ANNUAL REPORT FOR ENERGY EFFICIENCY PROGRAMS
CALENDAR YEAR 2017

NMPRC EFFICIENT USE OF ENERGY RULE 17.7.2 NMAC

JULY 2, 2018

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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 2017 ("2017 Programs"). This Annual Report for Energy Efficiency Programs ("Annual Report") covers the program period from January 1, 2017 through December 31, 2017, and relies on the statewide independent evaluator's report, *Evaluation of the 2017 El Paso Electric Energy Efficiency Programs* ("M&V Report") prepared by Evergreen Economics ("Evergreen"). The M&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") in NMPRC Case No. 16-00185-UT on February 22, 2017.

Summary of Results

Results are based upon independent measurement and verification ("M&V") by Evergreen. The following 2017 Programs are included in this Annual Report:

- LivingWise® Program
- Residential Comprehensive Program
- CFL & LED Program
- ENERGY STAR® New Homes Program
- NM EnergySaver Program
- Small Commercial Comprehensive Program
- SCORE Plus (School and Business Assistance) Program

The following is a short summary of the overall results:

- The 2017 Programs were cost effective as measured by the Utility Cost Test ("UCT"). The UCT for the portfolio of programs was 1.50.[1]
- The total annual net energy savings were 12,729,242 kWh ("kilowatt-hours") at the customer meter.
- The total 2017 Program expenditures were $4,450,884.
- The total amount collected through Rate No. 17 - Efficient Use of Energy Recovery Factor ("EUERF") was $5,158,549.

[1] UCTs are based on NMPRC Case No. 16-00185-UT weighted average cost of capital and avoided costs. 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 2017 Programs.

Table 1 - Results Summary

Program	Participants or Units	Annual Savings (kW)	Annual Savings (kWh)	Lifetime Savings (kWh)	Total Program Expenses
Educational					
LivingWise Program	3,005	9	608,192	5,579,142	$ 111,411
Residential					
Residential Comprehensive Program	1,362	1049	1,716,968	25,725,279	$ 890,126
CFL & LED Program	157,777	391	3,150,678	37,851,580	$ 431,786
ENERGY STAR New Homes Program	233	170	351,044	7,224,709	$ 349,056
Low Income					
NM EnergySaver Program	2,314	167	1,023,105	16,812,282	$ 547,530
Commercial					
Small Commercial Comprehensive Program	132	318	1,931,468	26,958,540	$ 489,077
SCORE Plus Program	227	397	3,947,786	57,123,104	$ 1,542,254
General Administration	-	-	-	-	$ 25,427
Marketing for All Programs	-	-	-	-	$ 61,646
Awareness Building Campaign	-	-	-	-	$ 2,571
TOTAL	**165,050**	**2,501**	**12,729,242**	**177,274,636**	**$ 4,450,884**

Table 2 presents the net present value ("NPV") of the 2017 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 - Benefit-Cost Analysis by Program

Program	NPV of Benefits	NPV of Expenses	UCT
Educational			
LivingWise Program	117,762	111,411	1.06
Residential			
Residential Comprehensive Program	1,921,770	890,126	2.16
CFL & LED Program	1,165,003	431,786	2.70
ENERGY STAR New Homes Program	405,753	349,056	1.16
Low Income			
NM EnergySaver Program	639,402	547,530	1.17
Commercial			
Small Commercial Comprehensive Program	900,340	489,077	1.84
SCORE Plus Program	1,510,738	1,542,254	0.98
General Administration	-	25,427	-
Marketing for All Programs	-	61,646	-
Awarenes Building Campaign	-	2,571	-
TOTAL	**6,660,767**	**4,450,884**	**1.50**

2017 Cumulative Program Goals

Table 3 provides the annual and cumulative energy savings achieved from 2008 through 2017. 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 2017, EPE had achieved a cumulative total savings of 118,301,309 kWh. This exceeds the 2020 statutory goal by 12.34%.

Table 3: Cumulative Energy Savings

Year	Annual kWh Savings	Annual Expired Portfolio kWh	Cumulative kWh Savings
2008	**855,912**		855,912
2009	4,667,928		5,523,840
2010	5,169,908		10,693,748
2011	14,728,590		25,422,338
2012	13,537,655		38,959,993
2013	12,832,995		51,792,988
2014	20,692,228		72,485,216
2015	15,729,342		88,214,558
2008 Exp.		**(855,912)**	87,358,646
2016	18,213,422		105,572,068
2017	12,729,242		118,301,310

Section II. Program Descriptions

Educational Program

LivingWise Program

The LivingWise Program is an educational program that targets fifth grade students. Participating teachers are provided with 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 Resource Action Programs® ("RAP") to implement and manage this program. RAP identified and enrolled teachers and their students within EPE's New Mexico service territory. EPE distributed 3,005 kits during the 2017 fall semester and achieved a savings of 608,192 kWh.

Residential Programs

Residential Comprehensive Program

In Case No. 16-00185-UT, EPE's Commission-approved plan combined EPE's existing Home Efficiency and High Efficiency Cooling Programs into the new Residential Comprehensive Program. This program offers rebates for the following measures: ceiling and floor insulation, duct sealing, air infiltration, solar screens, evaporative coolers and refrigerated air conditioning. In 2017, EPE added rebates for variable speed drive pool pumps and insulation for homes with evaporative coolers and electric resistance heating. The rebates are paid directly to the customer, or upon customer approval, can be paid to the contractors that perform the installation. Frontier Associates administered 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 2017, a total of 1,362 rebates were processed with an annual savings of 1,716,968 kWh.

Residential CFL & LED Program

The Residential CFL & LED Program provides incentives in the form of markdowns and discount coupons at retail locations. The program encourages customers to replace their existing light bulbs with energy efficient CFLs and LEDs. In 2017, the focus of the program shifted from CFLs to LEDs to promote more energy efficient technology. As a result, CFLs accounted for only 0.2% of sales in 2017. EPE contracted with Energy Federation Incorporated and CLEAResult Consulting to provide the outreach and administration for this program. There were a total of 17 participating retail locations where EPE offered this program. EPE promoted the CFL & LED Program through several outreach methods including radio and newspaper advertising, social media, and point of purchase displays at stores. Additionally, EPE provided 2,000 4-packs of LEDs to customers at no cost through several Doña Ana County Health & Human Services Community Centers. There were a total of 157,777 bulbs sold and distributed through this program, saving a total of 3,150,678 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 that homebuilders can choose from depending upon which one fits their needs. The Performance Path provides tiered incentive levels for new homes that exceed the 2009 IECC building code goals. For homebuilders to qualify for the Performance Path, EPE changed the minimum tier from five percent above code to ten percent above code in 2017. Under the Prescriptive Path, homebuilders can receive incentives for the installation of a combination of measures that exceed the building code requirements including ENERGY STAR® lighting and refrigerators, radiant barriers, insulation and refrigerated air conditioning. Incentives are paid on a per measure basis, and incentive rates differ by measure type. EPE contracted with ICF International, Inc. 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 they 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 2017, 233 homes participated in this program and a total annual savings of 351,044 kWh was achieved.

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% of the federal poverty guidelines. Homes with refrigerated air conditioning qualified for LEDs, insulation, air infiltration, and duct sealing. Homes with evaporative coolers qualified for LEDs. Homes with electric water heaters also qualified for low-flow kitchen and bathroom aerators, and low-flow showerheads. Frontier Associates administered and tracked the results of this program and EnergyWorks identified customers and implemented the direct installs. EnergyWorks collaborated with a variety of community organizations including neighborhood associations, church groups, and low-income service providers. To provide customers a more comprehensive energy efficiency service approach, EnergyWorks continued to combine energy efficiency services with New Mexico Gas Company and Zia Natural Gas Company when possible. EPE promoted this program through outreach utilizing customer referrals, door-to-door marketing, bill inserts, and radio and newspaper advertising. This program had 2,314 participants and had an annual savings of 1,023,105 kWh.

Commercial Programs

Small Commercial Comprehensive Program

The Small Commercial Comprehensive Program is implemented by EPE and provides energy efficiency incentives and rebates for commercial customers whose average annual demand is up to and including 100 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, vending miser controls, and solar screen/film window treatments. EPE identified possible energy efficiency measures by conducting walk-through audits. EPE contracted with Frontier Associates to administer the incentive and rebate process and track the results of the program. EPE

advertised the Small Commercial Comprehensive Program through direct customer contact, bill inserts, and social media. To further promote this program, EPE reached out to various electrical contractors and distributors, HVAC contractors and distributors, and property managers. A full-day High Performance HVAC Tune-Up training was provided to interested HVAC contractors. The Small Commercial Comprehensive Program had 132 participants and saved a total of 1,931,468 kWh.

SCORE Plus Program

The SCORE Plus (School and Business Assistance) 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, city, and county customers, 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 custom projects. EPE contracted with CLEAResult to actively recruit eligible customers and provide assistance 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 full-day High Performance HVAC Tune-Up training was provided to interested HVAC contractors. In 2017, a total of 227 participants saved 3,947,786 kWh through various energy efficiency measures.

Awareness Building Campaign

Awareness Building & Trade Ally Campaign

During 2017, EPE successfully educated customers and contractors about the benefits of EPE's New Mexico energy efficiency programs, including how customers could participate, how to contact EPE employees directly via the Energy Efficiency Hotline, and how to access the EPE website which provides the necessary energy efficiency program information and forms. EPE also provided contractors with best practices training during the program kickoff meetings. EPE participated in various community events, provided presentations on energy efficiency and energy conservation, and included program information in bill inserts, print and radio advertising, and social media.

Section III. Energy Efficiency Rule Reporting Requirements

Section III of the Annual Report provides program information to comply with the Efficient Use of Energy Act as required by the NMPRC Energy Efficiency Rule, Section 17.7.2.14 NMAC.

Documentation of Program Expenditures

Table 4 shows the allocation of 2017 expenses by program. The Commission approved EPE's 2017 Program budget in Case No. 16-00185-UT. All 2017 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. Costs specific to an individual program, such as customer incentives and targeted promotion are allocated directly to that program. Administration costs are allocated to each program in proportion to their direct costs. To ensure there was no cross-subsidization or impact on EPE's rate of return, these energy efficiency expenses and revenues were kept separate from EPE rate-base accounting. The total 2017 program costs were $4,450,884 of the approved $5,191,267 budget or 85.7% of the budget.

Table 4: 2017 Program Expenditures

Programs	Administration*	Marketing	M&V	Customer Incentives	Total Program Expenses
Educational					
LivingWise Program	$ 7,288	$ -	$ -	$ 104,123	$ 111,411
Residential					
Residential Comprehensive Program	$ 90,029	$ -	$ 10,545	$ 789,552	$ 890,126
CFL & LED Program	$ 169,336	$ 891	$ 6,070	$ 255,489	$ 431,786
ENERGY STAR New Homes Program	$ 165,310	$ -	$ -	$ 183,745	$ 349,056
Low Income					
NM EnergySaver Program	$ 70,253	$ -	$ 14,989	$ 462,288	$ 547,530
Commercial					
Small Commercial Comprehensive	$ 64,255	$ 636	$ 39,451	$ 384,735	$ 489,077
SCORE Plus Program	$ 750,426	$ -	$ 29,453	$ 762,375	$ 1,542,254
General Administration	$ 25,427	$ -	$ -	$ -	$ 25,427
Marketing for All Programs	$ -	$ 61,646	$ -	$ -	$ 61,646
Awareness Building Campaign	$ -	$ 2,571	$ -	$ -	$ 2,571
TOTAL	**$ 1,342,325**	**$ 65,743**	**$ 100,507**	**$ 2,942,309**	**$ 4,450,884**

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

Table 5: shows the breakdown of participant incentives by rate class.

Table 5 - Participant Incentives by Rate Class

Program	Residential NMRT01	Small Commercial NMRT03	General Service NMRT04	City and County NMRT07	Large Power Service NMRT09	State University NMRT26	Noticed Interruptible NMRT29	Total Participant Incentives
Educational								
LivingWise Program	$ 104,123	$ -	$ -	$ -	$ -	$ -	$ -	$ 104,123
Residential								
Residential Comprehensive Program	$ 789,552	$ -	$ -	$ -	$ -	$ -	$ -	$ 789,552
CFL & LED Program	$ 255,489	$ -	$ -	$ -	$ -	$ -	$ -	$ 255,489
ENERGY STAR New Homes Program	$ 183,745	$ -	$ -	$ -	$ -	$ -	$ -	$ 183,745
Low Income								
NM EnergySaver Program	$ 462,288	$ -	$ -	$ -	$ -	$ -	$ -	$ 462,288
Commercial								
Small Commercial Comprehensive	$ -	$ 252,417	$ 129,612	$ 2,706	$ -	$ -	$ -	$ 384,735
SCORE Plus Program	$ -	$ 109,497	$ 150,500	$ 451,967	$ 31,500	$ 7,890	$ 11,021	$ 762,375
TOTAL	**$ 1,795,199**	**$ 361,914**	**$ 280,112**	**$ 454,673**	**$ 31,500**	**$ 7,890**	**$ 11,021**	**$ 2,942,309**

Table 6 shows the budgeted amounts, the program expenditures, and the variances for each program during 2017. The variances in individual program costs from the budgeted amounts were primarily due to customer participation being lower or higher than projected.

Table 6 - Budget Variances

Program	2017 Budget	Total Program Expenses	Variance %
Educational			
LivingWise Program	$ 157,317	$ 111,411	-29%
Residential		-	
Residential Comprehensive Program	$ 1,231,382	$ 890,126	-28%
CFL & LED Program	$ 478,000	$ 431,786	-10%
ENERGY STAR New Homes Program	$ 357,000	$ 349,056	-2%
Low Income			
NM EnergySaver Program	$ 510,465	$ 547,530	7%
Commercial			
Small Commercial Comprehensive Program	$ 654,650	$ 489,077	-25%
SCORE Plus Program	$ 1,531,453	$ 1,542,254	1%
General Administration	$ 100,000	$ 25,427	-75%
Marketing for All Programs	$ 110,000	$ 61,646	-44%
Awareness Building Campaign	$ 61,000	$ 2,571	-96%
TOTAL	**$ 5,191,267**	**$ 4,450,884**	**-14%**

Estimated and Actual Customer Participation and Savings Levels

Table 7 presents the estimated and actual customer participation levels, annual energy savings, and annual peak demand savings for each program.

Table 7 - 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	2,996	3,005	736,909	608,192	26	9
Residential Comprehensive Program	1,615	1,362	3,259,383	1,716,968	1,995	1,049
CFL & LED Program	101,325	157,777	1,184,390	3,150,678	120	391
ENERGY STAR New Homes Program	309	233	373,974	351,044	183	170
NM EnergySaver Program	41,790	2,314	996,439	1,023,105	111	167
Small Commercial Comprehensive Program	159	132	2,090,027	1,931,468	319	318
SCORE Plus Program	201	227	4,605,661	3,947,786	687	397
TOTAL	**148,395**	**165,050**	**13,246,783**	**12,729,242**	**3,441**	**2,501**

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

Table 8 presents the net present value of estimated and actual monetary expenses and benefits for each program. The estimated expenses and benefits were included in Case No. 16-000185-UT.

Table 5 - Participant Incentives by Rate Class

Program	Residential NMRT01	Small Commercial NMRT03	General Service NMRT04	City and County NMRT07	Large Power Service NMRT09	State University NMRT26	Noticed Interruptible NMRT29	Total Participant Incentives
Educational								
LivingWise Program	$ 104,123	$ -	$ -	$ -	$ -	$ -	$ -	$ 104,123
Residential								
Residential Comprehensive Program	$ 789,552	$ -	$ -	$ -	$ -	$ -	$ -	$ 789,552
CFL & LED Program	$ 255,489	$ -	$ -	$ -	$ -	$ -	$ -	$ 255,489
ENERGY STAR New Homes Program	$ 183,745	$ -	$ -	$ -	$ -	$ -	$ -	$ 183,745
Low Income								
NM EnergySaver Program	$ 462,288	$ -	$ -	$ -	$ -	$ -	$ -	$ 462,288
Commercial								
Small Commercial Comprehensive	$ -	$ 252,417	$ 129,612	$ 2,706	$ -	$ -	$ -	$ 384,735
SCORE Plus Program	$ -	$ 109,497	$ 150,500	$ 451,967	$ 31,500	$ 7,890	$ 11,021	$ 762,375
TOTAL	**$ 1,795,199**	**$ 361,914**	**$ 280,112**	**$ 454,673**	**$ 31,500**	**$ 7,890**	**$ 11,021**	**$ 2,942,309**

Cost Effectiveness Evaluation

Table 9 presents the UCT for each program. The UCT of the total portfolio of programs was 1.50. UCTs are based on NMPRC Case No. 16-00185-UT weighted average cost of capital and avoided costs. A UCT of greater than one indicates the cost effectiveness of the energy efficiency portfolio or program.

Table 9 - Cost Effectiveness by Program

Program	UCT
Educational	
LivingWise Program	1.06
Residential	
Residential Comprehensive Program	2.16
CFL & LED Program	2.70
ENERGY STAR New Homes Program	1.16
Low Income	
NM EnergySaver Program	1.17
Commercial	
Small Commercial Comprehensive Program	1.84
SCORE Plus Program	0.98
TOTAL	**1.50**

Self-Directed Program Participation

EPE did not receive any applications for customer self-directed programs in 2017.

Independent Measurement and Verification Report

The statewide independent evaluator, Evergreen, was chosen by the NMPRC. EPE contracted with Evergreen to conduct the independent evaluation of its 2017 Programs. The M&V Report is included as Attachment A of 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 2017 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 M&V Report

All program-related expenditures are included in the M&V Report. EPE spent a total of $4,450,884 for the 2017 Programs.

Annual Economic Benefits by Program

Table 10 presents the annual and lifetime energy savings, estimated useful life, and annual economic benefits for the 2017 Programs.

Table 10 - Annual Economic Benefits

Program	Annual Energy Savings (kWh)	Lifetime Energy Savings (kWh)	Estimated Useful Life	Annual Benefits
Educational				
LivingWise Program	608,192	5,579,142	9	$ 12,837
Residential				
Residential Comprehensive Program	1,716,968	25,725,279	15	$ 128,264
CFL & LED Program	3,150,678	37,851,580	12	$ 96,972
ENERGY STAR New Homes Program	351,044	7,224,709	21	$ 19,715
Low Income				
NM EnergySaver Program	1,023,105	16,812,282	16	$ 38,911
Commercial				
Small Commercial Comprehensive Program	1,931,468	26,958,540	14	$ 64,506
SCORE Plus Program	3,947,786	57,123,104	14	$ 104,407
TOTAL	**12,729,242**	**177,274,636**	**14**	**$ 465,612**

Non-Energy Benefits

Table 11 shows the estimated emissions savings, and Table 12 shows the estimated water savings associated with the 2017 Programs. The annual and lifetime avoided emissions are determined by multiplying the emission rates times the annual and lifetime MWh ("Megawatt-hours") saved. The water savings are determined by multiplying EPE's average portfolio water consumption per MWh times the annual and lifetime energy savings.

Table 11 - Emissions Savings

Emission Type	Avoided Electric Emmision Rate (lbs/MWh)	Annual Avoided Emissions (tons)	Lifetime Avoided Emissions (tons)
SO_2	0.0066	0.04	0.59
NO_X	1.44	9.18	127.84
CO_2	1,210	7,700	107,232
Particles	0.0969	0.62	8.59

Table 12 - Water Savings

Water Impact	EPE Portfolio Water Consumption (gal/MWh)	Annual Water Saved (gal)	Lifetime Water Saved (gal)
Water Saved	517	6,580,856	91,648,734

Tariff Reconciliation

Table 13 presents the calculation for EPE's 2017 tariff reconciliation based on the 2017 program expenditures plus the approved 2017 utility incentive, less EPE's internal administration costs, and less the cost recovery through EPE's EUERF from January through December 2017. The costs recovered through the EUERF are not otherwise recovered through EPE's base rates.

Table 13: Energy Efficiency Historical Underage(Overage) Recovery

Description	Total Program Expenses	7.325% Utility Incentive	Internal Admin Costs Recovered Through Base Rates	EUERF Recovery	Underage/ (Overage)
2017 Energy Efficiency Activity	$ 4,450,884	$ 326,027	$ 227,942	$ 5,158,549	$ (609,580)
Ending Balance					**$ (609,580)**

EPE's overage at the end of 2017 was $609,580 for the expenses associated with the implementation of its energy efficiency programs and the overall recovery through the EUERF.

Table 14 presents the month-by-month reconciliation of EPE's tariff reconciliation.

Table 14: Energy Efficiency Historical Underage(Overage) Recovery

Month	Total Program Expenses	7.325% Utility Incentive	Internal Admin Costs Recovered Through Base Rates	EUERF Recovery	Underage/ (Overage)
Jan 2017	$ 21,252	$ 1,557	$ 18,995	$ 315,767	$ (311,953)
Feb 2017	$ 137,255	$ 10,054	$ 18,995	$ 309,911	$ (493,550)
Mar 2017	$ 430,048	$ 31,501	$ 18,995	$ 361,407	$ (412,403)
Apr 2017	$ 289,080	$ 21,175	$ 18,995	$ 320,537	$ (441,679)
May 2017	$ 512,552	$ 37,544	$ 18,995	$ 409,082	$ (319,660)
Jun 2017	$ 438,777	$ 32,140	$ 18,995	$ 610,677	$ (478,415)
Jul 2017	$ 307,153	$ 22,499	$ 18,995	$ 685,775	$ (853,533)
Aug 2017	$ 257,766	$ 18,881	$ 18,995	$ 566,027	$ (1,161,908)
Sep 2017	$ 265,068	$ 19,416	$ 18,995	$ 497,984	$ (1,394,402)
Oct 2017	$ 380,795	$ 27,893	$ 18,995	$ 417,228	$ (1,421,937)
Nov 2017	$ 450,445	$ 32,995	$ 18,995	$ 314,408	$ (1,271,901)
Dec 2017	$ 960,691	$ 70,371	$ 18,995	$ 349,745	$ (609,580)
Total	**$ 4,450,884**	**$ 326,027**	**$ 227,942**	**$ 5,158,549**	

Estimated Program Expenditures Expected in 2018

Table 15 shows estimated program expenditures for 2018. EPE did not have any adjustments to expenditures in plan year 2017 and does not expect any adjustments to expenditures in the next plan year 2018.

Table 15: Estimated Program Expenditures Expected in 2018

2018 Program	Budget	Estimated Participants or Units	Estimated Savings (kW)	Estimated Savings (kWh)	2018 Estimated UCT
Educational					
LivingWise Program	$ 157,317	2,996	26	736,909	1.15
Residential					
Residential Comprehensive Program	$ 1,231,382	1,615	1,995	3,259,383	2.78
CFL & LED Program	$ 478,000	101,325	120	1,184,390	1.11
ENERGY STAR New Homes Program	$ 357,000	309	183	373,974	1.12
Low Income					
NM EnergySaver Program	$ 510,465	41,790	111	996,439	1.00
Commercial					
Small Commercial Comprehensive Program	$ 654,650	159	319	2,090,027	1.28
SCORE Plus Program	$ 1,531,453	201	687	4,605,661	1.28
General Administration	$ 100,000				-
Marketing for All Programs	$ 110,000				-
Awareness Building Campaign	$ 61,000				-
TOTAL	**$ 5,191,267**	**148,395**	**3,441**	**13,246,783**	**1.50**

ATTACHMENT A

Evaluation of the 2017 El Paso Electric Energy Efficiency Programs
Prepared by Evergreen Economics

EVERGREEN ECONOMICS

Evaluation of the 2017 El Paso Electric Energy Efficiency Programs

Final Report

May 8, 2018

ECOMETRIC

RESEARCH & POLLING INC

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Executive Summary

This report presents the independent evaluation results for the El Paso Electric (EPE) energy efficiency programs for program year 2017 (PY2017).

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.

For PY2017, the following EPE programs were evaluated:

- Small Business Comprehensive
- SCORE Plus
- CFL and LED Program

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. A brief process evaluation was also conducted for the Small Business Comprehensive and SCORE Plus programs.

The remaining programs that were not evaluated in 2017 are still summarized in this report. The accomplishments for the non-evaluated programs are reported using the following parameters:

[1] NMSA §§ 62-17-1 *et seq* (SB 644). Per the New Mexico Public Regulation Commission Rule Pursuant to the requirements of the EUEA, the NMPRC issued its most recent *Energy Efficiency Rule* (*17.7.2 NMAC*) effective January 1, 2015 that sets forth the NMPRC's policy and requirements for energy efficiency and load management programs. This Rule can be found online at http://164.64.110.239/nmac/parts/title17/17.007.0002.htm

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

The analysis methods used for the evaluated PY2017 programs are summarized as follows:

Small Business Comprehensive. The measures eligible for the Small Business 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 23 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 Small Business 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 28 projects completed in 2017. 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.

CFL and LED Program. For the CFL and LED program, deemed savings values included in EPE's tracking data (and used for the *ex ante* impacts) were compared with the values contained in the New Mexico TRM. If the values did not match, they were carefully reviewed to determine if the values were reasonable and the source appropriately documented. Net impacts were estimated using the lighting elasticity model.

Table 1 summarizes the PY2017 evaluation methods.

Table 1: Summary of PY2017 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Verification	Engineering Desk Reviews	Elasticity Model
Small Business Comprehensive	◆	◆	◆	☐
SCORE Plus	◆	◆	◆	
CFL and LED	◆	☐	☐	◆

The results of the PY2017 impact evaluation are shown in Table 2 (kWh) and Table 3 (kW), with the programs evaluated in 2017 highlighted in blue. For the non-evaluated programs, the totals are based on the *ex ante* savings and NTG values from the EPE tracking data.

Table 2: PY2017 Savings Summary - kWh

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Small Business Comprehensive	132	2,296,883	1.0214	2,346,008	0.8233	1,931,468
SCORE Plus	227	5,157,131	0.9230	4,759,809	0.8294	3,947,786
CFL and LED	157,777	4,847,197	1.0000	4,847,197	0.6500	3,150,678
Residential Comprehensive	1,362	4,010,389	1.0000	4,010,389	0.4281	1,716,968
ENERGY STAR® New Homes	233	384,495	1.0000	384,495	0.9130	351,044
NM Energy Saver	2,314	1,023,105	1.0000	1,023,105	1.0000	1,023,105
LivingWise	3,005	608,192	1.0000	608,192	1.0000	608,192
Total		**18,327,393**		**17,979,195**		**12,729,241**

Table 3: PY2017 Savings Summary - kW

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Small Business Comprehensive	132	381	1.0136	386	0.8233	318
SCORE Plus	227	466	1.0270	478	0.8294	397
CFL and LED	157,777	602	1.0000	602	0.6500	391
Residential Comprehensive	1,362	2,449	1.0000	2,449	0.4281	1,049
ENERGY STAR® New Homes	233	186	1.0000	186	0.9130	170
NM Energy Saver	2,314	167	1.0000	167	1.0000	167
LivingWise	3,005	9	1.0000	9	1.0000	9
Total		**4,261**		**4,278**		**2,501**

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. All programs except SCORE Plus had a UCT of greater than 1.00, and the portfolio overall was found to have a UCT ratio of 1.50.

[2] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
[3] 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

Table 4: PY2017 Cost Effectiveness

Program	Utility Cost Test (UCT)
Small Business Comprehensive	1.84
SCORE Plus	0.98
CFL and LED	2.70
Residential Comprehensive	2.16
ENERGY STAR® New Homes	1.16
NM Energy Saver	1.17
LivingWise	1.06
Overall Portfolio	**1.50**

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

The impact evaluation—which included engineering desk reviews for a sample of Small Business Comprehensive and SCORE Plus projects and a deemed savings review and elasticity model for the CFL and LED program—resulted in relatively high realized gross savings. Adjustments to savings based on the Small Business Comprehensive and SCORE Plus desk reviews were due to two main factors: differences in hours-of-use for lighting calculations and two prescriptive HVAC projects that utilized assumptions from the Texas TRM, which did not appear to provide any additional accuracy beyond the New Mexico TRM that was used for other prescriptive HVAC projects. The evaluation team has provided a few recommendations to improve savings values stemming from these findings. A recommendation to include original bulb price in the CFL and LED program tracking data was also made.

In terms of cost effectiveness, the UCT test was used and found all EPE programs to be cost effective. If EPE or the NMPRC desires other cost effectiveness tests to be used in the future, the evaluation team suggests that EPE track measure costs so that the Total Resource Cost (TRC) test could be utilized to evaluate cost effectiveness in future program years.

The process evaluation activities, which included surveys with Small Business Comprehensive participants and interviews with SCORE Plus participants, found high levels of satisfaction across various aspects of the programs. Very few instances of dissatisfaction were reported, and the main recommendations for improvement were to

expedite the rebate process and expand HVAC incentive offerings to encourage larger HVAC projects.

1 Introduction

This report presents the independent evaluation results for El Paso Electric (EPE) energy efficiency programs for program year 2017 (PY2017).

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.

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

For PY2017, the following EPE programs were evaluated:

[4] NMSA §§ 62-17-1 *et seq* (SB 644). Per the New Mexico Public Regulation Commission Rule Pursuant to the requirements of the EUEA, the NMPRC issued its most recent *Energy Efficiency Rule* (*17.7.2 NMAC*) effective January 1, 2015 that sets forth the NMPRC's policy and requirements for energy efficiency and load management programs. This Rule can be found online at http://164.64.110.239/nmac/parts/title17/17.007.0002.htm

- Small Business Comprehensive
- SCORE Plus
- CFL and LED Program

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 Utility Cost Test (UCT). A brief process evaluation was also conducted for the Small Business Comprehensive and SCORE Plus programs.

The remaining programs that were not evaluated in 2017 are still summarized in this report. The accomplishments for the non-evaluated programs are reported using the following parameters:

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

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 PY2017 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 PY2017 programs are summarized as follows:

Small Business Comprehensive. The measures eligible for the Small Business 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 23 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 Small Business 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 28 projects completed in 2017. 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.

CFL and LED Program. For the CFL and LED program, deemed savings values included in EPE's tracking data (and used for the *ex ante* impacts) were compared with the values contained in the New Mexico TRM. If the values did not match, they were carefully reviewed to determine if the values were reasonable and the source appropriately documented. Net impacts were estimated using the lighting elasticity model.

Table 5 summarizes the PY2017 evaluation methods. Additional detail on each of these evaluation methods is included in the remainder of this chapter.

Table 5: Summary of PY2017 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Verification	Engineering Desk Reviews	Elasticity Model
Small Business Comprehensive	◆	◆	◆	□
SCORE Plus	◆	◆	◆	
CFL and LED	◆	□	□	◆

2.1 Phone Surveys

A participant phone survey was fielded in the spring of 2018 for participants in the Small Business Comprehensive program and phone interviews were conducted with SCORE

Plus participants. The surveys and interviews averaged about 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 60 phone surveys across the two programs (50 for Small Business Comprehensive and 10 for SCORE Plus). Given the low number of participants for SCORE Plus (17), we attempted to contact a census of participants for this program and were able to complete 6 interviews. Table 6 shows the distribution of completed surveys and interviews.

Table 6: EPE Phone Survey Summary

Program	Customers with Valid Contact Info	Target # of Survey Completes	Completed Surveys
Small Business Comprehensive	79	50	50
SCORE Plus	17	10	6
Total	**96**	**60**	**56**

The final survey instrument for Small Business Comprehensive is included in Appendix A and the interview guide for SCORE Plus is included in Appendix B.

2.2 Engineering Desk Reviews

In order to verify gross savings estimates, the evaluation team conducted engineering desk reviews for a sample of the projects in the Small Business Comprehensive and SCORE Plus 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/or post-installation reports; and
- Review of post-installation reports detailing differences between installed equipment and documentation, and subsequent adjustments made by the program implementer.

For projects in the Small Business Comprehensive program that used deemed savings values for prescriptive measures, 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 measure;
- 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 the custom projects included in the SCORE Plus program, the engineering desk reviews included the following:

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

In support of the engineering desk reviews, primary data were collected for select projects through engineering in-depth interviews. These interviews involved speaking with project contacts to confirm equipment installation and operational parameters, in order to determine if additional adjustments to the savings calculations were necessary.

2.3 Net Impact Analysis

2.3.1 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 Technical Reference Manual (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.

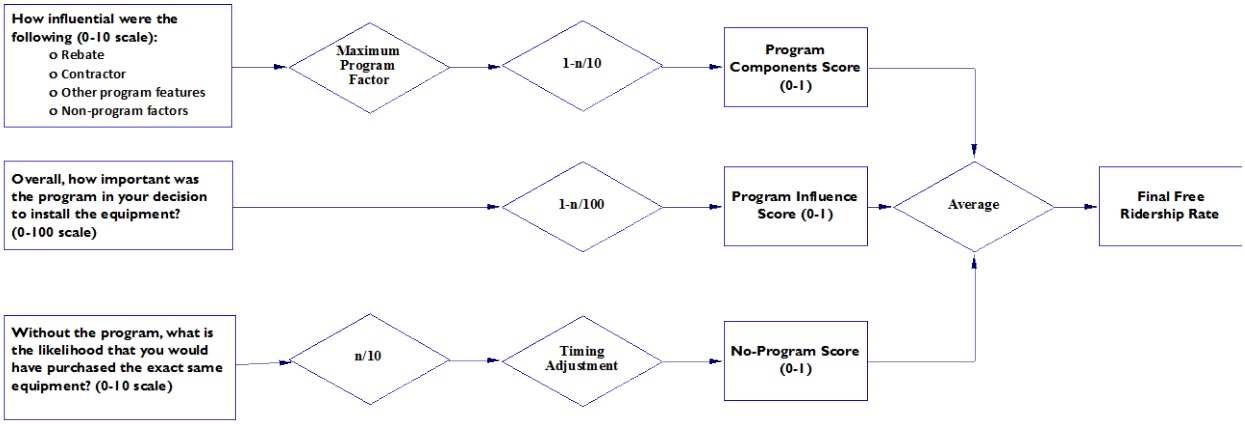
Each component was assessed using survey responses that rated the influence of various factors on the respondent's equipment choice. Since opposing biases potentially affect the main components, the *No-Program* component typically indicates higher free ridership

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

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

Figure 1: Self-Report Free Ridership Scoring Algorithm



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

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

Program Component Questions

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

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

- How influential were the following on your decision to purchase your energy efficient equipment?
  - Rebate amount
  - Contractor recommendation

- Utility advertising/promotions
- Technical assistance from the utility (e.g., energy audit)
- Recommendation from utility customer representative (or program implementer)
- Previous participation in a utility efficiency program

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

Program Influence Question

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

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

No-Program Questions

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

Free Ridership and NTG Calculation

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

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

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

2.3.2 Elasticity Model

The evaluation team used an elasticity model to estimate free ridership (and ultimately net impacts) for EPE's upstream CFL and LED program. The elasticity model approach was used for two primary reasons:

1. Customer-specific purchase information is not tracked for the bulbs bought through the program. This is common for upstream programs, where the rebate is provided to the retailer rather than the customer. To promote sales, ease of use for the customer is emphasized over burdening the customer with requests for additional information.

2. The elasticity model is based on observed market behavior and utilizes all the light bulb sales data from the program. This is in contrast to the alternative net impact methods (either phone surveys or store intercept surveys) that only cover a small portion of program bulb sales. Since all the sales data are used in the model, the results will be more representative. The data also reflect actual market decisions (revealed preferences) rather than the hypothetical purchase scenarios that would be obtained using the surveys (stated preferences).

The purpose of the elasticity model is to estimate how sensitive customers are to price changes for the energy efficient lighting options rebated through the program. By calculating the price elasticity, we create an estimate of how much demand will change with a change in price. Once this relationship is established, we can estimate how much the price reduction through the program is influencing overall lighting sales.

A variety of different model specifications were explored, and the final elasticity model is as follows:

$$Bulbs_{i,t,s} = InvoicePeriod_{i,t,s} * e^{(\alpha+\beta_1 Price_{i,t,s}+\beta_2 Watts_i+\beta_3 Char_i+\varepsilon_{i,t,s})}$$

Where:

$Bulbs_{i,t,s}$ = *Number of bulbs sold by product type i, during period t, at store s*

$Price_{i,t,s}$ = *Rebated price for product type i, during period t, at store s*

$Watts_i$ = *Wattage for bulb type i*

$Char_i$ = *Indicator variables describing particular characteristics of bulb type i*

$InvoicePeriod_{i,t,s}$ = *Number of days each bulb type i was offered for sale during period t at store s*

With this model specification and *Price* as an independent variable, the coefficient estimate on the *Price* variable multiplied by the average price of a rebated bulb is an elasticity. In this case, the elasticity reflects the percentage change in lighting demand due to a 1 percent change in lighting price. A value less than 1 percent indicates that lighting purchases are relatively insensitive to price changes, while a value greater than 1 indicates that customers are sensitive to prices and therefore the program will have a greater impact in the lighting market (i.e., lower free ridership).

Once the elasticity is estimated, the net program bulb sales are estimated using the following steps:

1. The total number of bulbs sold through the program is totaled from the program sales data (**Gross Program Sales**).
2. The average price per bulb ***without*** the rebate is calculated from the sales data (i.e., the rebate cost is added back to the bulb price).
3. The elasticity value is used to estimate how much bulb sales would decrease if the price were increased by the amount of the rebate (mimicking the sales if the rebate had not been available). The change in bulb sales due to the price increase is the **Net Program Sales,** as this is the amount of total bulb sales that are being driven by the rebate.
4. The **Free Rider Sales** are calculated by subtracting **Net Program Sales** from **Gross Program Sales.**
5. The free ridership rate and final NTG ratio are calculated using the following equation:

$$Free\ Ridership\ Rate = \frac{Free\ Rider\ Sales}{Gross\ Program\ Sales}$$

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

There are several important advantages to using the elasticity model rather than a phone survey to estimate net impacts:

- **The elasticity model is based on real world behavior.** The model is estimated based on market data from actual lighting purchases, which is the best indicator of customers' sensitivity to price. This is preferable to a self-report survey where we would first need to locate lighting purchasers in the general population and then ask them what type of lighting purchases they would have made if the price had not been reduced. These hypothetical 'stated preference' data are generally less preferred than actual market data, but sometimes they are the only data available.
- **A larger sample size is available at lower cost.** Because the model can be estimated based on data that are already tracked by the program, an additional customer survey is not needed. This reduces the cost of the evaluation significantly. Similarly, because we can use the entire lighting dataset (not just a subset of those customers surveyed), the evaluation has a larger amount of data that should lead to more accurate estimates of net impacts.
- **The elasticity model approach has been applied successfully in other territories.** This approach is gaining wider use in other regions, for the reasons given above. This has allowed the elasticity model to be tested and refined over time.

The Uniform Methods Project (UMP)[6] discusses the elasticity model as an appendix to its larger chapter on recommended methods for estimating net impacts.[7]

2.4 Realized Gross Savings and Net Impact Calculation

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

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

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

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

2.5 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 obtained 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);

[6] The UMP is sponsored by the National Renewable Energy Lab and provides documentation of current energy efficiency program evaluation practices. The purpose of the UMP is to promote consistent and straightforward methods for estimating gross and net savings based on current best practices.

[7] See https://www.nrel.gov/docs/fy17osti/68578.pdf for the full UMP net impacts discussion. The discussion of elasticity model is included in Appendix A. Daniel Voilette and P. Rathbun. "Chapter 21: Estimating Net Savings – Common Practices." *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures.* Prepared for the National Renewable Energy Laboratory (NREL), October 2017.

- 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 administrative costs. EPE does not quantify the avoided cost of CO2 emissions, or avoided costs for transmission and distribution separate from the avoided cost of capacity.

Program savings, incremental measure costs, and effective useful life values were taken from the final PY2017 tracking data submitted by EPE. NTG ratios and engineering adjustment factors were applied in order to use net verified impacts in the cost effectiveness calculations.

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 Energy Saver program.

3 Impact Evaluation Results

The results of the PY2017 impact evaluation are shown in Table 7 (kWh) and Table 8 (kW), with the programs evaluated in 2017 highlighted in blue. For the non-evaluated programs, the totals are based on the *ex ante* savings and net-to-gross (NTG) values from the EPE tracking data.

As noted previously, each program is required to be evaluated a minimum of once every three years. For 2017, the evaluated programs covered 67 percent of the *ex ante* kWh savings and 34 percent of the *ex ante* kW savings.

Table 7: PY2017 Savings Summary - kWh

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Small Business Comprehensive	132	2,296,883	1.0214	2,346,008	0.8233	1,931,468
SCORE Plus	227	5,157,131	0.9230	4,759,809	0.8294	3,947,786
CFL and LED	157,777	4,847,197	1.0000	4,847,197	0.6500	3,150,678
Residential Comprehensive	1,362	4,010,389	1.0000	4,010,389	0.4281	1,716,968
ENERGY STAR® New Homes	233	384,495	1.0000	384,495	0.9130	351,044
NM Energy Saver	2,314	1,023,105	1.0000	1,023,105	1.0000	1,023,105
LivingWise	3,005	608,192	1.0000	608,192	1.0000	608,192
Total		**18,327,393**		**17,979,195**		**12,729,241**

Table 8: PY2017 Savings Summary - kW

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Small Business Comprehensive	132	381	1.0136	386	0.8233	318
SCORE Plus	227	466	1.0270	478	0.8294	397
CFL and LED	157,777	602	1.0000	602	0.6500	391
Residential Comprehensive	1,362	2,449	1.0000	2,449	0.4281	1,049
ENERGY STAR® New Homes	233	186	1.0000	186	0.9130	170
NM Energy Saver	2,314	167	1.0000	167	1.0000	167
LivingWise	3,005	9	1.0000	9	1.0000	9
Total		**4,261**		**4,278**		**2,501**

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 Small Business Comprehensive and SCORE Plus Programs

3.1.1 Gross Impacts

The *ex ante* 2017 gross savings are summarized in Table 9 for the Small Business Comprehensive and SCORE Plus programs. In total, the Small Business Comprehensive program accounted for 13 percent of energy impacts in EPE's overall portfolio, while SCORE Plus accounted for 28 percent.

Table 9: Small Business Comprehensive and SCORE Plus Gross Savings Summary

Program	# of Projects	Expected Gross kWh Savings	Expected Gross kW Savings
Small Business Comprehensive	132	2,296,883	381
SCORE Plus	227	5,157,131	466

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 Small Business Comprehensive and SCORE Plus 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. In some cases, very large projects were assigned to a "certainty" stratum and were automatically added to the sample (rather than randomly assigned). This allowed for the largest projects to be included in the desk reviews and maximized the amount of savings covered in the sample for each program. 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 and Table 11 for both programs. For the Small Business Comprehensive program, the resulting sample achieved a relative precision of 90/8.5 overall, with precision ranging from 90/10 or better for the lighting and other measure groups. For the SCORE Plus program, the sample had a relative precision of 90/9 for the program, and also achieved 90/10 or better for the two measure groups.

Table 10: Small Business Comprehensive Desk Review Sample

Measure Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Lighting	1	9	69,532	625,789	27.3%	4
Lighting	2	22	31,936	702,595	30.6%	5
Lighting	3	29	17,251	500,285	21.8%	3
Lighting	4	51	7,631	389,170	16.9%	4
Other	Certainty	1	35,000	35,000	1.5%	1
Other	1	6	4,591	27,548	1.2%	2
Other	2	14	1,178	16,496	0.7%	4
Total		**132**		**2,296,883**	**100.0%**	**23**

Table 11: SCORE Plus Desk Review Sample

Measure Group	Stratum	Count	Average kWh	Total kWh Savings	% of Savings	Final Sample
Lighting	Certainty	2	467,510	935,020	18.1%	2
Lighting	1	8	102,970	823,763	16.0%	7
Lighting	2	27	44,081	1,190,192	23.1%	4
Lighting	3	59	20,692	1,220,846	23.7%	4
Lighting	4	127	5,341	678,288	13.2%	7
Other	Certainty	4	77,256	309,022	6.0%	4
Total		**227**		**5,157,131**	**100.0%**	**28**

As discussed in the *Evaluation Methods* chapter, gross realized impacts for both programs were determined by performing engineering desk reviews on the sample of projects.

For prescriptive projects, the evaluation team found multiple measures that existed in both the New Mexico TRM and the Texas TRM, both of which are referenced by EPE. In the cases where these sources are not consistent, the evaluation team reviewed both savings sources and deferred to the New Mexico TRM if the Texas TRM did not appear to offer

significantly more accuracy. Other incentivized measures existed only in the Texas TRM, and so the algorithms from the Texas TRM were reviewed for accuracy and adjusted 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. We reviewed any calculator assumptions that deviated from the New Mexico TRM to determine if the calculator value was more appropriate or accurate than the available TRM values. In certain cases, new calculations were created using values from the New Mexico TRM instead of those contained in EPE's calculators.

One custom project was included in the sample. This project quantified savings using an IPMVP Option C billing data regression analysis. For this project, we reviewed the M&V report and regression analysis spreadsheet to ensure the soundness of the analysis approach and proper accounting of the analyzed data.

A sample of projects receiving desk reviews was selected to receive an additional engineering interview. Custom projects and projects with high levels of savings were identified as candidates for these interviews. Reviewing engineers contacted selected project participants by phone and email to confirm installation of incentivized equipment and verify operational parameters integral to the calculation of estimated savings. A total of five interviews were completed, and no major issues were identified during the interviews as all equipment was confirmed to be installed and operating correctly.

Table 12 and Table 13 show the results of the desk reviews and how the resulting engineering adjustments were used to calculated realized savings. For both programs, the engineering adjusted savings were very close to the original *ex ante* values.

For the energy impacts overall, the desk reviews resulted in an engineering adjustment factor of 1.0214 for the Small Business Comprehensive program and 0.9230 for the SCORE Plus program. For the kW impacts, the engineering adjustment factor was similar at 1.0136 for Small Business Comprehensive and 1.0270 for SCORE Plus.

Table 12: PY2017 Gross kWh Impact Summary

Program	# of Projects	Expected Gross kWh Savings	Engineering Adjustment Factor	Realized Gross kWh Savings
Small Business Comprehensive	132	2,296,883	1.0214	2,346,008
SCORE Plus	227	5,157,131	0.9230	4,759,809

Table 13: PY2017 Gross kW Impact Summary

Program	# of Projects	Expected Gross kW Savings	Engineering Adjustment Factor	Realized Gross kW Savings
Small Business Comprehensive	132	381	1.0136	386
SCORE Plus	227	466	1.0270	478

For the projects that received engineering desk reviews, engineering adjustment factors that differed from 1 were predominately caused by inconsistencies between the New Mexico TRM and the Texas TRM, and usually involved prescriptive lighting or HVAC projects.

EPE's lighting calculator appears to use a mix of hours-of-use values from the New Mexico TRM and the Texas TRM, as well as averages of TRM values within building types. When projects used lighting hours-of-use that did not line up exactly with the New Mexico TRM, the evaluation team compared the value used to other values available in the New Mexico TRM. In cases where the New Mexico TRM offered more detail/accuracy (e.g., a more specific building type), the calculation was recreated using the New Mexico TRM value. In cases where the original value offered more detail/accuracy (e.g., a building type was listed in the Texas TRM but was not listed in the New Mexico TRM), the original value was used.

Two prescriptive HVAC projects calculated savings using EPE's Texas HVAC calculator that is based on the Texas TRM. However, EPE also has a New Mexico HVAC calculator based on the New Mexico TRM that was used for other prescriptive HVAC projects. The evaluation team compared the prescriptive HVAC sections of the New Mexico TRM and the Texas TRM and did not find that the Texas TRM offered significantly improved accuracy compared to the New Mexico TRM. Therefore, we created new savings calculations for these two projects using the prescriptive HVAC algorithms and assumptions from the New Mexico TRM.

Six SCORE Plus projects reviewed by the evaluation team were portions of a citywide LED streetlight upgrade. As part of the analysis to determine savings for this upgrade, EPE performed pre-retrofit light logging of a random sample of streetlights to determine custom lighting hours of operation. However, EPE claimed savings based on the TRM value for exterior lighting hours, taking a conservative approach, as the custom hours were higher than the TRM value. EPE implementation staff provided the evaluation team with the logger data and analysis performed to determine the custom lighting hours. Upon review of this data, the evaluation team made the following modifications to the analysis:

- The logger data analysis calculates the minutes between astronomical sunset and the time the lights turn on, and between when the lights turn off and astronomical sunrise. Across multiple days, all the formulas in the analysis compared varied sunrise/sunset times to the logger on/off timestamps for the same single day. The evaluation team changed the formulas to reference the respective on/off timestamps for each day.
- In one round of analysis, logger timestamps in Mountain Daylight Time (MDT) were being compared to astronomical sunrise and sunset timestamps in Mountain Standard Time (MST). The evaluation team changed the astronomical timestamps to MDT values in order to be consistent with the logger data.
- The analysis was performed for one week of data at each location. However, logger data was available for additional days. The evaluation team extended the analysis to include data from these additional days.
- The arithmetic calculating the average number of minutes before sunrise that the lights turn off between the two rounds of logged data was incorrect. The evaluation team corrected the analysis to properly average the results from the two rounds of analysis.

A summary of the modifications made by the evaluation team and the updated analysis were provided to EPE implementation staff. The modifications resulted in an estimate of 4,235.72 lighting hours. This is higher than the TRM value of 4,100 hours, but lower than the original calculated custom value of 4,772.57 hours. The verified savings for these six projects were calculated using the lighting hours value calculated by the evaluation team.

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

3.1.2 Net Impacts

Net impacts for the Small Business Comprehensive and SCORE Plus programs were developed using the self-report method described in the *Evaluation Methods* chapter and based on participant phone survey data. The resulting NTG ratio for the Small Business

Comprehensive program is 0.8233, and for the SCORE Plus program, the NTG ratio is similar at 0.8294.

Table 14 and Table 15 summarize the PY2017 net impacts calculations for both programs.

Table 14: PY2017 Net kWh Impact Summary

Program	# of Projects	Realized Gross kWh Savings	NTG Ratio	Realized Net kWh Savings
Small Business Comprehensive	132	2,346,008	0.8233	1,931,468
SCORE Plus	227	4,759,809	0.8294	3,947,786

Table 15: PY2017 Net kW Impact Summary

Program	# of Projects	Realized Gross kW Savings	NTG Ratio	Realized Net kW Savings
Small Business Comprehensive	132	386	0.8233	318
SCORE Plus	227	478	0.8294	397

3.2 CFL and LED Program

The residential lighting market in the U.S. has experienced significant change over the past decade as the Energy Independence and Security Act of 2007 (EISA) has led to the phase-out of (energy inefficient) incandescent bulbs and, more recently, as consumers have become more aware of LEDs and the purchase price of LEDs has become increasingly affordable. EPE's CFL and LED program promotes adoption of CFL and LED lighting by providing incentives to customers to replace less efficient light bulbs with CFL or LED bulbs through in-store rebates at participating retailers in EPE's service territory.[8]

While 22 retail locations participated in the CFL and LED program in PY2017, 88 percent of the bulbs provided through the CFL and LED program were sold at just five retail locations.[9] Nearly 60 percent of bulbs were sold at a big box or warehouse club store and another 30 percent were sold at a hardware or home center retailer. Other retailers and

[8] CFLs accounted for about 0.2 percent of light bulbs rebated through EPE's CFL and LED program.
[9] The PY2017 CFL and LED program operated from January 2017 to December 2017, but some bulbs sold between May 2016 and December 2016 were included in the PY2017 reporting. These bulbs are included in the totals and analysis described in this section.

bulb giveaways each accounted for about 5 percent of bulbs provided through the program.

Table 16: Distribution of Bulbs Through the EPE CFL and LED Program, 2017

Type of Retailer	Bulbs Sold or Given Away	Percentage of Bulbs
Big Box / Warehouse Club	94,504	59.8%
Hardware / Home Center	47,922	30.3%
Other Retailers	7,672	4.9%
Giveaways	8,000	5.1%
Total	**158,098**	**100.0%**

Note: Bulb sales by individual retailers have been aggregated to maintain confidentiality. Bulbs with negative quantities in the tracking data are not accounted for in this table.

Table 17 shows summary statistics for the price per bulb before rebate and the rebate amounts.[10] On average, bulbs sold through EPE's CFL and LED program had a pre-rebate price of $3.07 and a median price of $2.48. Actual prices ranged from $1.97 to $12.99 per bulb. Rebates provided to consumers through the CFL and LED program ranged from $0.50 to $5.00 with a mean and median rebate of $1.53 and $1.33, respectively. These rebates cut the price paid per bulb by between 11 percent and 70 percent of the pre-rebate bulb price. On average, the rebate reduced the price by 54 percent.

Table 17: Summary Statistics on Bulb Prices and Rebates, CFL and LED Program*

Statistic	Price Per Bulb Pre-Rebate	Rebate Per Bulb	Rebate as % of Bulb Price
Mean	$3.07	$1.53	54%
Median	$2.48	$1.33	56%
Minimum	$1.97	$0.50	11%
Maximum	$12.99	$5.00	70%
25th Percentile	$1.99	$1.25	50%
75th Percentile	$3.49	$1.70	63%

* Summary statistics weighted by bulb sales. Excludes bulbs distributed through giveaways.

[10] Bulb price was not included in the program tracking data provided by EPE, however it was provided in the retailer contract documents. The evaluation team matched bulb prices from the retailer contracts to the tracking database for the most popular bulbs consisting of approximately 85 percent of bulb sales.

3.2.1 Gross Impacts

For the CFL and LED program, the gross impact analysis consisted of reviewing the per-unit savings values used for all the individual lighting measures covered by the program and then comparing these values with those in the New Mexico TRM for residential lighting. For each record, we replicated savings based on the baseline wattage values and hours of use. The evaluation team found no incidents of deviation from the TRM values. We found that the replicated savings matched the *ex ante* tracking data savings within 0.01 percent. Therefore, we are not recommending any changes to the *ex ante* savings values, and the engineering adjustment factor is equal to 1.00.

3.2.2 Net Impacts

The evaluation team utilized an elasticity model to determine net impacts for the CFL and LED program. As discussed in the *Evaluation Methods* chapter, the elasticity model estimates the relationship between price and the number of bulbs sold. Once this relationship is established, it can be used to estimate the share of total bulbs sold that should be attributed to the price reductions offered by the program including those bulbs distributed to customers through giveaways.

The quantity of bulbs sold is inversely related to price—as the price of bulbs increases, the number of bulbs sold decreases. As Table 18 shows, 83 percent of bulbs sold through EPE's CFL and LED program were $2.00 or less, and another 12 percent were between $2.01 and $4.00. Only about 5 percent of bulbs sold through the program had a rebated cost greater than $4.00. This trend was explored in more detail using the elasticity model, described below.

Table 18: Bulb Sales by Rebated Price of Bulb*

Rebated Price of Bulb	Average Pre-Rebate Price Per Bulb	Average Rebated Price Per Bulb	Proportion of Bulbs Sold
$2.00 or less	$2.49	$1.07	83.3%
$2.01 - $4.00	$4.72	$3.10	12.0%
$4.01 - $6.00	$7.97	$4.89	2.9%
$6.01 - $8.00	$10.11	$6.95	1.3%
$8.01 - $10.00	$12.50	$9.38	0.5%
More than $10.00	$12.49	$10.49	0.03%

* Data includes only those bulbs sold and rebated through a retail outlet. Bulb price was not included with the program tracking data provided by EPE. Evergreen matched the bulb prices from the retailer contracts for the most popular bulbs consisting of approximately 85 percent of bulb sales.

To develop the elasticity model, the evaluation team analyzed sales data for EPE's CFL and LED program for the 2017 program year to understand the impact that direct (in-store) rebates have on the sale of residential LED lighting.[11] Since a customer receives the rebate at the time of purchase (as opposed to a mail-in rebate or a rebate on a future purchase), the rebate acts to immediately lower the purchase price of the LED lighting.

To estimate the impact that price has on the sale of LED bulbs, the evaluation team specified and estimated a Poisson regression model. The Poisson model is preferable to standard ordinary least squares (OLS) regression because the response variable (i.e., bulb sales) only takes on non-negative (or positive) values. The OLS regression model is generally not an appropriate choice because it fails to account for the limited possible values of the response variable.[12] While there are other models that account for limitations of count data (e.g. negative binomial), the Poisson model is the most often-used approach.

The generalized log-linear Poisson model is specified as

$$Ln(\mu_i) = x_i'\beta$$

Where, μ_i is the mean of the individual bulb sales across retailers and sales periods. The empirical model the evaluation team estimated for the EPE CFL and LED program is specified as:

$$Ln(Bulb\ Sales_{kit}) = \beta_0 + \beta_1(Rebated\ Price_{kit}) + \beta_k(Bulb\ Char_k)$$

Where,

$Ln(Bulb\ Sales_{kit})$ is the natural logarithm of the average number of bulb type *k* sold per day by retailer *i* during time period *t*.

$Rebated\ Price_{kit}$ is the price after rebate for bulb type *k* sold by retailer *i* in time period *t*.

$Bulb\ Char_k$ is an array of characteristics of the LED bulb, such as lumens and watts.

We estimated separate models for standard and specialty LED bulbs and for warehouse and non-warehouse retailers (four models in total). Our *a priori* assumption was that consumers are more sensitive to price when purchasing standard LED bulbs, which are applicable to a greater range of residential lighting fixtures and for which consumers may have a greater number of alternative lighting options (e.g. efficient incandescent, halogen, CFL). In comparison, as the name implies, there is a wide range of specialty LED bulbs

[11] The evaluation team conducted the NTG analysis on LED bulbs only.
[12] The evaluation team did examine two alternative modeling approaches: fixed-effects and random-effects Poisson models. Results varied little between these models and the (standard) Poisson model.

available in the market, but not every specialty LED bulb is demanded by every consumer and, therefore, only those consumers who have a use for a specific specialty LED bulb will show any sensitivity to price.

We also estimated separate models for warehouse and non-warehouse retailers.[13] Warehouse and non-warehouse retailers differed with respect to average (before rebate) price per bulb—$2.85 for warehouse retailers versus $3.12 for non-warehouse retailers (9 percent higher price per bulb sold through non-warehouse retailers). Warehouse retailers also typically sell bulbs in larger packs than non-warehouse retailers, but carry a narrower selection of bulbs.

Table 19 shows the estimates of price elasticity of demand for each of the four regression models and for the CFL and LED program as a whole. The price elasticity of demand is a measure of the change in the demand for a good or service when the price of that good or service increases by a small amount (generally 1.0 percent). Price elasticities are assumed to be negative (i.e., as price goes up, demand for the good or service goes down); it is the magnitude of the elasticity (the "responsiveness") that is of primary interest.[14]

As Table 19 shows, the evaluation team found that the demand for LED bulbs is elastic for both standard and specialty bulbs sold through non-warehouse retailers (price elasticity of demand of -1.45 and -1.23, respectively). The evaluation team found that the demand for standard LED bulbs from warehouse retailers is relatively inelastic (estimated elasticity of -0.57) and that demand for specialty LED bulbs from warehouse retailers is price elastic (estimated elasticity of -1.49). Overall, when weighting by LED bulb sales from all retailers, the evaluation team estimated the price elasticity of demand for LED bulbs to be -1.33. Thus, a 10 percent decrease in the price of LED bulbs will result in a 13.3 percent increase in demand for LED bulbs, holding all else constant.

[13] Warehouse retailers include such stores as Sam's Club, while all other retailers were categorized as non-warehouse.

[14] If the price elasticity for a good is greater than 1.0 in absolute value, demand for that good is referred to as elastic (more responsive). Similarly, when the price elasticity is less than 1.0 in absolute value, demand for that product is referred to as inelastic. When the price elasticity of demand is equal to 1.0, demand for that product is referred to as unit elastic.

Table 19: Estimates of Price Elasticity of Demand and NTG Ratio

LED Bulb Type and Retailer	Elasticity at Mean Rebated Price	NTG Ratio at Mean Rebated Price
Standard Non-Warehouse	-1.45	0.69
Standard Warehouse	-0.57	0.43
Specialty Non-Warehouse	-1.23	0.47
Specialty Warehouse	-1.49	0.69
Giveaway and Dollar Stores*	N/A	0.90
CFL and LED Program	**-1.33**	**0.65**

* A separate NTG ratio was calculated for giveaways and bulbs sold by dollar stores based on the modeling results for standard non-warehouse and standard warehouse LED bulbs.

Table 19 also shows estimates of the NTG ratio for EPE's CFL and LED program using the elasticity model. The estimates of the NTG ratio vary across the four combinations of bulb type and retailer. The highest estimated NTG ratios (excluding "Giveaway and Dollar Stores") were for standard bulbs sold at non-warehouse retailers (0.69) and specialty bulbs sold at warehouse retailers (0.69). The lowest estimated NTG ratios were for standard bulbs sold at warehouse retailers (0.43) and specialty bulbs sold at non-warehouse retailers (0.47).

To develop the estimated NTG ratio of bulbs distributed through giveaways or sold at a dollar stores, the evaluation team computed the weighted average NTG ratio for standard non-warehouse and standard warehouse LED bulbs assuming a rebated price of $0.01.[15] The evaluation team believes the estimated NTG ratio of 0.90 is reasonable and indicates that approximately 10 percent of recipients of the giveaway LED bulbs and customers of bulbs purchased at dollar stores would have purchased the bulbs had they not received them through the program. For the EPE CFL and LED program overall, the evaluation team estimated the NTG ratio to be 0.65.

Figure 2 shows how expected rates of free ridership and NTG ratios vary by rebated bulb for each of the four combinations of bulb type and retailer.[16] As the rebated price of LEDs drop, the proportion of purchasers that free ride decreases and the NTG ratio increases.

[15] While LED bulbs sold at dollar stores were not given away, they were not sold at these locations prior to the CFL and LED program; it is the evaluation team's understanding that the dollar stores are making LED bulbs available to customers that would not otherwise have access to them. Because of this, the evaluation team believes it is appropriate for the 2017 program to assume the same NTG ratio as if the LED bulbs were given away.

[16] Excludes bulbs distributed through giveaways because there is no price sensitivity to measure.

The trajectories differ for each combination of bulb type and retailer because the mix of bulb types and prices differ. In addition, it is likely that the characteristics of buyers differ between those who shop at warehouse and non-warehouse retailers.

It is important to note that the free ridership chart (upper panel of Figure 2) does not show the expected number of bulbs sold by rebated price, but rather the proportion of bulbs sold by rebated price that would have sold even without the rebate. As the rebated price decreases (moving from right to left along the horizontal axis), more and more consumers—who otherwise would not purchase LED bulbs—are motivated to purchase bulbs, resulting in a decreasing proportion of purchasers that are free riders.

The purpose of the rebates is to encourage those consumers who would not otherwise purchase an LED to make the purchase. However, since the rebate is available to all purchasers of the LED bulbs, even those who would have purchased the bulbs without the rebate receive the rebate. The larger the rebate, the greater the number of consumers who will purchase LED bulbs, leading to a lower rate of free ridership and a higher NTG ratio (lower panel of Figure 2).

Figure 2: Estimated Free Ridership and NTG Ratio by LED Bulb Type and Retailer

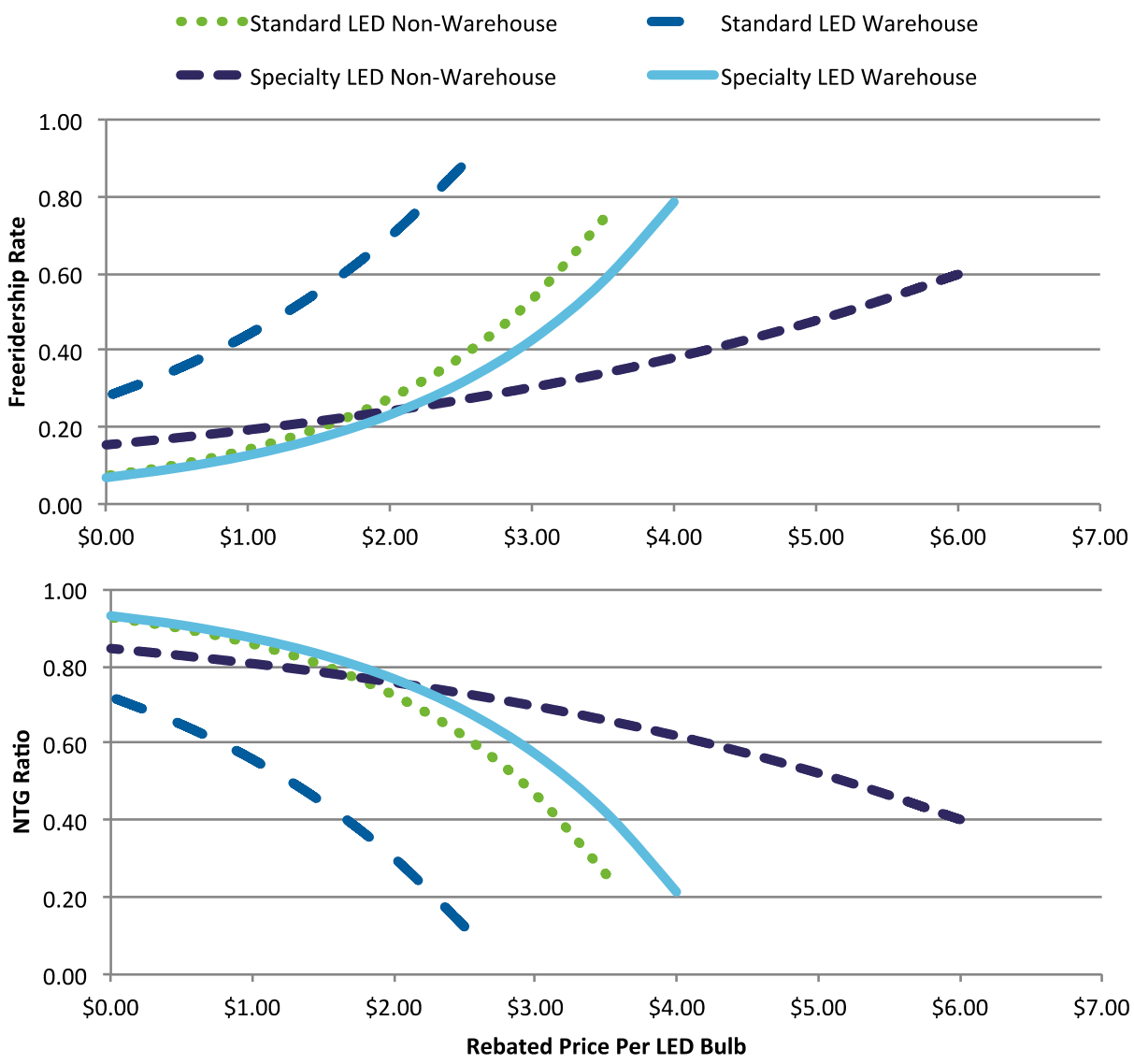


Table 20 summarizes the final gross and net impacts for the CFL and LED program using the NTG ratio derived from the elasticity model. Using the overall NTG ratio of 0.65, the PY2017 net realized impacts for the CFL and LED program are 3,150,678 kWh and 391 kW.

Table 20: CFL and LED PY2017 Impact Summary

CFL and LED Program	# of Bulbs	Expected Gross Savings	Engineering Adjustment Factor	Realized Gross Savings	NTG Ratio	Realized Net Savings
kWh Savings	157,777	4,847,197	1.0000	4,847,197	0.6500	3,150,678
kW Savings	157,777	602	1.0000	602	0.6500	391

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.[17] The evaluation team conducted these tests in a manner consistent with the California Energy Efficiency Policy Manual.[18]

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 21.

Table 21: 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 22. All programs except SCORE Plus had a UCT of greater than 1.00, and the portfolio overall was found to have a UCT ratio of 1.50.

[17] The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
[18] 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

Table 22: PY2017 Cost Effectiveness

Program	Utility Cost Test (UCT)
Small Business Comprehensive	1.84
SCORE Plus	0.98
CFL and LED	2.70
Residential Comprehensive	2.16
ENERGY STAR® New Homes	1.16
NM Energy Saver	1.17
LivingWise	1.06
Overall Portfolio	**1.50**

5 Process Evaluation Results

This chapter summarizes key methods and findings from the PY2017 process evaluation of the EPE Small Business Comprehensive and SCORE Plus programs. These findings, along with findings from the impact evaluation, informed the conclusions and recommendations presented in the following chapter.

5.1 Small Business Comprehensive Participant Surveys

As part of the evaluation, the evaluation team conducted telephone surveys with representatives from 50 participating companies that received rebates through the EPE Small Business Comprehensive program. These surveys were completed in March 2018 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 Small Business Comprehensive participant projects, which allowed us to select a sample for surveys. The evaluation team randomly selected and recruited program participants from the entire population of Small Business Comprehensive participants that had valid contact information.

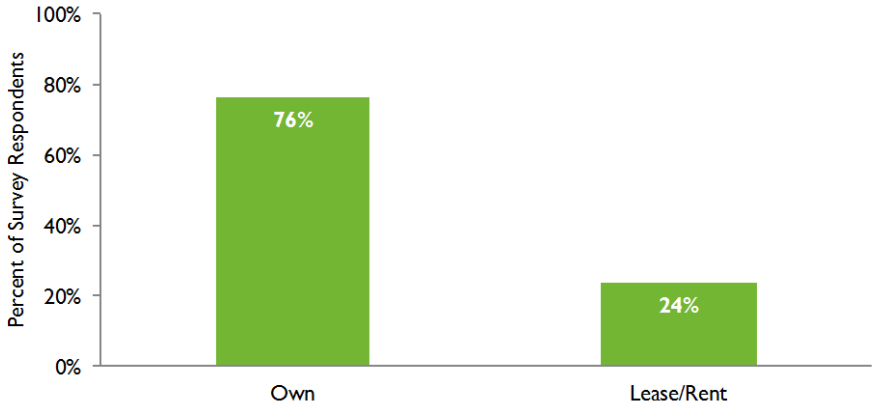
The following subchapters report results on company demographics, sources of program awareness, motivations for participation, and program satisfaction.

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.

5.1.1 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 76 percent of participants own the building where the measure was installed compared to 24 percent of respondents who rent.

Figure 3: Participant Own or Rent (n=50)



The following two figures summarize the survey respondents' building size and number of employees. Consistent with program design, Figure 4 and Figure 5 both show that the majority of participant firms are smaller businesses, with 56 percent of firms occupying buildings of less than 10,000 square feet. Additionally, 66 percent of participants reported having less than 20 full-time employees; these firms represent multiple sectors including automotive, office/retail, light industrial, and restaurants.

Figure 4: Participant Building Size (n=47)

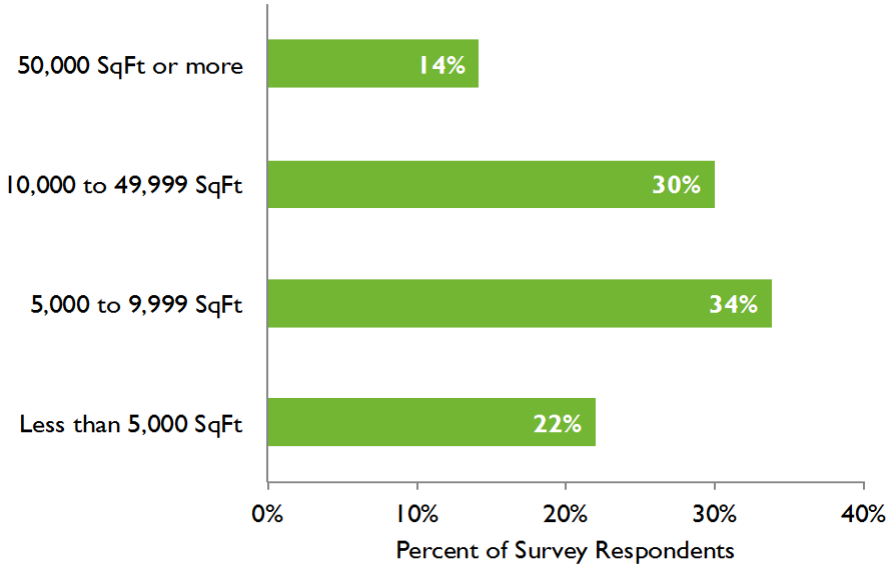
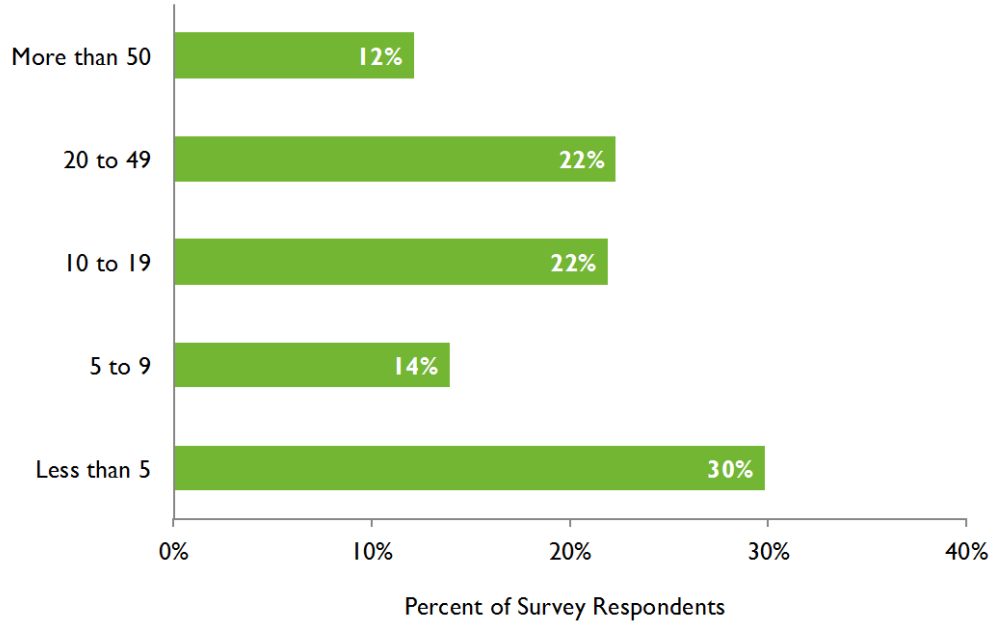
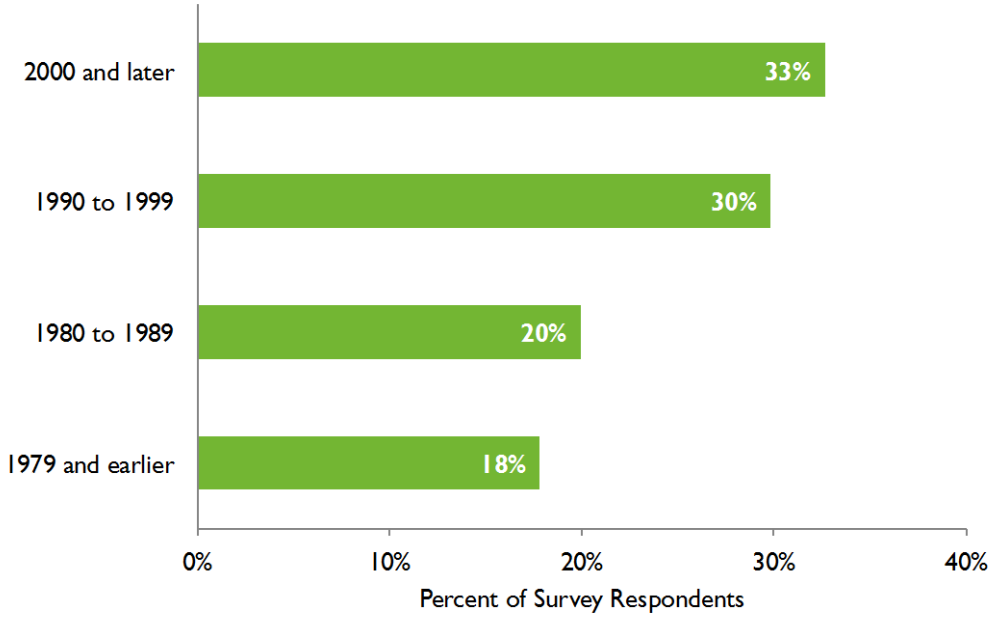


Figure 5: Participant Number of Employees (n=48)



Additionally, Figure 6 shows that the majority of participants' buildings were built before the year 2000, with 30 percent being built between 1990 and 1999 and 38 percent built before 1990. This suggests that the program is doing a good job at targeting older buildings where the potential for significant energy savings is the greatest.

Figure 6: Participant Building Age (n=47)



5.1.2 Sources of Awareness

Small Business 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, 52 percent of participants learned about the program offerings through contractors and/or distributors. Additionally, 28 percent of participants also learned about the program offerings through word of mouth (e.g., a business associate or co-worker).

For those 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. As shown in Figure 8, respondents most frequently indicated that contractors and/or distributors were the most useful source of awareness. Additionally, EPE marketing and outreach was reported as being a useful source of awareness, with 42 percent of participants mentioning it. 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=48)

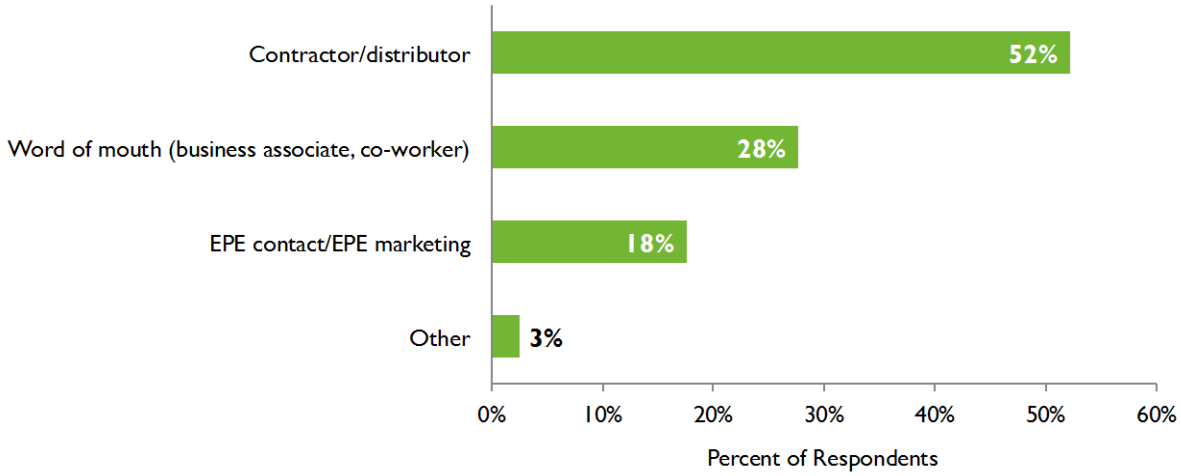
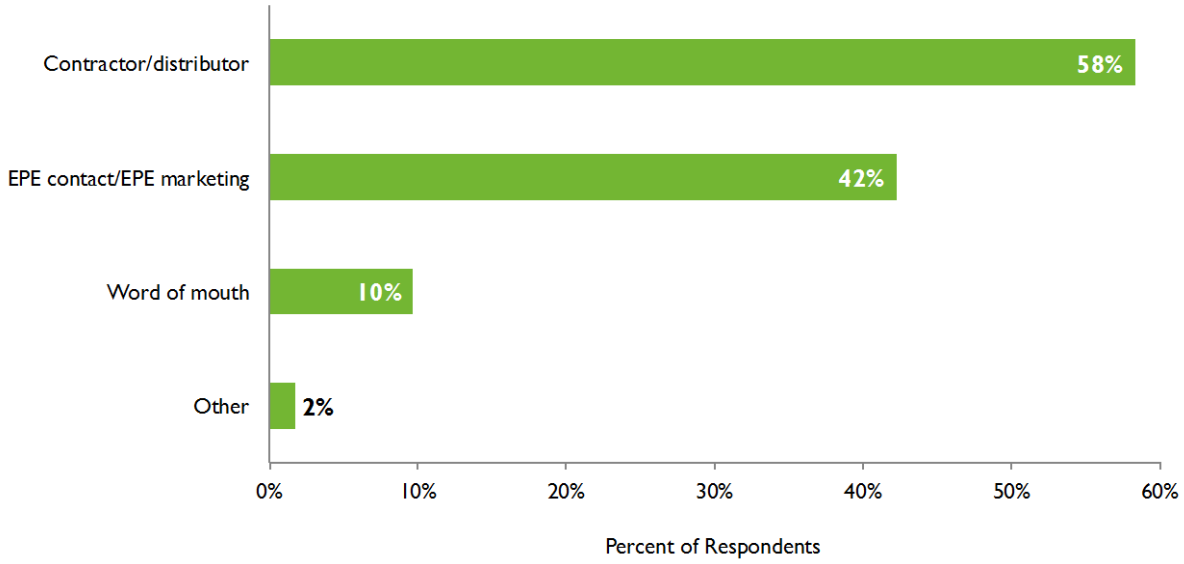


Figure 8: Most Useful Source of Awareness (n=17)



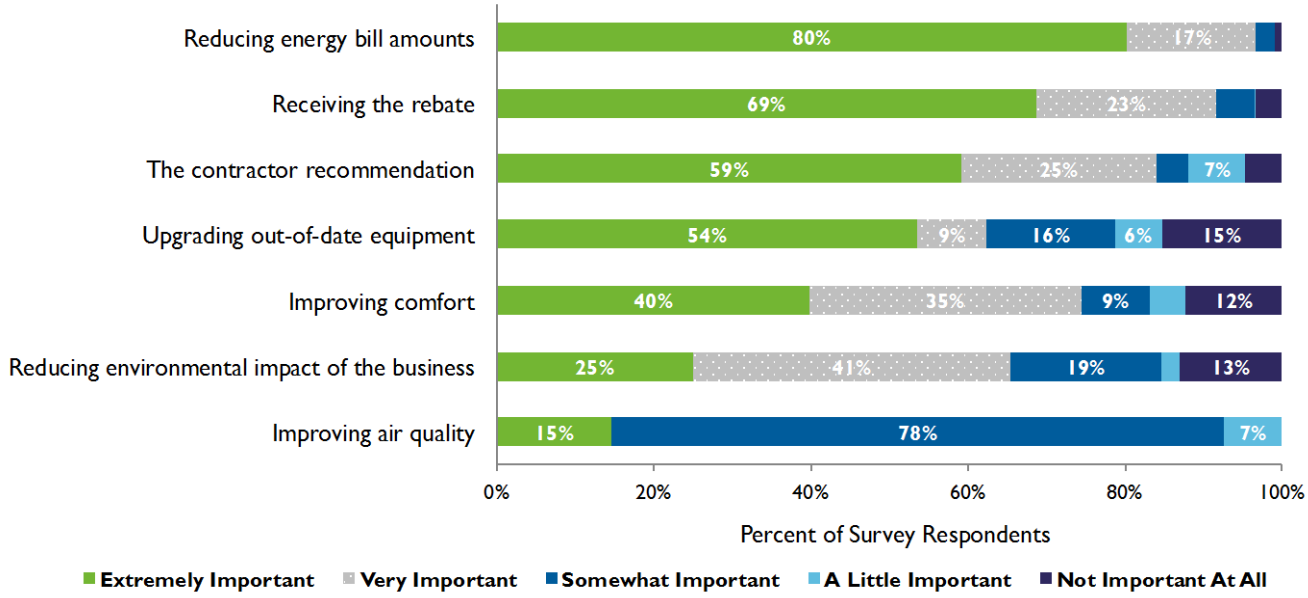
Note: Percentages in this figure sum to over 100 percent due to one respondent reporting that the contractor and EPE contact were equally useful in the decision to participate.

5.1.3 Motivations for Participation

Figure 9 shows the level of importance placed on a variety of factors that might be influencing customers to participate in the Small Business Comprehensive program.

The money that participants save on their energy bill was the most influential factor, with 80 percent of participants reporting that it was extremely important in their decision to participate in the program. Other factors that participants reported as being important included receiving the rebate, the contractor recommendation, and upgrading out-of-date equipment. Interestingly, improving air quality was the least important (but still important) factor in participants' decisions to participate in the Small Business Comprehensive program, with 15 percent saying it was extremely important and 85 percent saying it was either somewhat or a little important in their decision to participate.

Figure 9: Motivations for Participation (n=50)



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.[19] As shown in Figure 10, the majority of participants rated the dollar amount of the rebate, the contractor who performed the work, the endorsement or recommendation by a contractor, the technical assistance received from EPE staff, and the endorsement or recommendation by a vendor or distributor as very or extremely important (a score of 8 to 10) in their decision to determine how energy efficient their equipment would be. Interestingly, the information from EPE marketing and/or informational materials was the least important factor in the participants' decision to determine how energy efficient their project would be, with 26 percent saying it was very or extremely important and the majority reporting it was a little or not at all important (a score of 4 to 5 and 0 to 3, respectively) in their decision.

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

Figure 10: Importance of Program Factors (n=46)

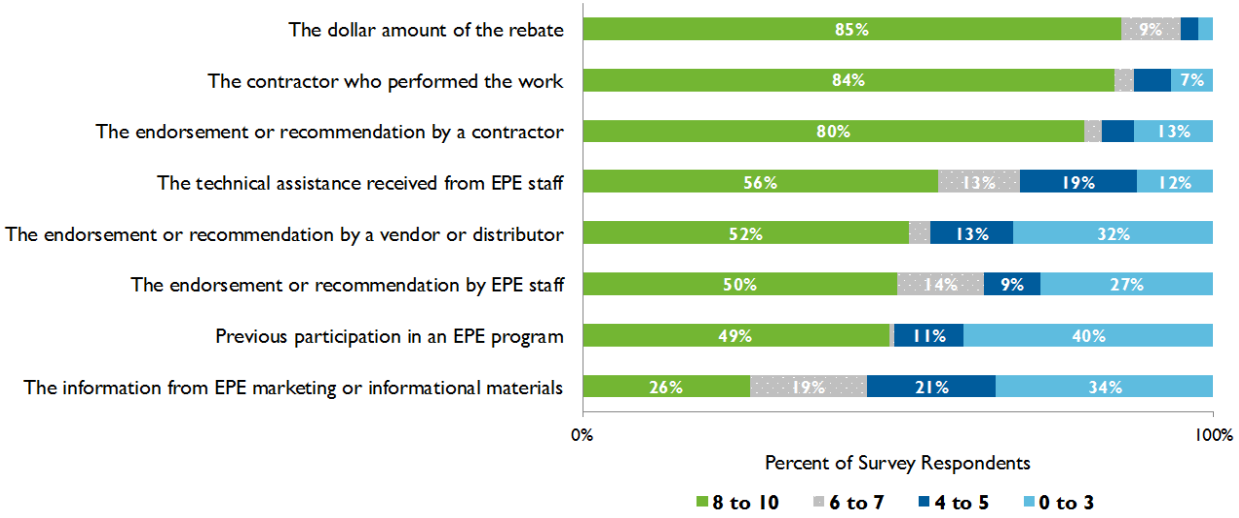
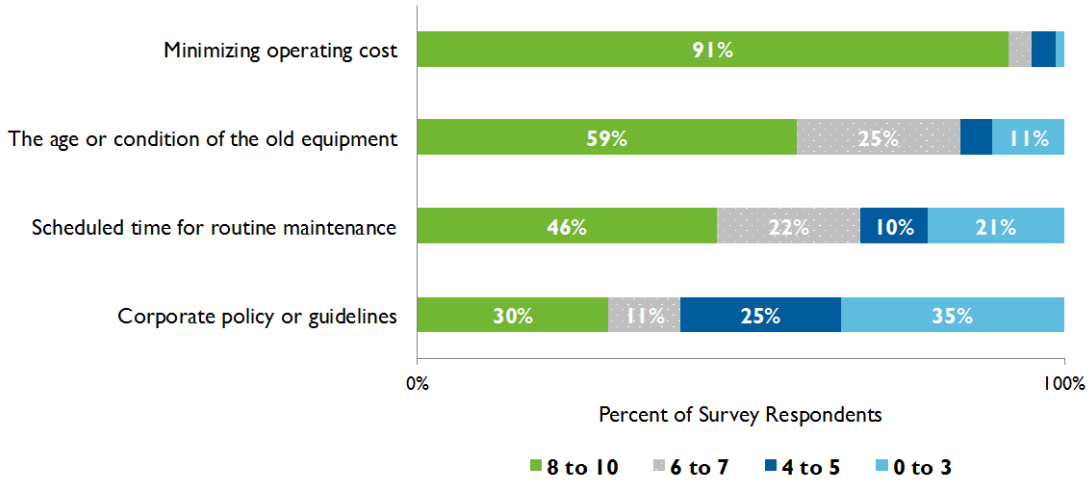


Figure 11 shows that the majority of Small Business Comprehensive participants rated minimizing operating costs and the age or condition of the old equipment as very to extremely important (a score of 8 to 10) on the decision to determine how energy efficient their project would be. Minimizing operating costs was the most influential non-program factor in the decision regarding efficiency level of the equipment. Corporate policy and/or guidelines was reported as less influential (but still relatively influential) than other non-program factors, with 71 percent reporting that it was somewhat important (6 to 7), a little important (4 to 5), or not at all important (0 to 3).

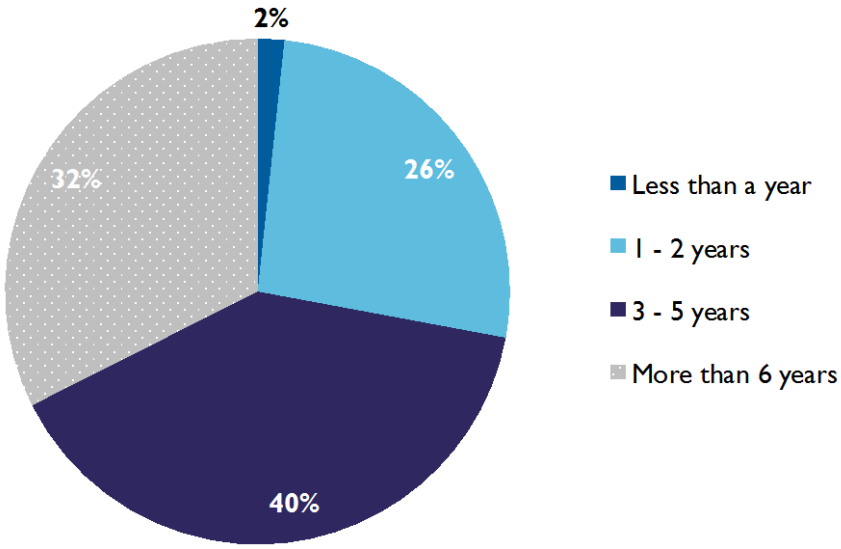
Figure 11: Importance of Non-Program Factors (n=50)



To get a sense of the condition of the existing equipment, respondents were asked approximately how much longer would the equipment have lasted if it had not been

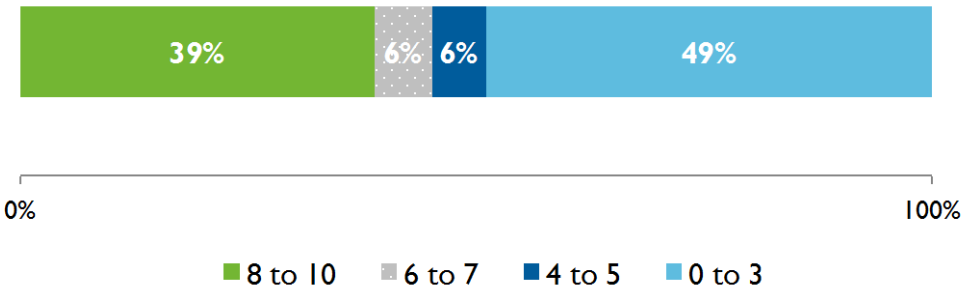
replaced. Figure 12 shows that the majority of surveyed respondents believed that their equipment would have lasted more than three years. This suggests that the program is doing a good job of targeting customers with functioning equipment, rather than those whose equipment is not working and would need to be replaced anyway (i.e., potential free riders).

Figure 12: Equipment Remaining Life (n=34)



Additionally, Small Business Comprehensive participants that installed lighting were asked what the likelihood is that they would have installed the same quantity of lighting if the rebate were not available. Figure 13 shows that the majority of surveyed respondents reported that it was a little likely (a score of 4 to 5) or not at all likely (0 to 3) that they would have installed the same quantity of lighting if the rebate were not available. This indicates that the program is doing a good job of spurring customers to do more than they would have if the rebate were not available.

Figure 13: Likelihood of Same Quantity of Lighting Installed (n=39)



5.1.4 Participant Satisfaction

The participants evaluated their satisfaction with various components of the Small Business 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

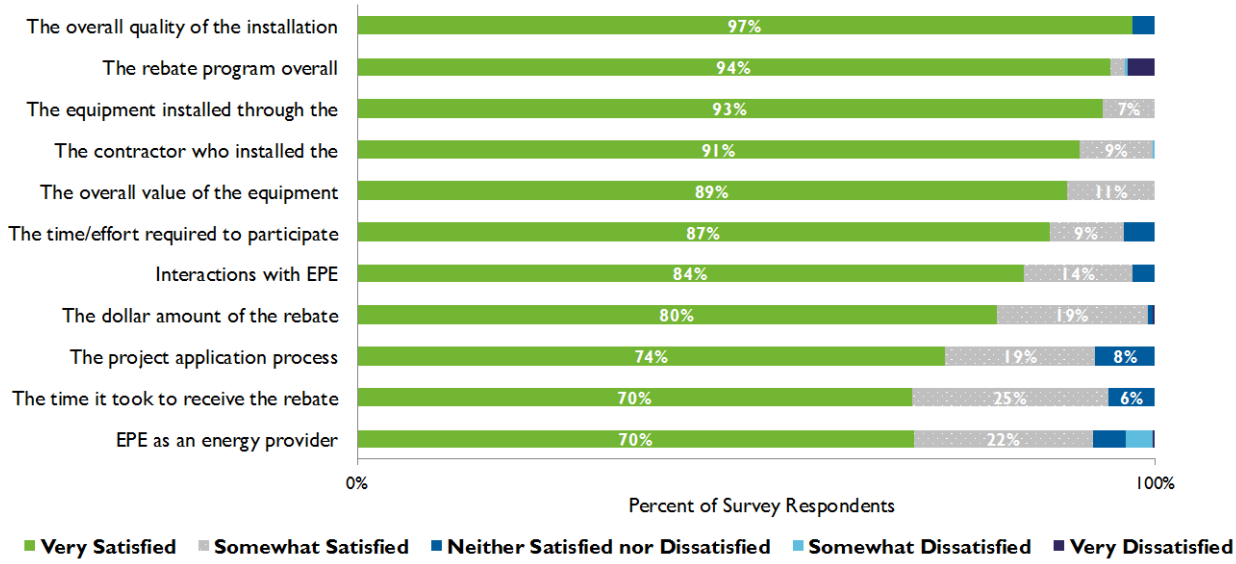
Figure 14 summarizes the satisfaction levels of the Small Business Comprehensive program participants.

Overall, surveyed program participants expressed high levels of satisfaction with the Small Business Comprehensive program components. As shown in Figure 14, the majority of participants reported that they were "very satisfied" with all of the program

components. Ninety-seven percent reported being "very satisfied" with the overall quality of the equipment installation, and 94 percent were "very satisfied" with the program overall. EPE as an energy provider received the lowest satisfaction rating from participants (but they were still relatively satisfied), with 22 percent reporting they were "somewhat satisfied" and 8 percent mentioning they were "neither satisfied nor dissatisfied," "somewhat dissatisfied," or "very dissatisfied."

Some of the justifications participants reported for their low satisfaction ratings were that "I was quoted a higher rebate amount than I received," "I did not receive the rebate," and "the customer service was not great."

Figure 14: Participant Program Satisfaction (n=50)



5.2 SCORE Plus Program Participant Interviews

The evaluation team completed six in-depth interviews with 2017 EPE SCORE Plus program participants. The interviewees represented a variety of completed projects including both retrofit and new construction as well as lighting and non-lighting projects. Overall, the interviewees represented projects that accounted for 78 percent of 2017 program kWh savings, including the three largest projects.

The interviews were completed in March and April of 2018 and focused on the following topics:

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

- Program satisfaction.

5.2.1 Project Background

While the majority of participants had completed only one project through the SCORE Plus program, two of the participants completed more than one project, including one participant with experience across multiple completed projects within a school district and one participant with experience across several city street lighting projects. Participants had varying levels of interaction with the SCORE Plus program directly; however, all six were familiar with the recorded project and played a significant role in their business's participation with the program. Interviewees included building managers (n=2), executive directors (n=2), an administrator (n=1), and a city sustainability officer (n=1).

The types of projects varied across the participants both in terms of business types and installed measures. For example, business types included a municipality, a school district, a church, an office building, a museum, and an assisted living facility. All six participants completed some type of lighting measure in their SCORE Plus projects—including street lighting and interior LED lighting replacements—while one of the six also included HVAC measures as part of their new construction school campus project. Five of the six participants stated they used one or more contractors and electricians to complete their projects through the SCORE Plus program, while one participant noted they completed the LED direct install replacements in-house.

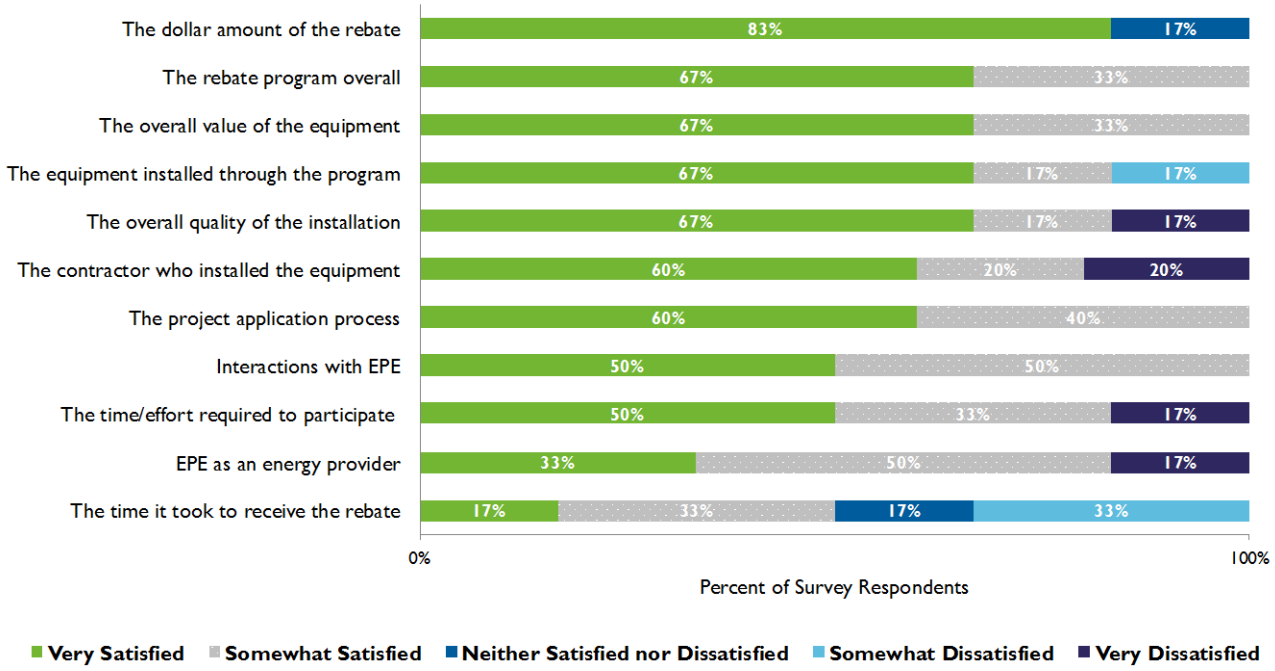
5.2.2 Program Satisfaction

SCORE Plus interview participants were asked a series of questions to quantify their level of satisfaction with various components of the program using a scale of 1 to 5, where 1 meant very dissatisfied and 5 meant 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 15 below, participants expressed a high level of satisfaction across the majority of program components, especially with the SCORE Plus program overall (mean score of 4.7), the dollar amount of the rebate (4.7), and the overall value of the equipment they received for the price they paid (4.7). Participants were less satisfied with EPE as an energy provider (3.8) and the amount of time it took to receive their rebate (3.8), including two participants that said they were either "dissatisfied" or "completely dissatisfied" with those specific program components.

Figure 15: SCORE Plus Participant Satisfaction (n=6)



Given the relatively high level of satisfaction, participants did not share many direct suggestions for improving the SCORE Plus program. However, two participants noted that trying to identify solutions for expediting the rebate process through the SCORE Plus program could help improve their satisfaction with future projects. Specifically, one participant noted that their timeline and ability to participate was impacted by the program's decision to prioritize a significantly larger lighting project:

> *The only thing I have is, I know that when we were trying to get into the program, EPE said they were running low on funding. The city, they went through the program too and the city has way more lighting than we do so by the time [EPE] got to us, they were out of funding and we had to wait a bit. Maybe capping [the city] would be great so that little businesses have opportunities to participate.*

Additionally, two participants added that it would be helpful for EPE to expand the SCORE Plus program to better accommodate potential HVAC projects. While the program does currently incentivize energy efficient HVAC equipment, one participant noted that the current incentive levels may not be influential enough for their large-scale HVAC projects:

> *The rebate program for AC and heating units is less than adequate. I asked for some quotes on putting replacement units in on our older equipment and the rebate was pretty low, so we're not getting help there. I like the lighting but HVAC was not substantial enough.*

5.2.3 Program Influence

The evaluation team asked SCORE Plus interview participants a series of questions about how influential various factors—both internal to the program and independent of EPE—were in their decision to install energy efficient equipment in an effort to gauge the level of influence the program had on the efficiency level of their completed projects. 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, three of the six interviewees noted that the program factors played a more significant role in their decision to upgrade their efficiency than the non-program factors did, including one interviewee who noted explicitly that no project would have resulted without the program's influence. All three of these interviewees added that it would have been "unlikely" to "extremely unlikely" that they would have completed the same type of energy efficiency upgrades without the program being available. Additionally, all three of these interviewees suggested that without the program, they would not have completed a similar type of upgrade for another three years or more in the future, highlighting that the rebate was a key factor in their decision to complete their project in 2017.

Conversely, the other three interviewees said that the non-program factors were more influential than the program factors given the scope of their projects. As a result, these three interviewees said they would have completed the exact same energy efficiency upgrade even if the SCORE Plus program did not exist. Generally though, five of the six participants said that the rebate available from EPE was an important factor in their

decision-making process and played at least some role in completing an energy efficient upgrade.

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 evaluation component (impact evaluation, cost effectiveness, and process evaluation) and program.

6.1 Impact Evaluation

Impact evaluation activities for the 2017 programs included engineering desk reviews for a sample of the projects from the Small Business Comprehensive and SCORE Plus programs. In addition, the evaluation team conducted a deemed savings review for the CFL and LED program, and net impacts for this program were estimated with an elasticity model using program tracking data of bulb sales.

6.1.1 Small Business Comprehensive and SCORE Plus Programs

For the Small Business Comprehensive program desk reviews, an engineering adjustment factor of 1.0214 was found for kWh savings and 1.0136 was found for kW savings. For the SCORE Plus desk reviews, an engineering adjustment factor of 0.9230 was found for kWh savings and 1.0270 was found for kW savings. For both programs, the primary reasons that engineering adjustment factors varied from 1 were differences in hours-of-use for lighting calculations and two prescriptive HVAC projects that utilized assumptions from the Texas Technical Review Manual (TRM), which did not appear to provide any additional accuracy beyond the New Mexico TRM that was used for other prescriptive HVAC projects.

Specific findings and recommendations for the Small Business Comprehensive and SCORE Plus programs are listed below:

- For multiple measures, EPE references both the New Mexico TRM and the Texas TRM. To calculate savings for some of these measures, EPE used values from the Texas TRM instead of the New Mexico TRM. This is acceptable in situations where the Texas TRM offers more detail or accuracy. However, in situations where the New Mexico TRM offers the same or more detail or accuracy than the Texas TRM, the New Mexico TRM should be used.
    - **Recommendation 1:** Defer to the New Mexico TRM over the Texas TRM in situations where the Texas TRM does not clearly offer greater detail or accuracy.

- **Recommendation 2:** If the Texas TRM is used instead of the New Mexico TRM, provide justification for the TRM selection (e.g. building type is not listed in the New Mexico TRM).

- The EPE Lighting Survey Form (LSF) includes whole-building baseline lighting power densities (LPDs) for new construction. The functionality and precision of the LSF would be increased if users also had the option to reference space-by-space baseline LPDs, assigning different LPDs to different spaces within the building.

    - **Recommendation 3:** Build space-by-space baseline LPDs into the LSF.

- The application for window treatment incentives does not ask customers for the efficiency of their HVAC system. The accuracy of the savings calculated for this measure would be improved if actual HVAC unit efficiencies were factored into the savings algorithms.

    - **Recommendation 4:** Ask customers applying for window treatment incentives for the actual efficiencies of their HVAC units, using default values when actual efficiencies are unknown.

- The analysis of logged data used to estimate lighting hours of operation for a streetlight upgrade contained errors that were corrected by the evaluation team. The original custom analysis estimated 4,772.57 hours, and the evaluation team's modifications resulted in an estimate of 4,235.72 hours. While the reported savings were conservatively based on the TRM value of 4,100 hours, the custom hours are more applicable, as they are derived from site-specific logged data. Additionally, this analysis assumes that all streetlights in the city operate on the same schedule. During a check-in call with EPE staff, the evaluation team recommended that EPE investigate if the streetlights have distinct usage groups with differing schedules, and EPE implementation staff said they would confirm operation schedules with the city.

    - **Recommendation 5:** Use the custom lighting hours value to calculate savings, noting modifications made to the analysis by the evaluation team.

    - **Recommendation 6:** Confirm whether these streetlights have multiple usage groups with distinct, differing schedules. If multiple usage groups exist, perform additional logging to determine separate estimates of lighting hours for each usage group and apply these hours to individual projects or groups of projects with similar lighting hours.

6.1.2 CFL and LED Program

Original bulb price was not included in the CFL and LED program tracking data, but was provided by EPE in retailer contract documents. These data were then used in the lighting elasticity model that was used to estimate net impacts. A net-to-gross (NTG) ratio of 0.65 was calculated for the CFL and LED program based on model results.

Recommendation 7: Record original bulb sales price (i.e. the pre-rebated cost) in program tracking data.

6.2 Cost Effectiveness

Cost effectiveness was calculated using the Utility Cost Test (UCT) for each individual program, as well as the entire portfolio of EPE programs. The evaluation team found the following during our analysis:

- EPE does not use the Total Resource Cost (TRC) test, and instead relies solely on the UCT to determine program and portfolio cost effectiveness.
- A 20 percent benefit adder is included in the UCT calculation for low-income projects to account for utility system economic benefits.
- The UCT revealed that all programs except SCORE Plus were cost effective (i.e., had a UCT ratio of greater than 1.00), and the EPE portfolio overall had a UCT ratio of 1.50.

Recommendation 8: If there is a desire or need to calculate cost effectiveness using the TRC test by either EPE or the New Mexico Public Regulation Commission (NMPRC), EPE should track measure costs for all programs so that the TRC test can be utilized in future program years.

6.3 Process Evaluation

The process evaluation component of the 2017 EPE evaluation included surveys with Small Business Comprehensive program participants and interviews with SCORE Plus program participants. The subchapters below summarize the evaluation team's conclusions and recommendations resulting from this research.

6.3.1 Small Business Comprehensive Program

Small Business Comprehensive program participants most commonly became aware of the program from a contractor or distributor. Participants were motivated primarily by the monetary aspects of reduced bill amounts and the rebate in their decision to participate, but also rated the contractor recommendation as a highly important factor in their decision to install high efficiency equipment. These participants were very satisfied with their experience with the Small Business Comprehensive program in general, with the overall

quality of the installation receiving the highest satisfaction scores followed by satisfaction with the rebate program overall. The time it took to receive the rebate and EPE as an energy provider received the lowest satisfaction scores on average, although participants were still relatively satisfied with these aspects.

6.3.2 SCORE Plus Program

The six interviewed SCORE Plus program participants expressed a high level of satisfaction across the majority of program components we asked about, with the SCORE Plus program overall, the dollar amount of the rebate, and the overall value of the equipment they received for the price they paid all receiving the highest satisfaction scores on average. Suggested recommendations to improve the program by participants included expediting the rebate process and expanding the offerings for HVAC incentives. In terms of motivations for their participation, five of six respondents noted that the program rebate was an important factor in their decision to make an energy efficient upgrade.

Recommendation 9: If looking for ways to expand the SCORE Plus incentive offerings, consider an expansion of the HVAC offering.

EVERGREEN ECONOMICS

Evaluation of the 2017 El Paso Electric Energy Efficiency Programs

Final Report - Appendices

May 8, 2018

ECOMETRIC

RESEARCH & POLLING INC

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Appendix A – Small Business 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 ON LINE; 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 2017 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 2017 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?

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

POLLER NOTE: Was HVAC/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 not 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*	*N/A*
Non-program Factors												
33. (D1J) The age or condition of the old equipment	10	09	08	07	06	05	04	03	02	01	00	11	12
34. (D1K) Corporate policy or guidelines	10	09	08	07	06	05	04	03	02	01	00	11	12
35. (D1L) Minimizing operating cost	10	09	08	07	06	05	04	03	02	01	00	11	12
36. (D1M) Scheduled time for routine maintenance	10	09	08	07	06	05	04	03	02	01	00	11	12

37. (D2) Of the items I just asked you about, think of the program factors as relating to assistance provided by the utility, such as the rebate/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 quantity 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)*

_____

_____

_____

SECTION E

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)*

_____

_____

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 2017 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 – Small Business Comprehensive and SCORE Plus Desk Review Detailed Results

Project ID	17CLG1	17CLG2	17CLG4	17EM1
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Other	Other	Other	Other
Project Description	HVAC	HVAC	HVAC	Vending Miser
Building Type	Restaurant - Sit-Down	Restaurant - Sit-Down	Office - Small	Other:
Other Building Type				Car Dealership
Site Visit Being Conducted				No
Gross Reported kWh	6,587	6,288	770	1,612
Gross Reported kW	3.71	3.91	0.60	0.03
Gross Verified kWh	6,587	6,292	772	1,612
Gross Verified kW	3.71	3.91	0.15	0.03
kWh Realization Rate	100%	100%	100%	100%
kW Realization Rate	100%	100%	25%	100%
Calculation Methodology	Prescriptive (TRM, Workpaper)	Prescriptive (TRM, Workpaper)	Prescriptive (TRM, Workpaper)	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	Other:	Utility Workpaper
Other Savings Source			Texas TRM	
Calculation Assessment	The calculations were created based on the NM TRM. The results match the claimed project savings.	The calculations were created based on the NM TRM. The results match the claimed project savings.	The NM TRM do not have the heat pump calculations. The calculations are created based on Texas TRM. The kW calculations donot match the claimed project savings because the Heating Demand Factor(DFh) is considered as 1 instead of 0.252	Would be good to have verification of installation
TRM/Workpaper Assessment			The NM TRM does not have Heat Pump calculation and it would be advisable to add the Heat Pump measure in the new version of the TRM.	No miser in TRM
Reasons for RR(s) <> 1			The kW calculations donot match the project savings due to the Heating Demand Factor(DFh) considered as 1 instead of 0.252	
Include any other important observations here				

Project ID	17EM4	17HEM1	NM-17LGT16	NM-17LGT24
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Other	Other	Lighting	Lighting
Project Description	Cooler Miser	HVAC	Retrofit of LED	Retrofit of LED
Building Type	Retail - Small	Lodging - Motel		Storage - Conditioned
Other Building Type				Non-Refrigerated Warehouse
Site Visit Being Conducted	No	No		
Gross Reported kWh	1,086	35,000	40,208	72,480
Gross Reported kW	0.04	10.50	0.00	16.31
Gross Verified kWh	1,086	35,000	40,209	84,337
Gross Verified kW	0.04	10.50	0.00	17.83
kWh Realization Rate	100%	100%	100%	116%
kW Realization Rate	100%	100%		109%
Calculation Methodology	Utility Calculator	Prescriptive (TRM, Workpaper)	Utility Calculator	Utility Calculator
Other Calculation Methodology				
Savings Source	Utility Workpaper	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	Would be good to have verification of installation	The calculations were created based on the NM TRM. The results match the claimed project savings.	The calculations were created based on the NM TRM. The results match the claimed project savings.	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: The operating hours are different from the NM TRM. The HVAC energy factor and the HVAC demand factor were taken as 1 instead of 1.052 and 1.093 respectively.
TRM/Workpaper Assessment	No miser in TRM	Accuracy would be improved if measure accounted for different heating unit types (e.g. PTAC vs. PTHP) and actual unit efficiencies.		The EPE lighting calculator's value for "Warehouse: Non-Refrigerated" does not match either of the values in the NM TRM for Warehouse - Unconditioned, or Warehouse - Conditioned. It is not clear where the value in the calculator comes from.
Reasons for RR(s) <> 1				RR kWh = 1.16 RR > 1 due ti the operating hours being different. RR_kW = 1.09 RR > 1 because the HVAC energy factor and HVAC demand factor were considered to be 1 intead of 1.053 and 1.093 respectively
Include any other important observations here				

Project ID	NM-17LGT41	NM-17LGT58	NM-17LGT61	NM-17LGT66
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Retrofit of LED	Retrofit of LED	Retrofit of LED	Retrofit of LED
Building Type	Retail - Small	Storage - Conditioned	Office - Small	Retail - Small
Other Building Type	Retail: Non-Mall Strip			
Site Visit Being Conducted				
Gross Reported kWh	103,639	61,455	33,122	25,929
Gross Reported kW	18.95	11.13	9.05	3.79
Gross Verified kWh	103,639	69,548	29,560	18,767
Gross Verified kW	18.95	12.17	9.03	3.78
kWh Realization Rate	100%	113%	89%	72%
kW Realization Rate	100%	109%	100%	100%
Calculation Methodology	Utility Calculator	Utility Calculator	Utility Calculator	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: The operating hours do not match with the TRM. The hours are over estimated and as a result we can	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: In the interior lighting retrofit calculations the implementer has not taken the correct Operationg hours, HVAC Energy Factor and HVAC Demand Factor. The HVAC operating hours are taken as 3111 insted of 3441. The HVAC Energy Factor and Demand Factor are taken to be 1 instead of 1.052 and 1.093 respectively.	The calculations were created based on the NM TRM. The results do not match the claimed project savings.	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: In the interior lighting retrofit calculations the Implementer has generalised the operating hours, the value is taken from the factor sheet. The operating hours are different for different location of the premise where the retrofit happens but the Implementer generalises it and sticks to one value
TRM/Workpaper Assessment	The NM TRM does not have all of the same buiding types as the TX TRM. In instances where there is no NM building type the HOU defaults to TX values. The TRMs should be made to align building types, or guidance should be provided as to what the correct value is.	The EPE lighting calculator's value for "Warehouse: Non-Refrigerated" does not match either of the values in the NM TRM for Warehouse - Unconditioned, or Warehouse - Conditioned. It is not clear where the value in the calculator comes from.	The EPE lighting calculator only has a building type for office (HOU: 2870) while the NM TRM has office small (2594) and office large (2651). It is unclear where 2870 comes from - this should be updated or better cited.	The TRM should also have different operating hours for different sections of a particular building type.
Reasons for RR(s) <> 1		RR-kWh = 1. 31 The reason for RR being > 1 is due to the operating hours, HVAC Energy Factor being different RR-kWh = 1.09 The reason for RR being > 1 is due to the HVAC Demand Factor being different	RR-kWh = 0.89 The reason for RR being < 1 is due to the operating hours being different. The operating hours are generalised and as a result over estimation is done with respect to the operating hours	RR-kWh = 0.72 The reason for RR being < 1 is due to the operating hours being different. The operating hours are generalised and as a result over estimation is done with respect to the operating hours
Include any other important observations here				

Project ID	NM-17LGT6	NM-17LGT67	NM-17LGT7	NM-17LGT81
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Retrofit of LED	Retrofit of LED	Retrofit of LED	Retrofit of LED
Building Type	Health/Medical - Nursing Home	Retail - Small	Office - Small	Storage - Conditioned
Other Building Type	Veternary Clinic	Non-Mall/Strip		Non-Refrigerated
Site Visit Being Conducted				
Gross Reported kWh	38,072	15,386	21,254	67,720
Gross Reported kW	6.70	2.49	0.00	15.24
Gross Verified kWh	43,974	12,761	21,254	68,960
Gross Verified kW	6.74	2.69	0.00	14.58
kWh Realization Rate	116%	83%	100%	102%
kW Realization Rate	101%	108%		96%
Calculation Methodology	Utility Calculator	Utility Calculator	Utility Calculator	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	The calculations were created based on the NM TRM. The result does not match the claimed project savings. Interior: In the interior lighting retrofit calculations the Implementer has generalised the operating hours, the value is taken from the factor sheet. The operating hours are different for different location of the premise where the retrofit happens but, the Implementer generalises it and sticks to one value	TRM methodology used for the calculation of the savings. Evaluator re-created calculations do not have the same result. Interior: The Interior calculations do not match due to incorrect number of operating hours and the HVAC energy factor and demand factor are considered to be 1.	The calculations were created based on the NM TRM. The results match the claimed project savings.	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: The Interior calculations do not match due to incorrect number of operating hours and the HVAC energy factor and demand factor.
TRM/Workpaper Assessment	The TRM should also have values for different sections of a particular building type.	Granular segmentation of the building type will be useful in getting better results.		This is the same issue noted in other projects with the EPE calculator and warehouse storage HOU values.
Reasons for RR(s) <> 1	RR-kWh = 1. 15 The reason for RR being > 1 is due to the operating hours being different	RR <> 1 for Energy Savings as well as for Peek demand savings due to incorrect number of operating hours and the HVAC energy factor and demand factor are considered to be 1 by the Implementer.		RR <> 1 for Energy Savings as well as for Peek demand savings due to incorrect number of operating hours and the HVAC energy factor and demand factor.
Include any other important observations here				

Project ID	NM-17LGT9	17LGT45	17LGT48	17LGT54
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Retrofit of LED	New Construction	New Construction	Retrofit
Building Type	Office - Small	Health/Medical - Hospital	Retail - Single-Story Large	Office - Large
Other Building Type				
Site Visit Being Conducted		No	No	No
Gross Reported kWh	28,015	8,900	4,015	4,041
Gross Reported kW	6.55	1.94	0.84	0.98
Gross Verified kWh	25,254	8,900	4,036	4,599
Gross Verified kW	6.52	1.94	0.84	1.35
kWh Realization Rate	90%	100%	101%	114%
kW Realization Rate	100%	100%	100%	138%
Calculation Methodology	Utility Calculator	Prescriptive (TRM, Workpaper)	Utility Calculator	Prescriptive (TRM, Workpaper)
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	Utility Workpaper	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	The calculations were created based on the NM TRM. The results do not match the claimed project savings. Interior: In the interior lighting retrofit calculations the Implementeor has selected incorrect operating hours. The implementor selects 2870 instead of 2594 operating hours.	Would be good to have verification of installation		
TRM/Workpaper Assessment	This is the same note as noted in other projects where the EPE lighting calculator does not differentiate between small and large offices, and the source for the NM office HOU is not clear.	NM TRM only provides inpatient healthcare HOU values, so EPE calculator defaults to TX TRM in cases of outpatient healthcare. Recommend aligning building types between TX and NM TRMs	EPE calculator uses TX factors, most match but operating hours differ	EPE calculator uses TX factors, most match but operating hours differ
Reasons for RR(s) <> 1	RR-kWh = 0.9 The reason for RR being < 1 is due to the operating hours being different. Also, in one of the exterior fixtures the customer removes a fixture instead of replacing it but, he still counts the wattage reduced due to the removal of the fixture in the total savings.	NM TRM Op hours higher than TX TRM Op hours; when I use the same operating hours in both the EPE savings caluclator and TRM, the savings match	Slightly different operating hours between NM TRM and TX TRM	Slightly different operating hours between NM TRM and TX TRM; also HVAC factors = 1 in EPE calculator bc HVAC system is Evaporative Cooler...does this also apply in NM TRM?
Include any other important observations here				

Project ID	17LGT55	17LGT57	17WT1	RBT-1185159
Utility	EPE	EPE	EPE	EPE
Program	Commercial Comprehensive	Commercial Comprehensive	Commercial Comprehensive	SCORE Plus
Measure Type	Lighting	Lighting	Other	Lighting
Project Description	New Construction efficiency lighting	New Construction efficiency lighting	Window Treatment	
Building Type	Assembly	Retail - Single-Story Large	Office - Small	Office - Small
Other Building Type	Convention Center	Auto Shop		School Administration Building
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	2,445	21,941	1,767	5,346
Gross Reported kW	0.77	2.82	1.71	1.45
Gross Verified kWh	2,366	23,322	1,767	5,741
Gross Verified kW	0.77	2.43	1.71	1.45
kWh Realization Rate	97%	106%	100%	107%
kW Realization Rate	100%	86%	100%	100%
Calculation Methodology	Prescriptive (TRM, Workpaper)	Prescriptive (TRM, Workpaper)	Prescriptive (TRM, Workpaper)	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	Other:	New Mexico TRM - 2016
Other Savings Source			TX TRM v4.0	
Calculation Assessment	no invoice to verify qty/specs	no invoice to verify qty/specs	The calculations were created based on the Texas TRM. The results match the claimed project savings.The calculations matched but the project file was a scanned copy of the invoice and no savings values were given in the project file. The values to complete the calculations were taken from the tracking data. Accuracy would be increased if actual HVAC system efficiencies were gathered and used in savings algorithms.	Factors in LSF tool are not completely consistent with TRM
TRM/Workpaper Assessment	EPE calculator uses TX factors, most match but operating hours differ	EPE calculator uses TX factors, most match but operating hours differ	The New Mexico TRM does not have window treatment measure and it would be advisable to add the measure in the TRM.	TRM should incorporate nuances built into LSF, such as accounting for non-conditioned space, and derations based on automatic controls
Reasons for RR(s) <> 1	Operating hours are only difference between NM TRM and EPE calculator	Operating hours are only difference between NM TRM and EPE calculator for interior calcs; exterior calcs have differing LPDs; coincidence factor differs as well for control calcs	Difference only due to rounding.	LSF has office hours of 2,870, while TRM CFL small office hours are 3,082
Include any other important observations here				

Project ID	RBT-1185183	RBT-1185184	RBT-1185186	RBT-1185187
Utility	EPE	EPE	EPE	EPE
Program	SCORE Plus	SCORE Plus	SCORE Plus	SCORE Plus
Measure Type	Lighting	Other	Lighting	Lighting
Project Description	Efficient lighting in new elementary school	RTU and chiller in new elementary school	LED Lighting in New Construction	LED Lighting Retrofit
Building Type	Education - Primary School	Education - Primary School	Office - Large	Health/Medical - Nursing Home
Other Building Type			Office, Warehouse, Parking Lot	
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	172,476	24,518	447,366	487,654
Gross Reported kW	47.06	15.45	64.46	79.27
Gross Verified kWh	165,317	18,309	347,579	446,625
Gross Verified kW	47.06	21.03	64.98	79.21
kWh Realization Rate	96%	75%	78%	92%
kW Realization Rate	100%	136%	101%	100%
Calculation Methodology	Utility Calculator	Utility Calculator	Utility Calculator	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	Other:	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source		TX TRM		
Calculation Assessment	Some factors in LSF slightly different than TRM. TRM includes more details/options for operating hours	Packaged AC: Implementer used calculator based on TX TRM. Evaluator created new calculation using EFLH and baseline efficiency from NM TRM, as it does not appear the TX TRM is any more accurate than the NM TRM for these values. CF taken from TX TRM, as NM TRM does not have CFs for packaged AC Chiller: Implementer used calculation based on TX TRM. This is acceptable as this measure is not in the NM TRM.	Factors in LSF tool are not completely consistent with TRM Office: refrigerated warehouse was selected as the building type instead of office Warehouse: LSF combines refrigerated and conditioned (but not refrigerated) warehouse into one building type, without accounting for all differences in TRM	Factors in LSF tool are not completely consistent with TRM
TRM/Workpaper Assessment	TRM could explicitly include additional nuances from LSF (e.g. % of floor area that is conditioned)	Packaged AC needs CFs for demand savings. TRM does not have chiller - should be added.	TRM should incorporate nuances built into LSF, such as accounting for non-conditioned space, and derations based on automatic controls TRM should include different exterior LPDs for zones	TRM should incorporate nuances built into LSF, such as accounting for non-conditioned space, and derations based on automatic controls
Reasons for RR(s) <> 1	Evaluator used TRM factors, as TRM hours provide more detail (e.g. CFL vs non-CFL hours). Evaluator used outdoor LPD from TRM	Packaged AC: Evaluator created new calculation using EFLH and baseline efficiency from NM TRM, as it does not appear the TX TRM is any more accurate than the NM TRM for these values. CF taken from TX TRM, as NM TRM does not have CFs for packaged AC Chiller: Evaluator followed TX TRM and used same factors as shown in calculator; source of discrepancy is unknown.	Office: LSF had refrigerated warehouse selected as bulding type instead of office on "Inventory" tab Warehouse: LSF has the same hours for refrigerated warehouses and conditioned warehouses, while the TRM has different hours for these. Evaluator used conditioned warehouse hours Parking Lot: LSF uses LPD of 0.10, TRM lists LPD of 0.15 for parking areas	Exterior lighting is consistent. Interior: LSF uses HOU = 3,914 for nursing home, evaluator calculation used TRM value of 3,573 for nursing home. Evaluator updated fixture quantities based on invoice.
Include any other important observations here				

Project ID	RBT-1185201	RBT-1185205	RBT-1207315	RBT-1244600
Utility	EPE	EPE	EPE	EPE
Program	SCORE Plus	SCORE Plus	SCORE PLUS	SCORE Plus
Measure Type	Lighting	Custom	Lighting	Lighting
Project Description	LED Lighting Retrofit	Data center efficiency upgrades	Retrofit lighting	Efficient lighting in new elementary school
Building Type	Other:	Other:	Retail - Single-Story Large	Education - Primary School
Other Building Type	Casino	Data Center	Marshall's	
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	69,867	61,895	89,500	203,913
Gross Reported kW	9.16	13.96	22.58	54.16
Gross Verified kWh	69,867	61,895	88,036	190,472
Gross Verified kW	9.16	15.49	22.54	55.01
kWh Realization Rate	100%	100%	98%	93%
kW Realization Rate	100%	111%	100%	102%
Calculation Methodology	Utility Calculator	Billing Analysis	Prescriptive (TRM, Workpaper)	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	Custom Analysis	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	Hours and CF based on logger data from phase 1 of project - accurate approach for custom building type. HVAC interactive factors are closest to warehouse values, which is reasonable and potentially conservative.	Submitted calculations determined peak kW savings by taking average of reduction in maximum monthly kW for all months of the year. However, per the M&V report, the peak period was considered to be June-September. Evaluator modified kW savings to only include kW from these months.		Some factors in LSF slightly different than TRM. TRM includes more details/options for operating hours
TRM/Workpaper Assessment	TRM should incorporate nuances built into LSF, such as accounting for non-conditioned space, and derations based on automatic controls	n/a	EPE calculator uses TX factors, factors differ because EPE calculator has Public Safety building type for a firestation, while the NM TRM does not have anything close. I used retail single-story large because it seemed like the best fit to me	TRM could explicitly include additional nuances from LSF (e.g. % of floor area that is conditioned)
Reasons for RR(s) <> 1	RR = 1	Evaluator calculated peak coincident kW savings based on months of June-September only, per M&V report description of peak demand period.	Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match; for control savings calculation, energy factors match but demand do not	Evaluator used TRM factors, as TRM hours provide more detail (e.g. CFL vs non-CFL hours)
Include any other important observations here				

Project ID	RBT-1261568	RBT-1380880	RBT-1380896	RBT-1482827
Utility	EPE	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS	SCORE Plus
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Retrofit lighting	Retrofit lighting	Retrofit lighting	Streetlights
Building Type	Office - Large	Assembly	Education - University	Other:
Other Building Type	Bank	Museum	Exterior	Streetlights
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	64,228	17,535	54,793	76,544
Gross Reported kW	17.51	5.52	0.00	0.00
Gross Verified kWh	55,562	18,100	54,792	79,072
Gross Verified kW	16.36	5.53	0.00	0.00
kWh Realization Rate	87%	103%	100%	103%
kW Realization Rate	93%	100%		
Calculation Methodology	Utility Calculator	Prescriptive (TRM, Workpaper)	Prescriptive (TRM, Workpaper)	Utility Calculator
Other Calculation Methodology				
Savings Source	Utility Workpaper	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment				Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.
TRM/Workpaper Assessment				No TRM comments
Reasons for RR(s) <> 1	Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match	Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match	RR = 1	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.
Include any other important observations here				

Project ID	RBT-1482984	RBT-1482994	RBT-1482995	RBT-1536159
Utility	EPE	EPE	EPE	EPE
Program	SCORE Plus	SCORE Plus	SCORE Plus	SCORE Plus
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Streetlights	Streetlights	Streetlights	Streetlights
Building Type	Other:	Other:	Other:	Other:
Other Building Type	Streetlights	Streetlights	Streetlights	Streetlights
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	15,300	68,632	17,392	64,156
Gross Reported kW	0.00	0.00	0.00	0.00
Gross Verified kWh	16,265	70,923	17,976	66,297
Gross Verified kW	0.00	0.00	0.00	0.00
kWh Realization Rate	106%	103%	103%	103%
kW Realization Rate				
Calculation Methodology	Utility Calculator	Utility Calculator	Utility Calculator	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016	New Mexico TRM - 2016
Other Savings Source				
Calculation Assessment	Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.	Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.	Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.	Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.
TRM/Workpaper Assessment	No TRM comments	No TRM comments	No TRM comments	No TRM comments
Reasons for RR(s) <> 1	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.
Include any other important observations here				

Project ID	RBT-1536263	RBT-1616195	RBT-1185161	RBT-1185165
Utility	EPE	EPE	EPE	EPE
Program	SCORE Plus	SCORE Plus	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Other	Lighting	Lighting
Project Description	Streetlights	RTUs in new elementary school	Retrofit lighting	Retrofit lighting
Building Type	Other:	Education - Primary School	Education - Primary School	Other:
Other Building Type	Streetlights			Police Station
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	64,156	18,696	11,367	11,367
Gross Reported kW	0.00	10.60	3.09	3.09
Gross Verified kWh	66,297	6,586	10,509	14,559
Gross Verified kW	0.00	14.02	3.09	3.12
kWh Realization Rate	103%	35%	92%	128%
kW Realization Rate		132%	100%	101%
Calculation Methodology	Utility Calculator	Utility Calculator	Utility Calculator	Prescriptive (TRM, Workpaper)
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	Other:	Utility Workpaper	New Mexico TRM - 2016
Other Savings Source		TX TRM		
Calculation Assessment	Notes indicate that TRM hours were used in lieu of logger hours to produce a conservative savings estimate.	Implementer used calculator based on TX TRM. Evaluator created new calculation using EFLH and baseline efficiency from NM TRM, as it does not appear the TX TRM is any more accurate than the NM TRM for these values. CF taken from TX TRM, as NM TRM does not have CFs for packaged AC		
TRM/Workpaper Assessment	No TRM comments	Packaged AC needs CFs for demand savings.	EPE calculator uses TX factors, most match but operating hours differ	EPE calculator uses TX factors, most match but operating hours differ
Reasons for RR(s) <> 1	EPE provided logger data and analysis used to determine custom lighting hours. Evaluator reviewed this analysis and made modifications, resulting in an estimate of 4,235.72 hours. Evaluator used these hours instead of TRM value of 4,100 hours, slightly increasing savings.	Evaluator created new calculation using EFLH and baseline efficiency from NM TRM, as it does not appear the TX TRM is any more accurate than the NM TRM for these values. CF taken from TX TRM, as NM TRM does not have CFs for packaged AC	Slightly different operating hours between NM TRM and TX TRM	Slightly different operating hours between NM TRM and TX TRM; also differences between interactive factors; NM TRM does not have a building type that directly corresponds to a police station. Victoria reverted to 100% RR as using TX for building types not provided by NM is the preferred method.
Include any other important observations here				

Project ID	RBT-1185166	RBT-1185169	RBT-1185170	RBT-1185177
Utility	EPE	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting	Lighting	Lighting
Project Description	Retrofit lighting	Retrofit lighting	Retrofit lighting	Retrofit lighting
Building Type	Other:	Office - Large	Office - Large	Office - Large
Other Building Type	Police Station	City Hall	City Hall (exterior)	Firestation
Site Visit Being Conducted	No	No	No	No
Gross Reported kWh	1,866	16,675	3,764	8,502
Gross Reported kW	0.00	4.54	0.00	1.82
Gross Verified kWh	1,866	15,403	3,764	8,480
Gross Verified kW	0.00	4.54	0.00	1.88
kWh Realization Rate	100%	92%	100%	100%
kW Realization Rate		100%		103%
Calculation Methodology	Prescriptive (TRM, Workpaper)	Utility Calculator	Prescriptive (TRM, Workpaper)	Utility Calculator
Other Calculation Methodology				
Savings Source	New Mexico TRM - 2016	Utility Workpaper	New Mexico TRM - 2016	Utility Workpaper
Other Savings Source				
Calculation Assessment	matches between EPE calculator and NM TRM b/c factors for exterior lighting (interactive, operating hours, CF) match		matches between EPE calculator and NM TRM b/c factors for exterior lighting (interactive, operating hours, CF) match	
TRM/Workpaper Assessment		EPE calculator uses TX factors, most match but operating hours differ		EPE calculator uses TX factors, factors differ because EPE calculator has Public Safety building type for a firestation, while the NM TRM does not have anything close. I used retail single-story large because it seemed like the best fit to me
Reasons for RR(s) <> 1		Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match		Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match Victoria reverted back as the preference is to use TX values when NM doesn't have appropriate building type.
Include any other important observations here				

Project ID	RBT-1185178	RBT-1185194	RBT-1185200
Utility	EPE	EPE	EPE
Program	SCORE PLUS	SCORE PLUS	SCORE PLUS
Measure Type	Lighting	Lighting	Lighting
Project Description	Retrofit lighting	Retrofit lighting	New Construction
Building Type	Other:	Office - Large	Grocery
Other Building Type	Fire station (exterior)		24 hours
Site Visit Being Conducted	No	No	No
Gross Reported kWh	1,066	67,761	220,963
Gross Reported kW	0.00	18.43	27.15
Gross Verified kWh	1,066	62,590	220,963
Gross Verified kW	0.00	18.43	27.15
kWh Realization Rate	100%	92%	100%
kW Realization Rate		100%	100%
Calculation Methodology	Prescriptive (TRM, Workpaper)	Utility Calculator	Utility Calculator
Other Calculation Methodology			
Savings Source	New Mexico TRM - 2016	Utility Workpaper	Utility Workpaper
Other Savings Source			
Calculation Assessment	matches between EPE calculator and NM TRM b/c factors for exterior lighting (interactive, operating hours, CF) match		Decided to go w/ EPE calculator, factors are the same between NM TRM and EPE except for operating hours. EPE has op hours of 6,900 which represents a 24 hour Walmart better than the 4,886 hours of a retail building from the NM TRM
TRM/Workpaper Assessment		EPE calculator uses TX factors, most match but operating hours differ	EPE calculator uses TX factors, most match but operating hours differ
Reasons for RR(s) <> 1		Slightly different operating hours between NM TRM and TX TRM; other factors (CF, interactive) match	
Include any other important observations here			