Lighting Upgrade	HVAC - DX Air Conditioner	Interior Lighting
Building Type	Office - Small	Office - Small	Other:
Other Building Type		New Construction	Education - Primary School / Office - Small
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,024	336	37,299
Gross Reported kW	0.31	0.22	10.31
Gross Verified kWh	983	336	37,008
Gross Verified kW	0.30	0.22	10.21
kWh Realization Rate	0.96	1.00	0.99
kW Realization Rate	0.96	0.99	0.99
Calculation Assessment	Straight forward, prescriptive lighting calculation	Followed New Mexico TRM - 2018, Commercial HVAC for New Construction	Straight forward, prescriptive lighting calculation
TRM/Workpaper Assessment	Followed the New Mexico TRM - 2018		Followed the New Mexico TRM - 2018
Reasons for RR(s) <> 1		Due to rounding	

Project ID	PRJ-2134480
Utility	EPE
Program	SCORE PLUS
Measure Type	Other
Project Description	VRF (Custom), Lighting
Building Type	Education - Primary School
Other Building Type	
Site Visit Being Conducted	No
Gross Reported kWh	41,596
Gross Reported kW	30.64
Gross Verified kWh	92,587
Gross Verified kW	13.24
kWh Realization Rate	2.23
kW Realization Rate	0.43
Calculation Assessment	The implementer followed AHSRAE 90.1-2010 guidance regarding VRF baselines to calculate savings for this project along with deemed savings for High Eff AC and Heat Pumps from the NM TRM (2018).
TRM/Workpaper Assessment	
Reasons for RR(s) <> 1	The implementer did not calculate total savings for all the units installed at the site. The evaluator cross checked cooling efficiency baselines against ASHRAE 90.1-2007 (the NM TRM 2018 follows ASHARE 90.1-2007). The evaluator also corrected heating savings claimed by the implementer by applying correct COP values from ASHRAE and AHRI documents. Acknowledging the multiple quantities led to a significant increase in savings.

Project ID	PRJ-2134493
Utility	EPE
Program	SCORE PLUS
Measure Type	Custom
Project Description	DX Air Conditioner, Chiller - Air-Cooled
Building Type	Education - Secondary School
Other Building Type	
Site Visit Being Conducted	No
Gross Reported kWh	9,730
Gross Reported kW	3.52
Gross Verified kWh	9,729
Gross Verified kW	3.54
kWh Realization Rate	1.00
kW Realization Rate	1.01
Calculation Assessment	Followed New Mexico TRM methodology
TRM/Workpaper Assessment	Utilized calculations and methodology outlined in the New Mexico TRM.
Reasons for RR(s) <> 1	

Project ID	PRJ-2134515
Utility	EPE
Program	SCORE PLUS
Measure Type	Custom
Project Description	The energy conservation measures (ECM) implemented are Expert Refrigeration System, LED lighting, hot gas underfloor heating, fast acting doors, and forklift battery chargers. The measures result in lower energy use during operation than would have been realized with code and standard practice design.
Building Type	Education - Primary School
Other Building Type	
Site Visit Being Conducted	No
Gross Reported kWh	1,699,901
Gross Reported kW	230.40
Gross Verified kWh	1,699,901
Gross Verified kW	230.40
kWh Realization Rate	1.00
kW Realization Rate	1.00
Calculation Assessment	The evaluator verified inputs used by implementer and the savings methodologies.
TRM/Workpaper Assessment	
Reasons for RR(s) <> 1	

Project ID	PRJ-2134564	PRJ-2149543	PRJ-2149577
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting	Lighting
Project Description	Lighting Retrofit	Lighting Retrofit	Interior lighting retrofit
Building Type	Retail - Single-Story Large	Other:	Health/Medical - Hospital
Other Building Type		Farm	
Site Visit Being Conducted	No	No	No
Gross Reported kWh	372,693	452,884	11,850
Gross Reported kW	61.39	116.69	1.74
Gross Verified kWh	372,692	450,371	11,886
Gross Verified kW	61.44	116.06	1.73
kWh Realization Rate	1.00	0.99	1.00
kW Realization Rate	1.00	0.99	1.00
Calculation Assessment			
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	PRJ-2162738	PRJ-2162890	PRJ-2172882
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting	Lighting
Project Description	Lighting Retrofit	Lighting Retrofit	Lighting Retrofit
Building Type	Storage - Refrigerated Warehouse	Education - Secondary School	Retail - Single-Story Large
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	454,829	147,983	86,085
Gross Reported kW	75.15	41.48	15.35
Gross Verified kWh	453,426	147,983	86,083
Gross Verified kW	75.23	41.48	15.34
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00	1.00	1.00
Calculation Assessment			
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	PRJ-2216671	PRJ-2217487	PRJ-2246512
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting	Lighting
Project Description	Lighting Retrofit	Lighting Retrofit	Lighting Retrofit
Building Type	Education - Secondary School	Other:	Retail - 3-Story Large
Other Building Type		Exterior	
Site Visit Being Conducted	No	No	No
Gross Reported kWh	653,984	65,730	269,990
Gross Reported kW	170.28	0.00	0.00
Gross Verified kWh	653,984	65,731	269,990
Gross Verified kW	170.28	0.00	0.00
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00		
Calculation Assessment			
TRM/Workpaper Assessment			
Reasons for RR(s) <> 1			

Project ID	PRJ-2285622	PRJ-2324386	PRJ-2341938
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Custom	Lighting	Lighting
Project Description	VFD's for supply fans, demand control ventilation system (DCV), and new economizer	Exterior Lighting	Interior LED Lighting Retrofit
Building Type	Retail - Single-Story Large	Other:	Office - Small
Other Building Type		Exterior	
Site Visit Being Conducted	No	No	No
Gross Reported kWh	136,664	13,146	4,193
Gross Reported kW	13.22	0.00	1.27
Gross Verified kWh	136,664	13,205	4,193
Gross Verified kW	13.22	0.00	1.26
kWh Realization Rate	1.00	1.00	1.00
kW Realization Rate	1.00		1.00
Calculation Assessment	Savings were calculated using a regression analysis using the historical utility bills, CDD, and HDD.	Straight forward, prescriptive lighting calculation	Straight forward, prescriptive lighting calculation
TRM/Workpaper Assessment		Followed the New Mexico TRM - 2018	No suggested improvements. The building type is actually a firehouse, but Office-Small was used to calculate savings. Seems like the closest fit to a firehouse.
Reasons for RR(s) <> 1	Difference in HDD & CDD	Outdoor Light does not impact Peak Demand	The difference is due to rounding. Ex ante calculations are rounded at the measure level and ex post calculations are not rounded.

Project ID	PRJ-2342031	PRJ-801976
Utility	EPE	EPE
Program	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting
Project Description	Interior LED Lighting Retrofit	Lighting Retrofit
Building Type	Office - Small	Retail - 3-Story Large
Other Building Type		
Site Visit Being Conducted	No	No
Gross Reported kWh	1,293	252,878
Gross Reported kW	0.38	0.00
Gross Verified kWh	1,292	252,878
Gross Verified kW	0.39	0.00
kWh Realization Rate	1.00	1.00
kW Realization Rate	1.03	
Calculation Assessment	Straight forward, prescriptive lighting calculation	
TRM/Workpaper Assessment	No suggested improvements. The building type is actually a firehouse, but Office-Small was used to calculate savings. Seems like the closest fit to a firehouse.	
Reasons for RR(s) <> 1	The ex ante values for kWh and peak kW savings are rounded to two and 0 decimal places, respectively, at the measure-level in the ex ante calculator. Ex post values are not rounded and that is the reason for the slight difference in savings.	

Appendix F – NM EnergySaver Desk Review Detailed Results

Project ID	24269	24326	24034
Utility	EPE	EPE	EPE
Program	NM Energy Saver	NM Energy Saver	Energy Saver
Measure Type	Lighting	Lighting	Other
Project Description	Interior LED Lighting Retrofit	Interior LED Lighting Retrofit	Lighting upgrade, Duct Efficiency and Infiltration
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	695	498	5,738
Gross Reported kW	0.09	0.08	0.42
Gross Verified kWh	1,255	820	5,903
Gross Verified kW	0.16	0.15	0.44
kWh Realization Rate	5.06	4.60	1.08
kW Realization Rate	5.23	5.32	1.40
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment		Savings are not consistent with the NM TRM assumptions for lighting	inconsistent with the NM TRM for all three measures (lighting, infiltration, duct sealing)
Reasons for RR(s) <> 1	The tracking system appears o use the incorrect baseline wattage. The savings were further updated using space by space data from the project documentation.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	Savings differ for several reasons, lighting appears to use the incorrect baseline wattage, its unclear why infiltration and duct sealing differ from the TRM. The duct sealing was further changed by using a SEER of 13 instead of the default based on the age of equipment using the project documentation and equipment specifications.

Project ID	24075	24129	24141
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Other	Other	Other
Project Description	Lighting upgrade, Duct Efficiency	Lighting upgrade, Duct Efficiency, Infiltration	Lighting upgrade, Duct Efficiency, Infiltration
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	4,306	6,114	6,241
Gross Reported kW	0.31	0.43	0.42
Gross Verified kWh	4,569	6,253	6,335
Gross Verified kW	0.39	0.47	0.47
kWh Realization Rate	1.14	1.14	1.18
kW Realization Rate	1.53	1.26	1.31
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	The tracking system savings were inconsistent with the NM TRM for lighting	inconsistent with the NM TRM for all three measures (lighting, infiltration, duct sealing)	inconsistent with the NM TRM for all three measures (lighting, infiltration, duct sealing)
Reasons for RR(s) <> 1	Savings differ for lighting. It appears that the tracking system uses an incorrect baseline wattage. The savings were also updated using the room by room operating hours for the installed lamps based on the project documentation.	Savings differ for lighting. It appears that the tracking system uses an incorrect baseline wattage. The savings were also updated using the room by room operating hours for the installed lamps based on the project documentation. It is unclear why infiltration and duct sealing do not match the TRM.	Savings differ for lighting. It appears that the tracking system uses an incorrect baseline wattage. The savings were also updated using the room by room operating hours for the installed lamps based on the project documentation. It is unclear why infiltration and duct sealing do not match the TRM.

Project ID	24151	24204	24293
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Other	Custom	Other
Project Description	Lighting upgrade, Duct Efficiency, Infiltration	Lighting upgrade, low-flow showerheads and faucet aerators	Evaporative Cooling
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	6,122	990	3,878
Gross Reported kW	0.39	0.09	2.46
Gross Verified kWh	6,101	1,341	3,878
Gross Verified kW	0.41	0.16	2.46
kWh Realization Rate	1.45	2.47	1.00
kW Realization Rate	1.54		1.00
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	The tracking system savings were inconsistent with the NM TRM for all three measures.	Savings are consistent with the NM TRM assumptions except for lighting	The tracking system savings are consistent with the NM TRM for Evap Cooling
Reasons for RR(s) <> 1	Savings differ for lighting. It appears that the tracking system uses an incorrect baseline wattage. The savings were also updated using the room by room operating hours for the installed lamps based on the project documentation. It is unclear why infiltration and duct sealing do not match the TRM. It is not clear why duct efficiency and infiltration differed from the TRM.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	

Project ID	24321	24325	24378
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Custom	Custom	Custom
Project Description	Lighting upgrade, low-flow showerheads and faucet aerators	Lighting upgrade	Lighting upgrade, advanced power strip and new high-efficiency evaporative cooler
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	917	778	4,553
Gross Reported kW	0.06	0.12	2.54
Gross Verified kWh	1,184	1,325	4,923
Gross Verified kW	0.12	0.23	2.61
kWh Realization Rate	1.80	4.77	1.19
kW Realization Rate		5.30	1.05
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	Savings are consistent with the NM TRM assumptions except for lighting	Savings are inconsistent with the NM TRM	Savings are consistent with the NM TRM assumptions except for lighting
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.

Project ID	24387	24392	24406
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Custom	Custom	Other
Project Description	Lighting upgrade, water heater tank & pipe insulation, low-flow showerhead	Water heater tank insulation, low-flow faucet aerators	Lighting upgrade, Evap Cooling, Advanced Power Strip
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,159	447	4,496
Gross Reported kW	0.11	0.05	2.54
Gross Verified kWh	1,671	1,621	4,771
Gross Verified kW	0.18	0.21	2.60
kWh Realization Rate	2.04	3.31	1.15
kW Realization Rate	2.49	3.94	1.04
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	Savings are consistent with the NM TRM assumptions except for lighting and water heater jacket	the NM TRM for the water heater jacket, they were consistent for the faucet aerator	Savings are consistent with the NM TRM assumptions except for lighting
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why the water heater jacket doesn't match the NM TRM.	The tracking system did not include lighting savings, however the project documentation indicates that 25 bulbs were installed. It is not clear why the water heater jacket measure did not match the NM TRM.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.

Project ID	24412	24413	24417
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Custom	Custom	Custom
Project Description	Lighting upgrade, water heater tank & pipe insulation, low-flow showerheads and faucet aerators	Lighting upgrade, low-flow showerhead and faucet aerators	Lighting upgrade
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	977	460	250
Gross Reported kW	0.08	0.02	0.03
Gross Verified kWh	1,235	635	425
Gross Verified kW	0.12	0.05	0.06
kWh Realization Rate	1.55	1.89	4.77
kW Realization Rate	1.97		5.80
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	Savings are consistent with the NM TRM assumptions except for lighting and water heater jacket	Savings are consistent with the NM TRM assumptions except for lighting	Savings are not consistent with the NM TRM assumptions for lighting
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why the water heater jacket savings differ from the NM TRM.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.

Project ID	24452	24481
Utility	EPE	EPE
Program	Energy Saver	Energy Saver
Measure Type	Custom	Custom
Project Description	Lighting upgrade, low-flow showerhead and faucet aerators	Lighting upgrade, duct sealing
Building Type	Residential - Single Family	Residential - Single Family
Other Building Type		
Site Visit Being Conducted	No	No
Gross Reported kWh	764	4,877
Gross Reported kW	0.08	0.27
Gross Verified kWh	1,026	4,931
Gross Verified kW	0.15	0.32
kWh Realization Rate	2.32	1.03
kW Realization Rate		1.10
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	Savings are consistent with the NM TRM assumptions except for lighting	Savings are not consistent with the NM TRM assumptions for lighting and duct sealing
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why duct sealing differs from the NM TRM.

Project ID	24484	24496
Utility	EPE	EPE
Program	Energy Saver	Energy Saver
Measure Type	Custom	Custom
Project Description	thermostat, duct sealing, infiltration reduction, water heater tank insulation, pipe wrap, low-flow showerheads and faucet aerators	Lighting upgrade, smart thermostat and duct sealing
Building Type	Residential - Single Family	Residential - Single Family
Other Building Type		
Site Visit Being Conducted	No	No
Gross Reported kWh	7,983	1,967
Gross Reported kW	0.42	0.63
Gross Verified kWh	8,177	2,271
Gross Verified kW	0.52	0.30
kWh Realization Rate	1.05	1.55
kW Realization Rate		
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	for faucet aerator, low flow showerhead, pipe wrap, and advanced power strip, Smart Thermostat. The savings are inconsistent with the NM TRM for	Savings are consistent with the NM TRM assumptions except for lighting.
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. The reason for the difference in savings for the other measures are unknown. The smart thermostat savings were increased by updating the default heating and cooling system size with the site specific equipment sizes.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.

Project ID	24501	24510	24568
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Custom	Custom	Custom
Project Description	Lighting upgrade, smart thermostat and duct sealing	Lighting upgrade, duct sealing and infiltration reduction	Lighting upgrade, water heater tank & pipe insulation, low-flow showerheads and faucet aerators
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,056	889	1,759
Gross Reported kW	0.26	0.34	0.18
Gross Verified kWh	1,055	1,208	2,278
Gross Verified kW	0.30	0.41	0.29
kWh Realization Rate	1.11	1.87	1.75
kW Realization Rate		1.20	2.76
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	TRM for the smart thermostat but not for the lighting and duct efficiency	Savings are consistent with the NM TRM assumptions except for lighting and duct efficiency	Savings are consistent with the NM TRM assumptions except for lighting and water heater jacket
Reasons for RR(s) <> 1	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why the duct efficiency measure does not match the NM TRM.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why the duct efficiency measure did not match the NM TRM.	The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation. It is not clear why water heater jackets don't match the NM TRM.

Project ID	24612	24616	24775
Utility	EPE	EPE	EPE
Program	Energy Saver	Energy Saver	Energy Saver
Measure Type	Custom	Custom	Other
Project Description	Installation of new high-efficiency evaporative cooler	Lighting upgrade & high-efficiency evaporative cooler	Evaporative Cooling
Building Type	Residential - Single Family	Residential - Single Family	Residential - Single Family
Other Building Type			
Site Visit Being Conducted	No	No	No
Gross Reported kWh	3,878	4,573	3,878
Gross Reported kW	2.46	2.55	2.46
Gross Verified kWh	3,878	5,069	4,785
Gross Verified kW	2.46	2.62	2.57
kWh Realization Rate	1.00	1.23	1.23
kW Realization Rate	1.00	1.05	1.04
Calculation Assessment	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx	Inputs and savings per measure are provided in 2019 EPE CustomerINstallationReport 02112020_Final.xlsx
TRM/Workpaper Assessment	Savings are consistent with the NM TRM.	Savings are consistent with the NM TRM assumptions except for lighting	Savings were consistent with TRM Assumptions (Evap Cooler)
Reasons for RR(s) <> 1		The lighting tracking system savings appear to use the wrong baseline wattage. The savings were further changed by using room by room data from information provided in project documentation.	The project documentation indicated that 17 light bulbs were installed but not included in the tracking system.