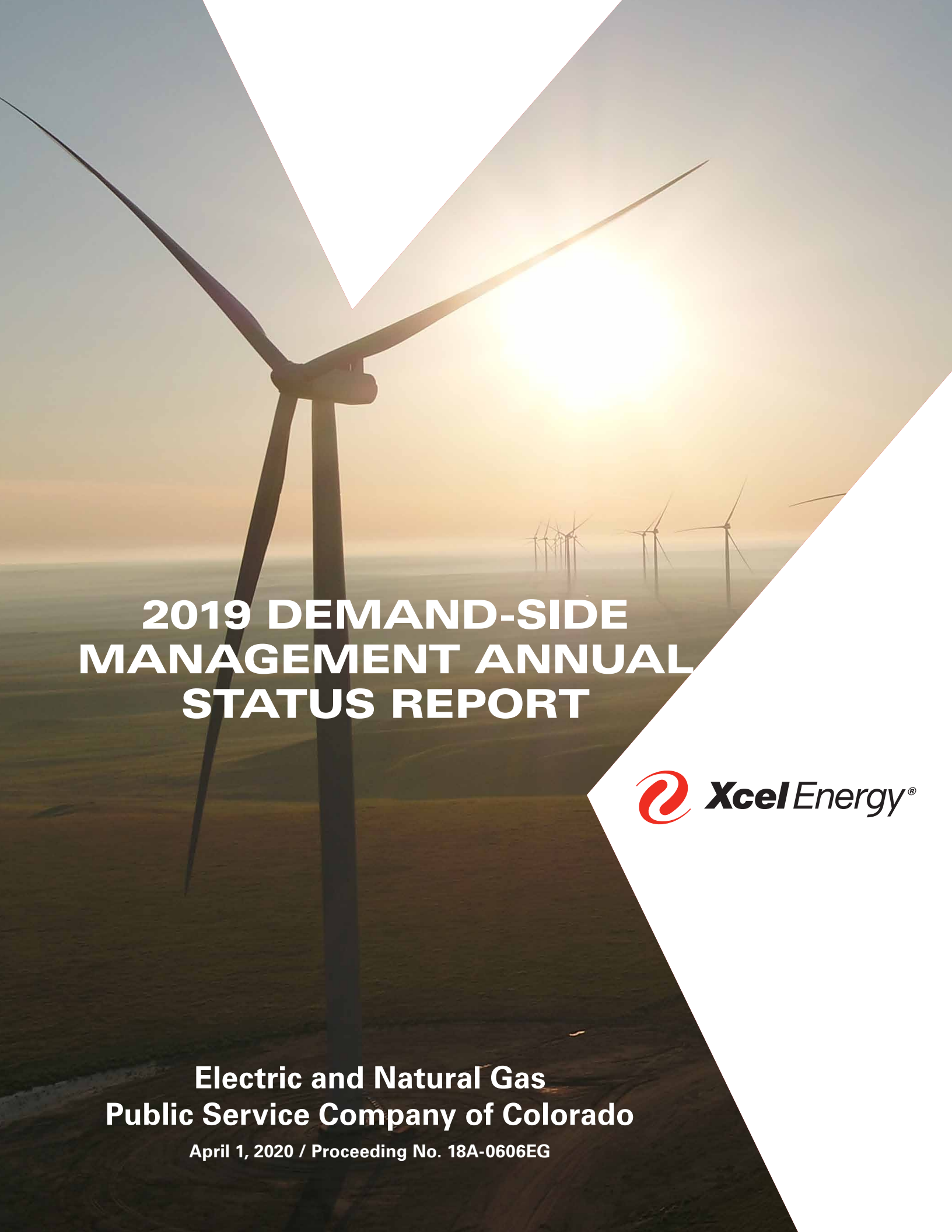

2019 DEMAND-SIDE MANAGEMENT ANNUAL STATUS REPORT

Xcel Energy®

Electric and Natural Gas
Public Service Company of Colorado

April 1, 2020 / Proceeding No. 18A-0606EG

2019 Demand-Side Management Annual Status Report

Public Service Company of Colorado ("Public Service" or "the Company") continues to provide customers the choices and the tools they need to make educated decisions about their electricity use. Public Service helps customers manage their energy consumption through one of the largest energy-saving program portfolios in the United States. These energy efficiency programs help customers save money, benefit all of Colorado by avoiding emissions, and reduce the Company's need to purchase, produce, and deliver additional energy. The Demand-Side Management ("DSM") portfolio continues to be cost-effective while delivering significant energy efficiency savings and demand reductions.

This 2019 DSM Annual Status Report summarizes the natural gas and electric energy efficiency achievements made in 2019. This report also explores the challenges and lessons learned from a diverse and varied portfolio of programs, products, and pilots designed to provide customers control of their energy use.

Report Highlights:

- **The electric DSM portfolio exceeded its energy efficiency goal.** In 2019, Public Service's electric energy efficiency portfolio achieved energy savings of over 504 GWh, meeting the new energy efficiency goal of 500 GWh established by the Commission. This achievement surpassed 2018's record-setting achievement for electric energy savings by more than 10 percent. This was accomplished at 89 percent of the filed budget. The natural gas portfolio achieved 102 percent of the target at 105 percent of budget.
- **A total of 257,439 tons of carbon dioxide ("CO2") were avoided in 2019 through the natural gas and electric DSM achievements.** Additionally, more than 3.3 million tons of CO2 emissions will be avoided over the lifetime of the installed measures. In terms of energy saved, the greatest contributors were Home Lighting & Recycling, Lighting Efficiency, Lighting – Small Business, and New Construction. The electric and natural gas portfolios also avoided 252,078 tons of sulfur oxide ("SOx") emissions in 2019, with expected lifetime emissions reduction of over 2 million tons.
- **Lighting programs continued to contribute to the majority of the electric energy savings achievements**. Lighting programs contributed more than 54 percent of the energy savings realized in 2019. This is a significant decline from 66 percent in 2018.
- **The Energy Efficiency portfolio was cost-effective; the Low-Income Program was also cost-effective.** Both the Residential Program and Business Program were cost-effective. The Low-Income Program showed significant improvement from 2018 concerning cost-effectiveness as demonstrated by a Modified Total Resource Cost ("MTRC") ratio of 1.06.
- **New products and pilots expanded customer choice.** The Company operated a Geo-targeting pilot in 2019 to explore the effectiveness of targeted deployment of DSM resources in deferring the need for investment in a new distribution transformer and associated feeder upgrades. The Company also began building the operational framework for several pilots including Residential Battery Demand Response and Charging Perks offer customers more opportunities to participate in Company's Demand Response Program. Pilots are expected to launch in 2020.

Looking ahead, the Company will continue to offer more cost-effective choices for customers in an effort to help Coloradans exceed their energy, climate, and sustainability goals. The Company takes pride in its environmental leadership and commitment to managing customer bill impacts responsibly. These achievements also exemplify the Company's commitment to customers and communities by providing a wide variety of choices to meet the diverse energy needs of Coloradans.

2019 Demand-Side Management Annual Status Report

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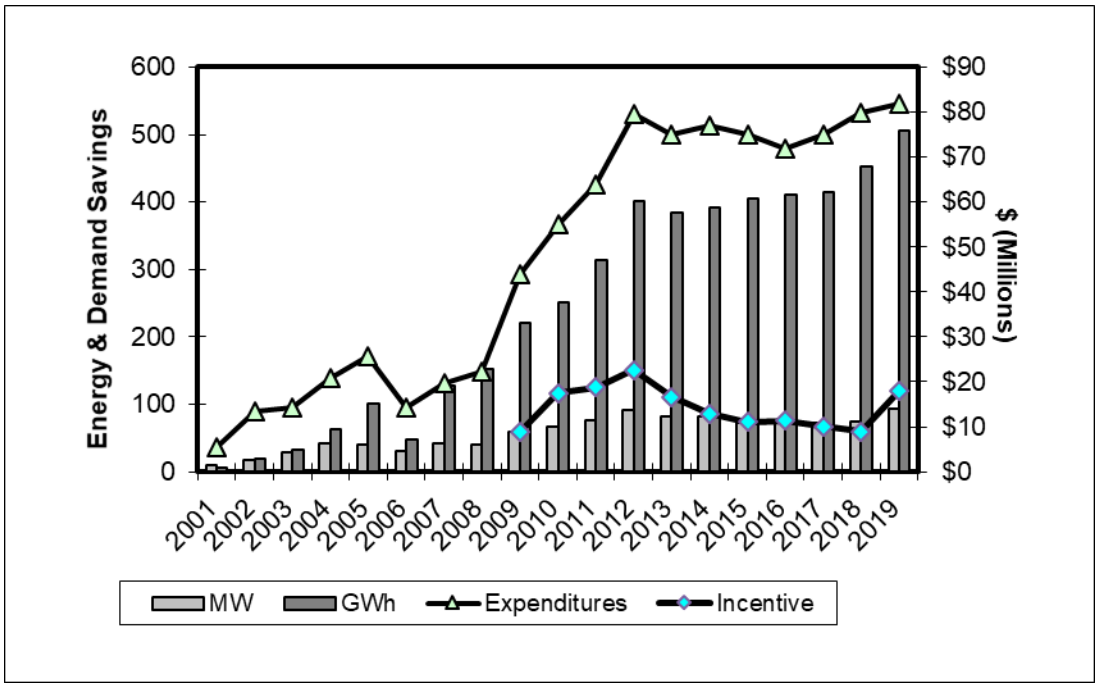
Executive Summary

Public Service respectfully submits this combined electric and natural gas 2019 Colorado DSM Annual Status Report ("Status Report") to the Colorado Public Utilities Commission ("Commission"). In this filing, the Company will report on its electric and natural gas DSM achievements from January 1, 2019 through December 31, 2019.

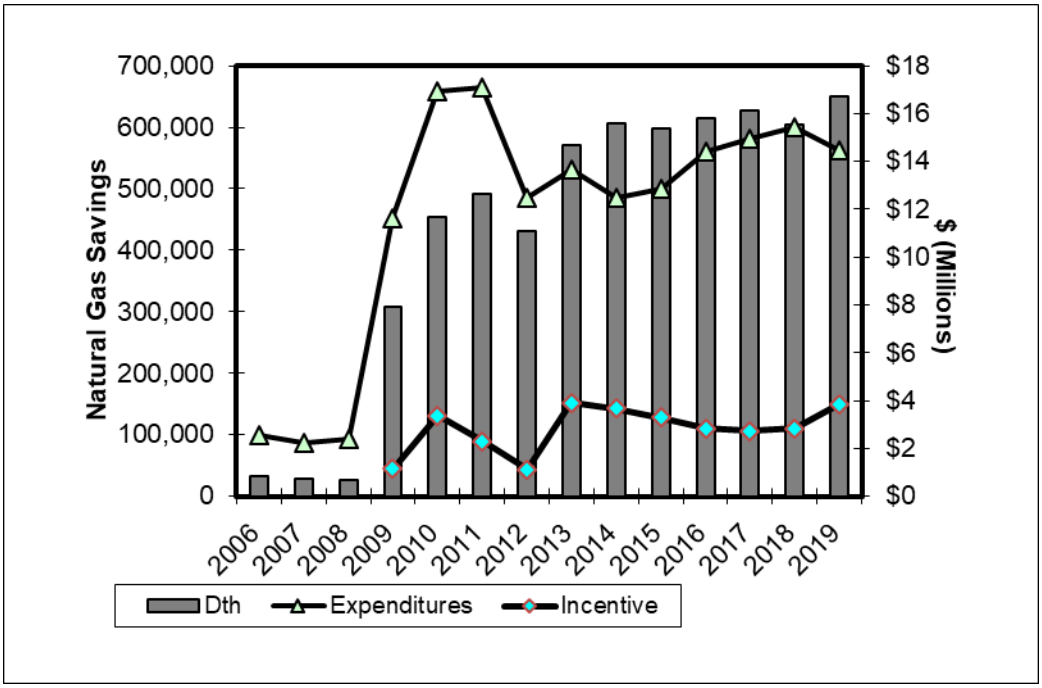
The electric savings of 504 GWh are a significant accomplishment compared to prior years equaling 101 percent of the goal of 500 GWh. Natural gas savings of 649,298 Dth was 102 percent of the goal of 637,448 Dth. To achieve these savings, the Company spent a total of $94,687,636 million ($82.3 million electric energy efficiency, $12.4 million demand response) on its electric programs and $14.5 million on its natural gas energy efficiency programs. The electric energy efficiency spending was less than the approved electric energy efficiency budget cap of $93.6 million[1], the demand response spending was less than the approved demand response budget of $17.1 million, and the natural gas energy efficiency spending was more than the minimum natural gas expenditure requirement of $12 million[2] and less than the budget cap of $15 million[3]. Below in Figures 1 and 2 are Public Service's historical achievements and expenditures for its electric and natural gas DSM Programs.

Figure 1: Historical Electric Program Savings and Expenditures



[1] *See* Decision No. C18-0417 at ¶ 97.
[2] *See* Decision No. C14-0731 at ¶ 69.
[3] Proceeding No. 18A-0606EG, Unopposed Comprehensive Settlement Agreement, at Section III(C).

Figure 2: Historical Natural Gas Program Savings and Expenditures



History of the Plan

Over the last twenty years, Public Service has entered into several regulatory settlements involving DSM in conjunction with its integrated resource/least-cost planning process. The following table identifies those significant to DSM:

Table 1a: Regulatory Settlements Involving DSM and Resource Planning

Proceeding	Proceeding No.	Decision No.	Summary
1999 Integrated Resource Plan	00A-008E	C00-1057	• 124 MW (~21 MW) of DSM resources • $75 million
2003 Least Cost Resource Plan	04A-214E	C05-0049	• 320 MW (Avg. of 40 MW per year) • 800 GWh (Avg. of 100 GWh per year) • $196 million • 2006 – 2013
2008 CPCN at Fort St. Vrain Generation Station	07A-469E	C08-0369	• Expansion of ISOC and Saver's Switch programs • Initiation of Third-Party Demand Response Program
2011 Electric Resource Plan	11A-869E	C13-0094 & C13-0323	• Informed the methodologies and values for avoided costs

In addition, both legislation and the Strategic Issues proceedings at the Commission have addressed major policy issues for DSM programs. The following table identifies the applicable legislation and Commission proceedings:

Table 1b: Legislative and Regulatory Policy Directives for DSM

Proceeding	Proceeding No.	Decision No.	Summary
House Bill 07-1037	N/A	N/A	• Established intent of DSM programs • Established ten-year goals for energy and demand
2010 Strategic Issues	10A-554EG	C11-0442	• Established energy and demand savings goals • Established incentive mechanism • Defined program administration requirements
2013 Strategic Issues	13A-0686EG	C14-0731	• Increased energy and demand savings goals • Modified the incentive mechanism • Established a budget cap
House Bill 17-1227	N/A	N/A	• Extended energy and demand savings goals though 2028
2017 Strategic Issues	17A-0462EG	C18-0417	• Increased energy savings goals and budget for 2019 - 2023 • Modified incentive mechanism for 2019 - 2023 • Grandfathering of ISOC customers
SB 19-236	N/A	N/A	• Established the valuation and application of the Social Cost of Carbon

High-Level Achievements

In 2019, Public Service's electric portfolio achieved demand savings of 132,567 net generator kW (108 percent of filed target) and energy savings of 504,592,971 net generator kWh (101 percent of goal, 100 percent of filed target) at a cost of $94,687,636 (86 percent of filed budget). The natural gas portfolio achieved savings of 649,298 Dth (102 percent of filed target) at a cost of $14,471,991 (105 percent of filed budget).

Table 2a below shows the Company's electric portfolio achievements, including Modified Total Resource Cost ("MTRC") Test ratio results at the program level.

Table 2a: High-Level Electric Targets and Achievements for 2019

2019 Programs	Electric Budget	Electric Expenditures (Actual)	Gen. kW Target	Net Gen. Realized kW	Net Gen. kWh Target	Net Gen. Realized kWh	MTRC Target	MTRC (Actual)
Business	$ 57,692,446	$49,969,520	55,335	55,377	343,755,746	325,595,292	1.33	1.66
Residential	$ 23,707,054	$24,039,481	33,377	37,191	150,296,541	171,027,524	1.88	2.57
Low-Income	$ 4,121,754	$3,855,148	1,344	1,073	7,969,430	7,519,046	0.90	1.06
Indirect	$ 6,887,507	$4,405,652	0	0	0	0	-	-
Demand Response	$ 17,076,182	$12,417,836	32,494	38,864	37,082	14,552	1.57	1.05
2019 TOTAL	**$109,484,943**	**$94,687,636**	**122,551**	**132,505**	**502,058,799**	**504,156,414**	**1.38**	**1.71**

Table 2b below shows the Company's natural gas portfolio achievements, including MTRC test ratio results at the program level.

Table 2b: High-Level Natural Gas Targets and Achievements for 2019

2019 Programs	Natural Gas Budget	Natural Gas Expenditures (Actual)	Dth Target	Net. Realized Dth	MTRC Target	MTRC (Actual)
Business	$2,599,866	$2,205,944	163,234	152,740	1.55	2.69
Residential	$5,888,200	$7,398,006	396,964	418,481	1.78	1.69
Low-Income	$3,829,998	$3,863,558	77,250	78,077	1.24	1.28
Indirect	$1,467,901	$1,004,483	0	0	-	-
2019 TOTAL	**$13,785,965**	$14,471,991	**637,448**	**649,298**	**1.48**	**1.78**

These achievements shown in Tables 2a and 2b have provided electric net benefits of approximately $146 million and natural gas net benefits of $26 million. Based on these achievements and net benefits, the Company has calculated an associated financial incentive of $18 million for its electric portfolio and $3.9 million for its natural gas portfolio. This includes $3,235,509 for the incentive and an acknowledgement of lost revenues ("ALR") associated with gas DSM programs of $682,209. The DSM portfolio's overall costs and benefits, as determined by the MTRC test, along with the Company's lost revenue and incentive resulting from these achievements, is shown in Table 2c below. Additional incentive calculation details are shown in the Financial Incentive Calculation section of this Report.

Table 2c: MTRC Test Results with Financial Incentive

	Electric	Gas
MTRC Benefits w/Adder	$353,756,768	$60,024,028
MTRC Costs	$207,364,462	$33,769,218
MTRC Ratio	1.71	1.78
MTRC Benefits w/Adder	$353,756,768	$60,024,028
Incentive	$18,000,000	$3,235,509
Acknowledgement of Lost Revenue (ALR)	n/a	$682,209
MTRC Costs w/Incentive & ALR	$225,364,462	$37,686,937
MTRC Ratio w/Incentive & ALR	1.57	1.59

In accordance with the 2019/2020 DSM Plan Settlement Agreement,[4] Table 2d includes a portfolio-level sensitivity cost-benefit analysis for the electric and natural gas portfolios using the Social Cost of Carbon as established in Senate Bill 19-236. Avoided emissions provide an additional $104 million of electric net benefits and $20 million of natural gas net benefits. Program-level emissions reductions and benefits are shown in Table 7.

Table 2d: MTRC Test Results with Social Cost of Carbon

	Electric	Gas
MTRC Benefits w/Adder + SCC	$457,553,008	$79,812,025
MTRC Costs	$207,443,615	$33,769,218
MTRC Ratio	2.21	2.36
MTRC Benefits w/Adder + SCC	$457,553,008	$79,812,025
Incentive	$18,000,000	$3,186,706
Acknowledgement of Lost Revenue (ALR)	n/a	$679,130
MTRC Costs w/Incentive & ALR	$225,443,615	$37,635,055
MTRC Ratio w/Incentive & ALR	2.03	2.12

Some of the products that are part of the Company's portfolio did not pass the MTRC Test in 2019. While each product listed below is discussed in more detail in the 2019 Status Report section of this report, below is a bulleted summary of the primary reason for the failing of MTRC Test ratios (natural gas and/or electric), and brief discussion of plans to improve the ratios in 2020.

Business Program

- *Heating Efficiency – Natural Gas (0.96 MTRC)*
    - Due to the split plan year, the product continued to see boiler tune-ups and furnaces rebated which were identified as not being cost effective. There was no participation in the newly launched ozone laundry measure.

  Efforts to improve for 2020: As part of the 2019/2020 DSM Plan, the Company discontinued the underperforming Boiler Tune-up and Furnace measures. The Company filed a 60-day notice in the first quarter of 2020 to discontinue non-cost-effective measures including condensing boilers, condensing unit heaters, and 105-degree pipe insulation.

Residential Program

- *Home Energy Squad – Electric (0.93 MTRC)*
    - The measure life for A-type LEDs decreased to 5 years relative to previous assumptions.
    - The Company incurred high staffing costs to maintain the Squad technician staff during the summer months when customer participation was lagging. This resulted in higher than anticipated administrative costs for the product.

  Efforts to improve for 2020: The product has partnered with multiple Partners in Energy communities to promote and subsidize Squad visits for their residents. This tactic has been extremely successful in other states and is already showing positive results in Colorado. The product has also begun coordinating with the AC Rewards product to offer Smart Thermostat

[4] Proceeding No. 18A-0606EG, Unopposed Comprehensive Settlement Agreement, at Section III(I)(ii).

installations and a new enrollment channel for the demand response product. This strategy has also been tested in other states and has shown positive results. Lastly, product management is engaging more directly with marketing management to ensure messaging for the product is prioritized so that excess staffing fees can be mitigated.

- *Home Performance with ENERGY STAR® – Electric (0.87 MTRC) and Natural Gas (0.83 MTRC)*
    - The product underachieved due to low participation and high incremental costs.

  Efforts to improve for 2020: The Company posted a 60-day notice in 2019 to begin redesigning the product and addresses customer participation barriers. Renewed efforts to increase the number of participating trade partners should drive additional participation as well.

- *Insulation and Air Sealing – Electric (0.97 MTRC) and Natural Gas (0.88 MTRC)*
    - Higher administrative and incremental capital costs impacted the cost effectiveness of the product.

  Efforts to improve for 2020: The Company will review incremental costs and promote more cost-effective measures to improve cost effectiveness. In addition, we will increase trade partner outreach and education to boost participation and energy savings.

- *Water Heating – Electric (0.94 MTRC) and Natural Gas (0.61 MTRC)*
    - The high incremental and administrative costs for gas and electric measures resulted in the product being not cost-effective.

  Efforts to improve for 2020: Marketing efforts targeting market transformation will emphasize the most cost-effective measures within the product. Instant rebates were expanded in 2019 and will continue in 2020 as a means of further reducing administrative costs.

Low-Income Program

- *Multifamily Weatherization –Natural Gas (0.94 MTRC)*
    - Given the long-term benefit to low-income multifamily building tenants, some rebates were approved for projects that did not pass cost-effectiveness under the standard custom analysis.
    - Finding cost effective natural gas measures is becoming more and more difficult, as many properties need new boiler systems that typically have higher incremental costs.
    - Additional funding was provided for outreach and customer education efforts.

  Efforts to improve for 2020: The Company will continue to seek cost-saving opportunities while ensuring that this customer segment receives necessary assistance. The Company will review its custom analysis tools and approach to ensure that they are adequately representing the savings opportunity for this segment. The Company will also work with its implementer to identify possible administrative cost savings.

- *Non-Profit – Natural Gas (0.65 MTRC)*
    - Low natural gas prices combined with high incremental costs result in many measures not passing under custom cost-effective analyses.
    - Given the long-term benefits for this customer segment and the limited capital available for property owners, the Company elected to approve non-passing measures, in particular boiler replacements, to enable number of projects to move forward.

Efforts to improve for 2020: The Company will continue to seek cost-saving opportunities while ensuring that this customer segment receives necessary assistance. The Company will review its custom analysis tools and approach to ensure that they are adequately representing the savings opportunity for this segment.

- *Single Family Weatherization – Electric (0.77 MTRC)*
    - The Company provided additional funding for marketing and outreach efforts to help expand the Colorado Affordable Residential Energy ("CARE") program and an educational workshop series. This funding greatly benefits the low-income customer segment but is weighted as an administrative cost to the program, thus, hurting cost effectiveness.
    - Highly cost-effective measures such as aerators and showerheads do not see as much participation as the number of electric water heaters is very low.
    - The majority of participating customers were duel fuel or gas-only, so the product saw fewer electric-heated homes receiving insulation measures, which are also cost-effective measures for electric savings.

  Efforts to improve for 2020: The Company is working with implementer to help identify customers to participate in the evaporative cooling measure, which is a very cost-effective cooling option. The Company will also evaluate adding additional cost-effective electric measures such as heat pumps. The Company will continue to watch administrative costs while still ensuring this customer segment receives necessary assistance.

Summary of Program Changes via 60/90-Day Notice

In recognition of the need to afford the Company discretion to make changes to the Plan in order to achieve the greatest level of energy savings, the 2010 Stipulation and Settlement Agreement[5] provided for a 60/90-Day Notice process to advise interested stakeholders of changes to the Plan. A 60-Day Notice is required for any proposal to add a new DSM product, reduce rebate levels, adopt new or discontinue existing measures, or change technical assumptions or eligibility requirements. DSM roundtable participants have 30 days from the time of the Notice date to provide comments to Public Service on the proposed changes. The Company will have 30 days thereafter to consider comments. A 90-Day Notice is required for any product discontinuation.

Thirteen 60-Day Notices were posted that impacted calendar year 2019 and are shown in Table 3 below. These included the addition of new measures to the portfolio, updates to technical assumptions, and information for stakeholders regarding clarifications and intentions of the Company. One 90-Day Notice was posted in 2019. A detailed description of the changes made via 60/90-Day Notice can be found on the Company's Colorado DSM webpage: http://www.xcelenergy.com/Company/Rates_&_Regulations/Filings/Colorado_Demand-Side_Management.

[5] Proceeding No. 08A-366EG, Stipulation and Settlement Agreement, at 6.

Table 3: 60/90-Day Notices Impacting 2019

Product, Pilot, or Measure	Notice Date	Notice Type	
Business Program			
Data Center Efficiency	2/1/2019	60-Day	Comprehensive Evaluation update
Lighting Efficiency	2/22/2019	60-Day	Comprehensive Evaluation update
Multifamily Buildings (1)	2/28/2019	60-Day	Technical Assumptions and measure offerings update
Lighting Efficiency and Lighting – Small Business (1)	7/1/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
New Construction	7/1/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
Multifamily Buildings (2)	5/11/2018	60-Day	Technical Assumptions, measure offerings, and rebate update
Motor and Drive Efficiency	5/11/2018	60-Day	Technical Assumptions and measure offerings update
Cooling Efficiency	11/15/2019	60-Day	Technical Assumptions update
Lighting Efficiency and Lighting – Small Business (2)	11/15/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
Commercial Refrigeration Efficiency	12/16/2019	60-Day	Technical Assumptions and measure offerings update
Residential Program			
Evaporative Cooling (1)	2/1/2019	60-Day	Comprehensive Evaluation update
School Education Kits	2/1/2019	60-Day	Comprehensive Evaluation update
Home Lighting & Recycling	2/22/2019	60-Day	Comprehensive Evaluation update
Home Performance with Energy Star (1)	5/2/2019	60-Day	Technical Assumptions and rebate update
Energy Star New Homes (1)	8/30/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
High Efficiency Air Conditioning and Home Performance with Energy Star	8/30/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
Insulation and Air Sealing	8/30/2019	60-Day	Product eligibility update
Energy Star New Homes (2)	12/16/2019	60-Day	Technical Assumptions and rebate update
Evaporative Cooling (2)	12/16/2019	60-Day	Technical Assumptions and rebate update
Home Performance with Energy Star (2)	12/16/2019	60-Day	Technical Assumptions, measure offerings, and rebate update
Thermostat Optimization	12/16/2019	60-Day	Technical Assumption and product eligibility update
Low-Income Program			
Single-Family Weatherization	11/15/2019	60-Day	Technical Assumptions and measure offerings update
Indirect Products & Services			
Energy Star Retail Product Platform	N/A	90-Day	Product discontinuation
Demand Response			
Charging Perks Pilot	8/22/2019	60-Day	New Pilot Offering
EV Critical Peak Pricing Pilot	12/3/2019	60-Day	New Pilot Offering
Peak Day Partners Pilot	12/3/2019	60-Day	New Pilot Offering

Additional detail on the impact of these changes can be found in the 2019 Status Report section of this report, within each DSM product summary.

RFP Administrative Costs for Third-Party Implementation

As required by Decision No. C11-0442 (Proceeding No. 10A-554EG),[6] the Company continues to track administrative costs incurred for conducting requests for proposals ("RFPs"), shown in Table 4 below.

Table 4: RFP Administrative Costs in 2019

Product	2019 Expenditures
Multifamily Buildings	$4,000
Strategic Energy Management	$2,873
Demand Response/Peak Partner Rewards Services	$3,350
Residential Battery Demand Response	$8,100
TOTAL	**$18,323**

Program Achievements and Expenditures

Tables 5a and 6a below provide the electric and natural gas savings targets, budgets, and forecasted cost-effectiveness approved in the 2019 DSM Plan in Proceeding No 18A-0606EG. Table 5a presents the 2019 electric targets and budgets as approved in Proceeding No 18A-0606EG. The Company's electric energy savings targets and budgets do not require a pro-ration because the Commission established the goals and budget structures for 2019-2023 in Decisions No. C18-0417 and C18-0743 in Proceeding No. 17A-0462EG. The Commission referred the natural gas savings targets and budgets to the Biennial Planning process in Proceeding 17A-0462EG. Decision No. R19-0229 in Proceeding No. 18A-0606EG did not become final until March 28, 2019; therefore, Table 6a presents the 2019 natural gas savings targets and budgets as a pro-ration of the energy savings targets and budgets approved for 2018 in Proceeding No. 16A-0512EG and those approved for 2019 in Proceeding No. 18A-0606EG accounting for a July 1, 2019 implementation date for the 2019 DSM Plan. This follows the methodology first approved in Proceeding No. 13A-0773EG[7] for calculating goals and budgets against which the Company's performance shall be measured for purposed of calculating any incentives earned when a new DSM Plan is implemented on a date later than January 1 of the given year. See the Financial Incentive Calculations section for more details. Tables 5b and 6b provide the Company's 2019 achievements, actual expenditures, and cost-effectiveness results by product.

[6] "Public Service is directed to quantify and track any additional costs it incurs in the use of third-party DSM providers." *See* Decision No. C11-0442 at ¶81.

[7] *See* Decision No. R12-1204-1.

Table 5a: 2019 Electric Program Targets and Budgets

2019	Electric Budget	Net Generator kW	Net Generator kWh	Electric MTRC Test Ratio
Business Program				
Commercial Refrigeration Efficiency	$1,161,381	863	4,914,779	1.41
Compressed Air Efficiency	$662,960	700	4,569,137	1.49
Cooling	$4,715,198	5,939	11,449,289	1.22
Custom Efficiency	$1,035,689	515	4,796,517	1.22
Data Center Efficiency	$1,781,817	1,746	13,710,005	1.81
Energy Management Systems	$565,759	36	4,986,861	0.90
Heating Efficiency	$16,180	7	98,026	1.96
LED Street Lighting	$43,000	0	2,658,138	0.55
Lighting Efficiency	$17,578,839	20,089	156,466,275	1.43
Lighting - Small Business	$6,436,982	5,734	37,061,672	1.12
Motor & Drive Efficiency	$2,644,398	2,316	13,175,865	1.41
Multifamily Buildings	$2,143,516	1,280	11,073,258	1.31
New Construction	$11,511,392	11,436	39,338,167	1.21
Recommissioning	$475,156	380	3,746,661	0.84
Self Direct	$799,627	1,025	6,738,491	1.67
Strategic Energy Management	$5,293,986	3,270	28,972,603	1.57
General Advertising-Bus	$826,564	-	-	-
Business Program Total	**$57,692,446**	**55,335**	**343,755,746**	**1.33**
Residential Program				
Energy Efficient Showerhead	$37,727	86	1,011,152	13.36
Energy Feedback Residential	$2,990,084	5,096	21,731,615	1.22
ENERGY STAR New Homes	$1,397,326	1,066	3,092,103	0.88
Evaporative Cooling	$4,204,300	6,122	4,727,651	3.43
High Efficiency Air Conditioning	$2,039,560	1,819	1,795,587	1.25
Home Energy Squad	$448,214	395	1,647,889	1.20
Home Lighting & Recyding	$5,723,745	12,547	89,054,545	2.58
Home Performance with ENERGY STAR	$650,685	410	219,247	0.65
Insulation & Air Sealing	$440,996	455	507,035	0.89
Refrigerator & Freezer Recyding	$1,232,233	599	3,935,695	1.04
Residential Heating	$911,100	1,056	5,769,742	1.21
School Education Kits	$1,710,283	1,335	10,433,360	1.30
Water Heating	$1,083,610	739	5,018,807	1.29
Thermostat Optimization	$261,695	1,653	1,352,112	1.67
General Advertising-Res	$575,496	-	-	-
Residential Program Total	**$23,707,054**	**33,377**	**150,296,541**	**1.88**
Low-Income Program				
Energy Savings Kit	$490,368	329	2,600,605	1.36
Multifamily Weatherization	$1,081,511	407	1,889,123	0.89
Non-Profit	$1,119,608	383	1,701,178	0.99
Single-Family Weatherization	$1,430,268	226	1,778,524	0.70
Low-Income Program Total	**$4,121,754**	**1,344**	**7,969,430**	**0.90**

Table 5a: (Cont.)

2019	Electric Budget	Net Generator kW	Net Generator kWh	Electric MTRC Test Ratio
Indirect Products & Services				
Education/Market Transformation				
Business Education	$176,739	-	-	-
Business Energy Analysis	$760,350	-	-	-
Consumer Education	$899,908	-	-	-
Energy Benchmarking	$94,407	-	-	-
Energy Efficiency Financing	$60,000	-	-	-
ENERGY STAR Retail Products Platform Pilot	$509,271	-	-	-
Home Energy Audit	$444,675	-	-	-
Partners in Energy	$799,000	-	-	-
Education/Market Transformation Total	**$3,744,350**	**-**	**-**	**-**
Planning and Research				
EE Market Research	$350,791	-	-	-
EE Measurement & Verification	$12,000	-	-	-
EE Planning & Administration	$522,162	-	-	-
EE Program Evaluations	$404,005	-	-	-
EE Product Development	$1,840,082	-	-	-
Geo-targeting Pilot - EE	$14,116	-	-	-
EE Product Development Total	**$1,854,198**	**-**	**-**	**-**
EE Planning and Research Total	**$3,143,157**	**-**	**-**	**-**
EE Indirect Products & Services Total	**$6,887,507**	**-**	**-**	**-**
EE PORTFOLIO TOTAL	**$92,408,762**	**90,057**	**502,021,717**	**1.36**
Demand Response Program				
Critical Peak Pricing Pilot	$58,400	5,588	-	-
Geo-targeting Pilot - DR	$78,189	-	-	12.37
Peak Partner Rewards	$1,725,420	12,000	-	-
Residential Battery Demand Response	$323,500	389	-16,752	1.55
Residential Demand Response	$13,133,000	14,517	53,834	1.83
DR Program Total	**$15,318,509**	**32,494**	**37,082**	**1.75**
Planning and Research				
DR Planning & Administration	$58,018	-	-	-
DR Program Evaluations	$315,573	-	-	-
DR Product Development	$1,384,082	-	-	-
DR Planning and Research Total	**$1,757,673**	**-**	**-**	**-**
DR PORTFOLIO TOTAL	**$17,076,182**	**32,494**	**37,082**	**1.57**
PORTFOLIO TOTAL	**$109,484,943**	**122,551**	**502,058,799**	**1.38**

Table 5b: 2019 Electric Program Achievements and Expenditures

2019	Electric Budget	Net Generator kW	Net Generator kWh	Electric MTRC Test Ratio
Business Program				
Commercial Refrigeration Efficiency	$1,385,606	968	8,119,905	1.03
Compressed Air Efficiency	$459,769	307	1,863,803	1.43
Cooling	$2,581,581	2,357	5,158,359	1.10
Custom Efficiency	$535,018	185	1,561,339	2.35
Data Center Efficiency	$949,616	884	9,795,570	1.75
Energy Management Systems	$575,466	35	5,131,923	1.18
Heating Efficiency	$11,791	10	51,861	2.20
LED Street Lighting	$0	0	12,203,652	1.35
Lighting Efficiency	$14,904,021	17,167	117,349,881	1.66
Lighting - Small Business	$4,952,668	5,404	37,058,670	1.55
Motor & Drive Efficiency	$2,217,650	1,917	11,892,548	1.83
Multifamily Buildings	$1,380,644	1,066	9,498,057	1.77
New Construction	$12,222,865	18,245	58,011,681	1.68
Recommissioning	$233,628	153	812,028	1.19
Self Direct	$2,599,627	2,079	12,872,104	1.36
Strategic Energy Management	$4,299,623	4,601	34,213,911	2.24
General Advertising-Bus	$659,948	-	-	
Business Program Total	**$49,969,520**	**55,377**	**325,595,292**	**1.66**
Residential Program				
Energy Efficient Showerhead	$30,805	38	464,634	9.22
Energy Feedback Residential	$3,188,894	7,266	18,763,744	1.22
ENERGY STAR New Homes	$1,102,622	981	4,734,206	1.39
Evaporative Cooling	$3,725,456	7,746	5,993,754	5.26
High Efficiency Air Conditioning	$3,280,675	2,743	2,788,315	1.32
Home Energy Squad	$449,682	178	1,389,518	0.93
Home Lighting & Recyding	$7,238,233	14,093	116,719,772	2.90
Home Performance with ENERGY STAR	$155,521	153	138,975	0.87
Insulation & Air Sealing	$207,605	317	163,358	0.97
Refrigerator & Freezer Recyding	$1,118,707	431	3,570,691	1.36
Residential Heating	$728,856	982	5,335,684	1.56
School Education Kits	$1,773,105	1,095	9,985,776	1.36
Water Heating	$50,927	17	116,034	0.94
Thermostat Optimization	$234,977	1,151	863,064	1.85
General Advertising-Res	$753,415	-	-	
Residential Program Total	**$24,039,481**	**37,191**	**171,027,524**	**2.57**
Low-Income Program				
Energy Savings Kit	$349,850	229	2,125,765	1.95
Multifamily Weatherization	$1,079,499	195	2,105,751	1.13
Non-Profit	$1,122,359	420	1,736,753	1.06
Single-Family Weatherization	$1,303,440	229	1,550,777	0.77
Low-Income Program Total	**$3,855,148**	**1,073**	**7,519,046**	**1.06**

Table 5b: (Cont.)

2019	Electric Budget	Net Generator kW	Net Generator kWh	Electric MTRC Test Ratio
Indirect Products & Services				
Education/Market Transformation				
Business Education	$110,922	-	-	-
Business Energy Analysis	$358,333	-	-	-
Consumer Education	$784,777	-	-	-
Energy Benchmarking	$54,890	-	-	-
Energy Efficiency Financing	$14,048	-	-	-
ENERGY STAR Retail Products Platform Pilot	$188,901	-	-	-
Home Energy Audit	$347,818	-	-	-
Partners in Energy	$365,679	-	-	-
Education/Market Transformation Total	**$2,225,369**	**-**	**-**	**-**
Planning and Research				
EE Market Research	$135,502	-	-	-
EE Measurement & Verification	$7,848	-	-	-
EE Planning & Administration	$274,188	-	-	-
EE Program Evaluations	$492,641	-	-	-
EE Product Development	$1,268,518	-	-	-
Geo-targeting Pilot - EE	$1,587	-	-	-
Product Development Total	**$1,270,104**	**-**	**-**	**-**
Planning and Research Total	**$2,180,283**	**-**	**-**	**-**
Indirect Products & Services Total	**$4,405,652**	**-**	**-**	**-**
EE PORTFOLIO TOTAL	**$82,269,801**	**93,641**	**504,141,862**	**1.75**
Demand Response Program				
Critical Peak Pricing Pilot	$112,677	11,175	-	-
Geo-targeting Pilot - DR	$0	-	-	-
Peak Partner Rewards	$656,411	24,000	-	-
Residential Battery Demand Response	$0	-	-	-
Residential Demand Response	$11,012,497	3,689	14,552	1.15
Charging Perks Pilot	$0	-	-	-
DR Program Total	**$11,781,584**	**38,864**	**14,552**	**1.11**
Planning and Research				
DR Planning & Administration	$8,547	-	-	-
DR Program Evaluations	$214,274	-	-	-
DR Product Development	$413,431	-	-	-
DR Planning and Research Total	**$636,251**	**-**	**-**	**-**
DR PORTFOLIO TOTAL	**$12,417,836**	**38,864**	**14,552**	**1.05**
PORTFOLIO TOTAL	**$94,687,636**	**132,505**	**504,156,414**	**1.71**

Table 6a: 2019 Natural Gas Program Targets and Budgets

2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Business Program					
Commercial Refrigeration Efficiency	$41,751	8,753	209,640	$374,195	5.45
Compressed Air Efficiency	-	-	-	-	-
Cooling	-	-	-	-	-
Custom Efficiency	$54,727	3,435	62,774	$102,158	1.66
Data Center Efficiency	-	-	-	-	-
Energy Management Systems	$56,474	8,088	143,215	$189,607	1.50
Heating Efficiency	$603,550	19,741	32,708	$78,289	1.06
LED Street Lighting	-	-	-	-	-
Lighting Efficiency	-	-	-	-	-
Lighting - Small Business	$25,390	3,322	130,833	$299,485	10.95
Motor & Drive Efficiency	-	-	-	-	-
Multifamily Buildings	$865,793	38,274	44,207	$3,066,427	2.66
New Construction	$868,947	78,091	89,868	$607,882	1.14
Recommissioning	$44,086	3,530	80,078	$15,243	1.16
Self Direct	-	-	-	-	-
Strategic Energy Management	-	-	-	-	-
General Advertising-Bus	$39,149	-	-	-	-
Business Program Total	**$2,599,866**	**163,234**	**62,785**	**$4,694,136**	**1.55**
Residential Program					
Energy Efficient Showerhead	$466,699	53,079	113,733	$6,598,758	10.66
Energy Feedback Residential	$445,965	78,718	176,511	$314,728	1.74
ENERGY STAR New Homes	$2,102,650	90,607	43,092	$1,066,038	1.21
Evaporative Cooling	-	-	-	-	-
High Efficiency Air Conditioning	-	-	-	-	-
Home Energy Squad	$313,228	11,836	37,788	$356,119	1.89
Home Lighting & Recycling	-	-	-	-	-
Home Performance with ENERGY STAR	$448,809	23,050	51,359	-$266,776	0.84
Insulation & Air Sealing	$373,309	20,735	55,544	-$69,850	0.95
Refrigerator & Freezer Recycling	-	-	-	-	-
Residential Heating	$937,394	55,432	59,134	-$595,323	0.93
School Education Kits	$530,158	40,599	76,579	$4,908,049	7.84
Water Heating	$117,735	3,975	33,759	-$187,009	0.63
Thermostat Optimization	$82,002	18,933	230,889	$147,732	0.80
General Advertising-Res	$70,252	-	-	-	-
Residential Program Total	**$5,888,200**	**396,964**	**67,417**	**$12,202,213**	**1.78**

Table 6a: (Cont.)

2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Low-Income Program					
Energy Savings Kit	$148,295	14,458	97,493	$1,911,846	9.92
Multifamily Weatherization	$683,110	10,764	15,758	-$276,213	0.81
Non-Profit	$362,950	3,910	10,773	-$157,575	0.78
Single-Family Weatherization	$2,635,643	48,118	18,257	$263,148	1.09
Low-Income Program Total	**$3,829,998**	**77,250**	**20,170**	**$1,741,206**	**1.24**
Indirect Products & Services					
Education/Market Transformation					
Business Education	$19,638	-	-	-	-
Business Energy Analysis	$71,774	-	-	-	-
Consumer Education	$133,323	-	-	-	-
Energy Benchmarking	$32,745	-	-	-	-
Energy Efficiency Financing	$60,000	-	-	-	-
ENERGY STAR Retail Products Platform Pilot	$18,147	-	-	-	-
Home Energy Audit	$553,216	-	-	-	-
Partners in Energy	$44,500	-	-	-	-
Education/Market Transformation Total	**$933,344**	**-**	**-**	**-**	**-**
Planning and Research					
EE Market Research	$110,161	-	-	-	-
EE Measurement & Verification	$3,609	-	-	-	-
EE Planning & Administration	$89,408	-	-	-	-
EE Program Evaluations	$161,350	-	-	-	-
EE Product Development	$170,031	-	-	-	-
Geo-targeting Pilot - EE	$0	-	-	-	-
Product Development Total	**$170,031**	**-**	**-**	**-**	**-**
Planning and Research Total	**$534,557**	**-**	**-**	**-**	**-**
Indirect Products & Services Total	**$1,467,901**	**-**	**-**	**-**	**-**
EE PORTFOLIO TOTAL	**$13,785,965**	**637,448**	**46,239**	**$17,169,654**	**1.48**

Table 6b: 2019 Natural Gas Program Achievements and Expenditures

2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Business Program					
Commercial Refrigeration Efficiency	$16,771	1,912	114,000	$78,935	2.47
Compressed Air Efficiency	-	-	-	-	-
Cooling	-	-	-	-	-
Custom Efficiency	$55,047	5,224	94,900	$55,722	1.22
Data Center Efficiency	-	-	-	-	-
Energy Management Systems	$35,512	3,398	95,698	$32,792	1.14
Heating Efficiency	$645,582	16,422	25,438	-$58,132	0.96
LED Street Lighting	-	-	-	-	-
Lighting Efficiency	-	-	-	-	-
Lighting - Small Business	$11,524	86	7,456	$1,748	1.15
Motor & Drive Efficiency	-	-	-	-	-
Multifamily Buildings	$542,110	21,614	39,870	$2,088,321	3.45
New Construction	$823,684	101,181	122,839	$10,183,947	3.29
Recommissioning	$25,106	2,903	115,645	$40,675	2.57
Self Direct	-	-	-	-	-
Strategic Energy Management	-	-	-	-	-
General Advertising-Bus	$50,608	-	-	-	-
Business Program Total	**$2,205,944**	**152,740**	**69,240**	**$12,373,399**	**2.69**
Residential Program					
Energy Efficient Showerhead	$360,480	32,438	89,985	$4,069,988	9.63
Energy Feedback Residential	$476,554	88,743	186,218	$344,007	1.72
ENERGY STAR New Homes	$2,522,032	102,245	40,541	$1,561,345	1.24
Evaporative Cooling	-	-	-	-	-
High Efficiency Air Conditioning	$394,684	18,401	46,621	$900,367	2.84
Home Energy Squad	$261,611	3,624	13,851	$10,311	1.04
Home Lighting & Recycling	-	-	-	-	-
Home Performance with ENERGY STAR	$177,351	7,952	44,837	-$108,074	0.83
Insulation & Air Sealing	$380,203	19,457	51,175	-$184,123	0.88
Refrigerator & Freezer Recycling	-	-	-	-	-
Residential Heating	$1,773,926	69,970	39,443	$235,091	1.04
School Education Kits	$647,840	45,946	70,922	$5,550,139	7.61
Water Heating	$98,480	4,625	46,961	-$217,933	0.61
Thermostat Optimization	$155,755	25,082	161,037	$459,198	1.76
General Advertising-Res	$149,089	-	-	-	-
Residential Program Total	**$7,398,006**	**418,481**	**56,567**	**$12,471,227**	**1.69**

Table 6b: (Cont.)

2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Low-Income Program					
Energy Savings Kit	$109,711	13,949	127,147	$1,912,482	13.46
Multifamily Weatherization	$692,844	9,574	13,818	-$79,743	0.94
Non-Profit	$224,288	1,779	7,933	-$126,545	0.65
Single-Family Weatherization	$2,836,715	52,774	18,604	$387,453	1.07
Low-Income Program Total	**$3,863,558**	**78,077**	**20,209**	**$2,093,647**	**1.28**
Indirect Products & Services					
Education/Market Transformation					
Business Education	$15,645	-	-	-	-
Business Energy Analysis	$41,001	-	-	-	-
Consumer Education	$92,545	-	-	-	-
Energy Benchmarking	$15,693	-	-	-	-
Energy Efficiency Financing	$14,307	-	-	-	-
ENERGY STAR Retail Products Platform Pilot	-$2,579	-	-	-	-
Home Energy Audit	$459,911	-	-	-	-
Partners in Energy	$48,147	-	-	-	-
Education/Market Transformation Total	**$684,671**	**-**	**-**	**-**	**-**
Planning and Research					
EE Market Research	$54,473	-	-	-	-
EE Measurement & Verification	$641	-	-	-	-
EE Planning & Administration	$59,817	-	-	-	-
EE Program Evaluations	$128,897	-	-	-	-
EE Product Development	$75,984	-	-	-	-
Geo-targeting Pilot - EE	$0	-	-	-	-
Product Development Total	**$75,984**	**-**	**-**	**-**	**-**
Planning and Research Total	**$319,812**	**-**	**-**	**-**	**-**
Indirect Products & Services Total	**$1,004,483**	**-**	**-**	**-**	**-**
EE PORTFOLIO TOTAL	**$14,471,991**	**649,298**	**44,866**	**$26,254,810**	**1.78**

Table 7 below provides the CO_2 and SO_X emissions avoided for 2019 as well as cumulatively over the lifetime for each product.

Table 7: 2019 Avoided Emission

	Annual				Cumulative over Lifetime				Social Cost of Carbon	
	Tons CO_2			lbs SOx	Tons CO_2			lbs SOx	NPV of Avoided Emissions	
2019	**Electric**	**Gas**	**Total**	**Electric**	**Electric**	**Gas**	**Total**	**Electric**	**Electric**	**Gas**
Business Program										
Commercial Refrigeration Efficiency	3,519	116	3,635	4,060	43,727	2,154	45,881	30,893	$1,656,588	$72,842
Compressed Air Efficiency	737	0	737	932	12,292	0	12,292	9,189	$433,017	$0
Cooling	2,044	0	2,044	2,579	38,133	0	38,133	28,474	$1,353,000	$0
Custom Efficiency	604	316	920	781	12,074	6,321	18,395	8,918	$417,128	$209,266
Data Center Efficiency	3,993	0	3,993	4,898	63,789	0	63,789	46,649	$2,351,119	$0
Energy Management Systems	2,195	206	2,401	2,566	32,926	3,084	36,010	22,994	$1,200,695	$110,484
Heating Efficiency	22	994	1,015	26	328	17,213	17,541	232	$12,018	$594,169
LED Street Lighting	5,200	0	5,200	6,102	78,004	0	78,004	54,680	$2,855,068	$0
Lighting Efficiency	46,396	0	46,396	58,675	779,210	0	779,210	579,575	$28,518,340	$0
Lighting - Small Business	15,143	5	15,148	18,529	198,345	52	198,397	148,515	$7,635,990	$2,023
Motor & Drive Efficiency	4,986	0	4,986	5,946	75,035	0	75,035	53,458	$2,758,598	$0
Multifamily Buildings	3,848	1,308	5,156	4,749	57,158	13,947	71,105	42,853	$2,032,351	$536,409
New Construction	22,636	6,121	28,758	29,006	452,722	122,428	575,150	331,343	$15,634,084	$4,053,214
Recommissioning	388	176	564	406	2,719	1,230	3,948	1,798	$111,828	$43,717
Self Direct	5,133	0	5,133	6,436	92,385	0	92,385	68,757	$3,269,664	$0
Strategic Energy Management	13,971	0	13,971	17,107	228,743	0	228,743	167,009	$8,243,728	$0
General Advertising-Bus	0	0	0	0	0	0	0	0	$0	$0
Business Program Total	**130,816**	**9,241**	**140,057**	**162,798**	**2,167,590**	**166,428**	**2,334,018**	**1,595,338**	**$78,483,217**	**$5,622,125**
Residential Program										
Energy Efficient Showerhead	211	1,962	2,174	232	2,113	19,625	21,738	1,363	$83,339	$763,682
Energy Feedback Residential	12,046	5,369	17,415	9,382	36,138	16,107	52,245	19,461	$1,669,260	$706,108
ENERGY STAR New Homes	1,942	6,186	8,128	2,367	36,519	123,490	160,009	26,418	$1,283,108	$4,090,589
Evaporative Cooling	2,618	0	2,618	2,997	39,270	0	39,270	27,309	$1,449,633	$0
High Efficiency Air Conditioning	1,191	1,113	2,304	1,394	20,866	20,038	40,904	14,722	$746,249	$684,487
Home Energy Squad	676	219	896	695	3,926	2,158	6,084	2,621	$172,935	$84,182
Home Lighting & Recycling	56,388	0	56,388	58,360	332,127	0	332,127	223,998	$15,026,104	$0
Home Performance with ENERGY STAR	59	481	540	69	832	7,693	8,525	598	$30,755	$271,279
Insulation & Air Sealing	68	1,177	1,245	82	1,100	18,184	19,284	787	$39,471	$646,655
Refrigerator & Freezer Recycling	1,682	0	1,682	1,785	12,816	0	12,816	8,528	$547,908	$0
Residential Heating	2,164	4,233	6,397	2,668	38,924	76,197	115,121	28,823	$1,373,044	$2,602,802
School Education Kits	4,627	2,780	7,407	4,993	27,879	27,797	55,676	18,055	$1,161,808	$1,081,708
Water Heating	52	280	332	58	564	5,295	5,859	369	$21,955	$178,248
Thermostat Optimization	390	1,517	1,908	432	3,902	15,175	19,077	2,532	$153,894	$590,516
General Advertising-Res	0	0	0	0	0	0	0	0	$0	$0
Residential Program Total	**84,114**	**25,318**	**109,432**	**85,514**	**556,975**	**331,759**	**888,734**	**375,585**	**$23,759,464**	**$11,700,255**
Low-Income Program										
Energy Savings Kit	1,013	844	1,857	1,063	6,344	8,439	14,783	4,158	$275,154	$300,236
Multifamily Weatherization	831	579	1,410	1,053	15,460	8,196	23,656	11,623	$563,663	$297,622
Non-Profit	691	108	799	868	12,438	1,766	14,205	9,383	$458,221	$61,864
Single-Family Weatherization	683	3,193	3,876	775	6,514	51,271	57,785	4,426	$252,957	$1,805,895
Low-Income Program Total	**3,219**	**4,724**	**7,942**	**3,760**	**40,756**	**69,673**	**110,428**	**29,590**	**$1,549,994**	**$2,465,617**
EE PORTFOLIO TOTAL	**218,149**	**39,283**	**257,432**	**252,071**	**2,765,321**	**567,860**	**3,333,181**	**2,000,513**	**$103,792,675**	**$19,787,997**
Demand Response Program										
Critical Peak Pricing Pilot	0	0	0	0	0	0	0	0	$0	$0
Geo-targeting Pilot - DR	0	0	0	0	0	0	0	0	$0	$0
Peak Partner Rewards	0	0	0	0	0	0	0	0	$0	$0
Residential Battery Demand Response	0	0	0	0	0	0	0	0	$0	$0
Residential Demand Response	7	0	7	7	95	0	95	60	$3,565	$0
Charging Perks Pilot	0	0	0	0	0	0	0	0	$0	$0
DR PORTFOLIO TOTAL	**7**	**0**	**7**	**7**	**95**	**0**	**95**	**60**	**$3,565**	**$0**
PORTFOLIO TOTAL	**218,156**	**39,283**	**257,439**	**252,078**	**2,765,416**	**567,860**	**3,333,276**	**2,000,573**	**$103,796,240**	**$19,787,997**

Program Costs by Budget Category

The Company uses the following six budget categories to track and report its annual expenditures for DSM programs and products within its portfolio:

1. **Program Planning and Design**
   Expenditures for:
   - Labor for new pilot/product development and management.
   - Expenditures related to product development, planning, and design.

2. **Administration and Program Delivery**
   Expenditures for:
   - Labor for program managers, sales representatives, call center, rebate processing, technical consulting, and other fulfillment activities associated with delivering a product directly to the customer.
   - Labor for installation contractors, vendors, technical consultants, fulfillment contractors, and alternative providers that the Company contracts with to provide DSM services.
   - Project fulfillment, implementation and program support activities associated with delivering a program directly to the customer.

3. **Advertising / Promotion / Customer Education**
   Expenditures for:
   - Labor for communications staff and others.
   - TV, radio, newspaper, and print media; direct promotion and sales support materials; postage, promotional events; contracted outbound telephone sales.
   - Customer education through seminars, pamphlets, videos, and computer games.

4. **Participant Rebates and Incentives**
   Expenditures for:
   - Customer rebates, finance interest subsidies, subsidies for engineering studies, trade incentives, and incentives given in the form of subsidized products or equipment.

5. **Equipment and Installation**
   Expenditures for:
   - The costs to purchase energy efficient equipment and to install efficiency equipment at the customer site.

6. **Measurement and Verification**
   Expenditures for:
   - Labor for market research and load research.
   - Labor for product development staff, product development, external consultants, and product development research activities.
   - Customer surveys and program evaluation expenses.

Table 8a: 2019 Electric Program Costs by Category (Budget)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Business Program							
Commercial Refrigeration Efficiency	$0	$729,473	$45,100	$348,808	$0	$38,000	$1,161,381
Compressed Air Efficiency	$0	$200,439	$1,750	$453,553	$0	$7,218	$662,960
Cooling	$0	$2,207,912	$0	$2,492,286	$0	$15,000	$4,715,198
Custom Efficiency	$0	$797,304	$600	$233,785	$0	$4,000	$1,035,689
Data Center Efficiency	$0	$220,050	$44,000	$1,495,767	$0	$22,000	$1,781,817
Energy Management Systems	$0	$202,059	$20,000	$323,937	$0	$19,764	$565,759
Heating Efficiency	$0	$10,035	$0	$6,145	$0	$0	$16,180
LED Street Lighting	$0	$0	$43,000	$0	$0	$0	$43,000
Lighting Efficiency	$0	$3,055,429	$717,065	$13,751,346	$0	$55,000	$17,578,839
Lighting - Small Business	$0	$2,939,833	$68,545	$3,401,104	$0	$27,500	$6,436,982
Motor & Drive Efficiency	$0	$539,581	$36,450	$2,046,767	$0	$21,600	$2,644,398
Multifamily Buildings	$0	$484,341	$200,000	$1,459,175	$0	$0	$2,143,516
New Construction	$0	$2,991,157	$18,650	$8,071,508	$0	$430,077	$11,511,392
Recommissioning	$0	$182,950	$76,000	$216,206	$0	$0	$475,156
Self Direct	$0	$130,550	$1,500	$667,577	$0	$0	$799,627
Strategic Energy Management	$0	$2,327,661	$111,397	$2,656,799	$0	$198,129	$5,293,986
General Advertising-Bus	$0	$0	$826,564	$0	$0	$0	$826,564
Business Program Total	**$0**	**$17,018,774**	**$2,210,622**	**$37,624,762**	**$0**	**$838,288**	**$57,692,446**
Residential Program							
Energy Efficient Showerhead	$0	$20,065	$4,600	$13,062	$0	$0	$37,727
Energy Feedback Residential	$0	$2,990,084	$0	$0	$0	$0	$2,990,084
ENERGY STAR New Homes	$0	$497,478	$30,861	$645,751	$0	$223,236	$1,397,326
Evaporative Cooling	$0	$1,108,927	$909,373	$2,151,000	$0	$35,000	$4,204,300
High Efficiency Air Conditioning	$0	$330,525	$55,000	$1,606,035	$0	$48,000	$2,039,560
Home Energy Squad	$0	$70,145	$49,424	$114,227	$211,918	$2,500	$448,214
Home Lighting & Recycling	$0	$947,283	$643,506	$4,127,957	$0	$5,000	$5,723,745
Home Performance with ENERGY STAR	$0	$516,782	$0	$103,903	$0	$30,000	$650,685
Insulation & Air Sealing	$0	$21,189	$405	$404,220	$0	$15,182	$440,996
Refrigerator & Freezer Recycling	$0	$666,886	$205,347	$350,000	$0	$10,000	$1,232,233
Residential Heating	$0	$82,500	$91,000	$730,100	$0	$7,500	$911,100
School Education Kits	$0	$527,885	$5,832	$1,176,566	$0	$0	$1,710,283
Water Heating	$0	$229,710	$281,500	$562,400	$0	$10,000	$1,083,610
Thermostat Optimization	$0	$77,994	$0	$177,327	$0	$6,374	$261,695
General Advertising-Res	$0	$0	$575,496	$0	$0	$0	$575,496
Residential Program Total	**$0**	**$8,087,453**	**$2,852,344**	**$12,162,547**	**$211,918**	**$392,792**	**$23,707,054**
Low-Income Program							
Energy Savings Kit	$0	$148,442	$108,379	$229,047	$0	$4,500	$490,368
Multifamily Weatherization	$0	$169,785	$10,851	$885,524	$0	$15,351	$1,081,511
Non-Profit	$0	$212,162	$3,274	$876,346	$0	$27,825	$1,119,608
Single-Family Weatherization	$0	$245,186	$80,000	$985,420	$0	$119,662	$1,430,268
Low-Income Program Total	**$0**	**$775,575**	**$202,504**	**$2,976,337**	**$0**	**$167,338**	**$4,121,754**

Table 8a: (Cont.)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Indirect Products & Services							
Education/Market Transformation							
Business Education	$0	$0	$176,739	$0	$0	$0	$176,739
Business Energy Analysis	$0	$109,350	$249,000	$402,000	$0	$0	$760,350
Consumer Education	$0	$389,381	$510,527	$0	$0	$0	$899,908
Energy Benchmarking	$0	$94,407	$0	$0	$0	$0	$94,407
Energy Efficiency Financing	$0	$33,000	$17,000	$10,000	$0	$0	$60,000
ENERGY STAR Retail Products Platform Pilot	$0	$498,384	$0	$0	$0	$10,887	$509,271
Home Energy Audit	$0	$193,265	$17,014	$196,992	$0	$37,404	$444,675
Partners in Energy	$0	$719,000	$10,000	$0	$0	$70,000	$799,000
Education/Market Transformation Total	**$0**	**$2,036,787**	**$980,280**	**$608,992**	**$0**	**$118,291**	**$3,744,350**
Planning and Research							
EE Market Research	$0	$350,791	$0	$0	$0	$0	$350,791
EE Measurement & Verification	$0	$12,000	$0	$0	$0	$0	$12,000
EE Planning & Administration	$0	$522,162	$0	$0	$0	$0	$522,162
EE Program Evaluations	$0	$32,005	$0	$0	$0	$372,000	$404,005
EE Product Development	$0	$1,840,082	$0	$0	$0	$0	$1,840,082
Geo-targeting Pilot - EE	$0	$7,458	$0	$6,658	$0	$0	$14,116
Product Development Total	**$0**	**$1,847,540**	**$0**	**$6,658**	**$0**	**$0**	**$1,854,198**
Planning and Research Total	**$0**	**$2,764,498**	**$0**	**$6,658**	**$0**	**$372,000**	**$3,143,157**
Indirect Products & Services Total	**$0**	**$4,801,286**	**$980,280**	**$615,650**	**$0**	**$490,291**	**$6,887,507**
EE PORTFOLIO TOTAL	**$0**	**$30,683,088**	**$6,245,751**	**$53,379,296**	**$211,918**	**$1,888,708**	**$92,408,762**
Demand Response Program							
Critical Peak Pricing Pilot	$0	$21,200	$5,000	$0	$7,200	$25,000	$58,400
Geo-targeting Pilot - DR	$0	$67,542	$0	$10,647	$0	$0	$78,189
Peak Partner Rewards	$0	$253,420	$142,000	$1,330,000	$0	$0	$1,725,420
Residential Battery Demand Response	$0	$177,500	$5,250	$133,750	$0	$7,000	$323,500
Residential Demand Response	$0	$3,314,000	$1,150,000	$8,569,000	$0	$100,000	$13,133,000
Demand Response Total	**$0**	**$3,833,662**	**$1,302,250**	**$10,043,397**	**$7,200**	**$132,000**	**$15,318,509**
Planning and Research							
DR Planning & Administration	$0	$58,018	$0	$0	$0	$0	$58,018
DR Program Evaluations	$0	$15,573	$0	$0	$0	$300,000	$315,573
DR Product Development	$0	$1,384,082	$0	$0	$0	$0	$1,384,082
DR Planning and Research Total	**$0**	**$1,457,673**	**$0**	**$0**	**$0**	**$300,000**	**$1,757,673**
DR PORTFOLIO TOTAL	**$0**	**$5,291,335**	**$1,302,250**	**$10,043,397**	**$7,200**	**$432,000**	**$17,076,182**
PORTFOLIO TOTAL	**$0**	**$35,974,422**	**$7,548,001**	**$63,422,693**	**$219,118**	**$2,320,708**	**$109,484,943**

Table 8b: 2019 Electric Program Costs by Category (Actual Expenditures)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Business Program							
Commercial Refrigeration Efficiency	$0	$759,733	$374	$610,950	$0	$14,550	$1,385,606
Compressed Air Efficiency	$0	$170,575	$36	$285,087	$0	$4,071	$459,769
Cooling	$0	$1,260,767	$108	$1,304,956	$0	$15,750	$2,581,581
Custom Efficiency	$0	$426,415	$476	$106,869	$0	$1,258	$535,018
Data Center Efficiency	$0	$246,692	$72	$699,056	$0	$3,795	$949,616
Energy Management Systems	$0	$190,812	$0	$368,616	$0	$16,039	$575,466
Heating Efficiency	$0	$8,534	$61	$3,196	$0	$0	$11,791
LED Street Lighting	$0	$0	$0	$0	$0	$0	$0
Lighting Efficiency	$0	$2,277,229	$60,756	$12,535,451	$0	$30,585	$14,904,021
Lighting - Small Business	$0	$2,039,425	$498	$2,895,504	$0	$17,241	$4,952,668
Motor & Drive Efficiency	$0	$436,633	$108	$1,765,729	$0	$15,180	$2,217,650
Multifamily Buildings	$0	$325,079	$0	$1,055,564	$0	$0	$1,380,644
New Construction	$0	$2,429,010	$144	$9,306,108	$0	$487,602	$12,222,865
Recommissioning	$0	$153,916	$54	$79,657	$0	$0	$233,628
Self Direct	$0	$141,554	$36	$2,458,037	$0	$0	$2,599,627
Strategic Energy Management	$0	$873,028	$72	$3,367,866	$0	$58,657	$4,299,623
General Advertising-Bus	$0	$17,222	$642,726	$0	$0	$0	$659,948
Business Program Total	**$0**	**$11,756,624**	**$705,523**	**$36,842,646**	**$0**	**$664,728**	**$49,969,520**
Residential Program							
Energy Efficient Showerhead	$0	$21,671	$31	$9,103	$0	$0	$30,805
Energy Feedback Residential	$0	$3,188,644	$250	$0	$0	$0	$3,188,894
ENERGY STAR New Homes	$0	$200,848	$1,893	$777,346	$0	$122,535	$1,102,622
Evaporative Cooling	$0	$765,441	$461,938	$2,494,778	$0	$3,300	$3,725,456
High Efficiency Air Conditioning	$0	$478,001	$21,768	$2,737,008	$0	$43,898	$3,280,675
Home Energy Squad	$0	$122,718	$67,916	$79,282	$179,766	$0	$449,682
Home Lighting & Recycling	$0	$844,778	$879,137	$5,511,318	$0	$3,000	$7,238,233
Home Performance with ENERGY STAR	$0	$70,075	$0	$68,706	$0	$16,741	$155,521
Insulation & Air Sealing	$0	$26,221	$250	$179,934	$0	$1,200	$207,605
Refrigerator & Freezer Recycling	$0	$684,325	$17,257	$414,125	$0	$3,000	$1,118,707
Residential Heating	$0	$72,676	$0	$654,080	$0	$2,100	$728,856
School Education Kits	$0	$565,959	$488	$1,206,658	$0	$0	$1,773,105
Water Heating	$0	$38,195	$225	$12,506	$0	$0	$50,927
Thermostat Optimization	$0	$18,628	$0	$216,349	$0	$0	$234,977
General Advertising-Res	$0	$28,309	$725,106	$0	$0	$0	$753,415
Residential Program Total	**$0**	**$7,126,489**	**$2,176,257**	**$14,361,194**	**$179,766**	**$195,774**	**$24,039,481**
Low-Income Program							
Energy Savings Kit	$0	$117,029	$75	$228,546	$0	$4,200	$349,850
Multifamily Weatherization	$0	$148,625	$30,000	$885,524	$0	$15,351	$1,079,499
Non-Profit	$0	$169,099	$30,000	$896,970	$0	$26,291	$1,122,359
Single-Family Weatherization	$0	$95,183	$165,000	$993,401	$0	$49,857	$1,303,440
Low-Income Program Total	**$0**	**$529,935**	**$225,075**	**$3,004,440**	**$0**	**$95,698**	**$3,855,148**

Table 8b: (Cont.)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Indirect Products & Services							
Education/Market Transformation							
Business Education	$0	$50,995	$59,927	$0	$0	$0	$110,922
Business Energy Analysis	$0	$113,296	$312	$244,725	$0	$0	$358,333
Consumer Education	$0	$362,734	$422,044	$0	$0	$0	$784,777
Energy Benchmarking	$0	$54,890	$0	$0	$0	$0	$54,890
Energy Efficiency Financing	$0	$14,048	$0	$0	$0	$0	$14,048
ENERGY STAR Retail Products Platform Pilot	$0	$188,901	$0	$0	$0	$0	$188,901
Home Energy Audit	$0	$149,266	$38	$165,614	$0	$32,900	$347,818
Partners in Energy	$0	$365,679	$0	$0	$0	$0	$365,679
Education/Market Transformation Total	**$0**	**$1,299,809**	**$482,321**	**$410,339**	**$0**	**$32,900**	**$2,225,369**
Planning and Research							
EE Market Research	$0	$274,188	$0	$0	$0	$0	$274,188
EE Measurement & Verification	$0	$20,214	$1,875	$0	$0	$470,553	$492,641
EE Planning & Administration	$0	$135,502	$0	$0	$0	$0	$135,502
EE Program Evaluations	$0	$7,848	$0	$0	$0	$0	$7,848
EE Product Development	$0	$1,246,107	$0	$0	$0	$22,411	$1,268,518
Geo-targeting Pilot - EE	$0	$1,587	$0	$0	$0	$0	$1,587
Product Development Total	**$0**	**$1,247,693**	**$0**	**$0**	**$0**	**$22,411**	**$1,270,104**
Planning and Research Total	**$0**	**$1,685,445**	**$1,875**	**$0**	**$0**	**$492,964**	**$2,180,283**
Indirect Products & Services Total	**$0**	**$2,985,253**	**$484,196**	**$410,339**	**$0**	**$525,864**	**$4,405,652**
EE PORTFOLIO TOTAL	**$0**	**$22,398,302**	**$3,591,051**	**$54,618,619**	**$179,766**	**$1,482,063**	**$82,269,801**
Demand Response Program							
Critical Peak Pricing Pilot	$0	$112,677	$0	$0	$0	$0	$112,677
Geo-targeting Pilot - DR	$0	$0	$0	$0	$0	$0	$0
Peak Partner Rewards	$0	$211,801	$80,000	$364,610	$0	$0	$656,411
Residential Battery Demand Response	$0	**$0**	**$0**	**$0**	**$0**	**$0**	$0
Residential Demand Response	$0	$2,135,957	$892,028	$7,955,409	$0	$29,103	$11,012,497
Charging Perks Pilot	$0	$0	$0	$0	$0	$0	$0
DR Program Total	**$0**	**$2,460,434**	**$972,028**	**$8,320,019**	**$0**	**$29,103**	**$11,781,584**
Planning and Research							
DR Planning & Administration	$0	$8,547	$0	$0	$0	$0	$8,547
DR Program Evaluations	$0	$17,254	$0	$0	$0	$197,020	$214,274
DR Product Development	$0	$413,431	$0	$0	$0	$0	$413,431
DR Planning and Research Total	**$0**	**$439,231**	**$0**	**$0**	**$0**	**$197,020**	**$636,251**
DR PORTFOLIO TOTAL	**$0**	**$2,899,665**	**$972,028**	**$8,320,019**	**$0**	**$226,123**	**$12,417,836**
PORTFOLIO TOTAL	**$0**	**$25,297,967**	**$4,563,079**	**$62,938,639**	**$179,766**	**$1,708,186**	**$94,687,636**

Table 9a: 2019 Gas Program Costs by Category (Budget)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Business Program							
Commercial Refrigeration Efficiency	$0	$7,349	$0	$34,402	$0	$0	$41,751
Compressed Air Efficiency	$0	$0	$0	$0	$0	$0	$0
Cooling	$0	$0	$0	$0	$0	$0	$0
Custom Efficiency	$0	$20,060	$0	$34,667	$0	$0	$54,727
Data Center Efficiency	$0	$0	$0	$0	$0	$0	$0
Energy Management Systems	$0	$21,911	$468	$34,095	$0	$0	$56,474
Heating Efficiency	$0	$220,254	$16,793	$352,649	$0	$13,854	$603,550
LED Street Lighting	$0	$0	$0	$0	$0	$0	$0
Lighting Efficiency	$0	$0	$0	$0	$0	$0	$0
Lighting - Small Business	$0	$25,201	$0	$188	$0	$0	$25,390
Motor & Drive Efficiency	$0	$0	$0	$0	$0	$0	$0
Multifamily Buildings	$0	$102,099	$0	$763,694	$0	$0	$865,793
New Construction	$0	$308,306	$4,415	$499,410	$0	$56,816	$868,947
Recommissioning	$0	$15,545	$381	$28,160	$0	$0	$44,086
Self Direct	$0	$0	$0	$0	$0	$0	$0
Strategic Energy Management	$0	$0	$0	$0	$0	$0	$0
General Advertising-Bus	$0	$0	$39,149	$0	$0	$0	$39,149
Business Program Total	**$0**	**$720,726**	**$61,205**	**$1,747,265**	**$0**	**$70,670**	**$2,599,866**
Residential Program							
Energy Efficient Showerhead	$0	$219,867	$74,002	$172,829	$0	$0	$466,699
Energy Feedback Residential	$0	$445,965	$0	$0	$0	$0	$445,965
ENERGY STAR New Homes	$0	$464,481	$79,326	$1,308,881	$0	$249,962	$2,102,650
Evaporative Cooling	$0	$0	$0	$0	$0	$0	$0
High Efficiency Air Conditioning	$0	$0	$0	$0	$0	$0	$0
Home Energy Squad	$0	$68,996	$92,070	$26,152	$123,162	$2,847	$313,228
Home Lighting & Recycling	$0	$0	$0	$0	$0	$0	$0
Home Performance with ENERGY STAR	$0	$136,442	$0	$272,436	$0	$39,931	$448,809
Insulation & Air Sealing	$0	$29,740	$2,072	$331,154	$0	$10,343	$373,309
Refrigerator & Freezer Recycling	$0	$0	$0	$0	$0	$0	$0
Residential Heating	$0	$59,808	$44,979	$824,173	$0	$8,434	$937,394
School Education Kits	$0	$358,627	$2,812	$168,719	$0	$0	$530,158
Water Heating	$0	$18,036	$2,074	$77,927	$0	$19,698	$117,735
Thermostat Optimization	$0	$29,753	$0	$50,436	$0	$1,813	$82,002
General Advertising-Res	$0	$0	$70,252	$0	$0	$0	$70,252
Residential Program Total	**$0**	**$1,831,715**	**$367,588**	**$3,232,707**	**$123,162**	**$333,028**	**$5,888,200**

Table 9a: (Cont.)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Low-Income Program							
Energy Savings Kit	$0	$54,724	$36,471	$53,370	$0	$3,729	$148,295
Multifamily Weatherization	$0	$100,122	$912	$570,541	$0	$11,536	$683,110
Non-Profit	$0	$68,412	$997	$279,207	$0	$14,334	$362,950
Single-Family Weatherization	$0	$189,304	$27,143	$2,315,845	$0	$103,352	$2,635,643
Low-Income Program Total	**$0**	**$412,562**	**$65,522**	**$3,218,963**	**$0**	**$132,951**	**$3,829,998**
Indirect Products & Services							
Education/Market Transformation							
Business Education	$0	$4,200	$15,438	$0	$0	$0	$19,638
Business Energy Analysis	$0	$5,521	$11,042	$55,211	$0	$0	$71,774
Consumer Education	$0	$47,191	$86,132	$0	$0	$0	$133,323
Energy Benchmarking	$0	$32,745	$0	$0	$0	$0	$32,745
Energy Efficiency Financing	$0	$43,000	$17,000	$0	$0	$0	$60,000
ENERGY STAR Retail Products Platform Pilot	$0	$17,115	$0	$0	$0	$1,032	$18,147
Home Energy Audit	$0	$234,426	$55,395	$227,472	$0	$35,923	$553,216
Partners in Energy	$0	$40,100	$500	$0	$0	$3,900	$44,500
Education/Market Transformation Total	**$0**	**$424,298**	**$185,507**	**$282,683**	**$0**	**$40,855**	**$933,344**
Planning and Research							
EE Market Research	$0	$110,161	$0	$0	$0	$0	$110,161
EE Measurement & Verification	$0	$3,609	$0	$0	$0	$0	$3,609
EE Planning & Administration	$0	$89,408	$0	$0	$0	$0	$89,408
EE Program Evaluations	$0	$9,776	$0	$0	$0	$151,574	$161,350
EE Product Development	$0	$170,031	$0	$0	$0	$0	$170,031
Geo-targeting Pilot - EE	$0	$0	$0	$0	$0	$0	$0
Product Development Total	**$0**	**$170,031**	**$0**	**$0**	**$0**	**$0**	**$170,031**
Planning and Research Total	**$0**	**$382,984**	**$0**	**$0**	**$0**	**$151,574**	**$534,557**
Indirect Products & Services Total	**$0**	**$807,282**	**$185,507**	**$282,683**	**$0**	**$192,429**	**$1,467,901**
EE PORTFOLIO TOTAL	**$0**	**$3,772,285**	**$679,822**	**$8,481,618**	**$123,162**	**$729,078**	**$13,785,965**

Table 9b: 2019 Gas Program Costs by Category (Actual Expenditures)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Business Program							
Commercial Refrigeration Efficiency	$0	$7,708	$0	$9,063	$0	$0	$16,771
Compressed Air Efficiency	$0	$0	$0	$0	$0	$0	$0
Cooling	$0	$0	$0	$0	$0	$0	$0
Custom Efficiency	$0	$30,993	$36	$24,018	$0	$0	$55,047
Data Center Efficiency	$0	$0	$0	$0	$0	$0	$0
Energy Management Systems	$0	$12,317	$90	$23,104	$0	$0	$35,512
Heating Efficiency	$0	$214,030	$36	$417,416	$0	$14,100	$645,582
LED Street Lighting	$0	$0	$0	$0	$0	$0	$0
Lighting Efficiency	$0	$0	$0	$0	$0	$0	$0
Lighting - Small Business	$0	$11,426	$0	$98	$0	$0	$11,524
Motor & Drive Efficiency	$0	$0	$0	$0	$0	$0	$0
Multifamily Buildings	$0	$192,270	$0	$349,840	$0	$0	$542,110
New Construction	$0	$224,133	$0	$520,082	$0	$79,468	$823,684
Recommissioning	$0	$24,060	$0	$1,046	$0	$0	$25,106
Self Direct	$0	$0	$0	$0	$0	$0	$0
Strategic Energy Management	$0	$0	$0	$0	$0	$0	$0
General Advertising-Bus	$0	$2,088	$48,520	$0	$0	$0	$50,608
Business Program Total	**$0**	**$719,026**	**$48,683**	**$1,344,667**	**$0**	**$93,568**	**$2,205,944**
Residential Program							
Energy Efficient Showerhead	$0	$244,776	$657	$115,047	$0	$0	$360,480
Energy Feedback Residential	$0	$476,554	$0	$0	$0	$0	$476,554
ENERGY STAR New Homes	$0	$383,777	$4,416	$1,847,924	$0	$285,915	$2,522,032
Evaporative Cooling	$0	$0	$0	$0	$0	$0	$0
High Efficiency Air Conditioning	$0	$0	$0	$394,684	$0	$0	$394,684
Home Energy Squad	$0	$100,846	$89,108	$11,652	$60,006	$0	$261,611
Home Lighting & Recycling	$0	$0	$0	$0	$0	$0	$0
Home Performance with ENERGY STAR	$0	$49,984	$0	$110,627	$0	$16,741	$177,351
Insulation & Air Sealing	$0	$21,033	$0	$357,370	$0	$1,800	$380,203
Refrigerator & Freezer Recycling	$0	$0	$0	$0	$0	$0	$0
Residential Heating	$0	$67,987	$7,289	$1,687,550	$0	$11,100	$1,773,926
School Education Kits	$0	$439,152	$244	$208,444	$0	$0	$647,840
Water Heating	$0	$26,048	$0	$69,133	$0	$3,300	$98,480
Thermostat Optimization	$0	$4,520	$0	$151,235	$0	$0	$155,755
General Advertising-Res	$0	$8,731	$140,358	$0	$0	$0	$149,089
Residential Program Total	**$0**	**$1,823,407**	**$242,072**	**$4,953,666**	**$60,006**	**$318,856**	**$7,398,006**

Table 9b: (Cont.)

2019	Program Planning & Design	Admin & Program Delivery	Advertising/ Promotion/ Customer Ed	Participant Rebates and Incentives	Equip & Install	M&V	Total
Low-Income Program							
Energy Savings Kit	$0	$57,035	$75	$50,801	$0	$1,800	$109,711
Multifamily Weatherization	$0	$98,068	$20,000	$561,711	$0	$13,065	$692,844
Non-Profit	$0	$70,671	$20,000	$123,649	$0	$9,968	$224,288
Single-Family Weatherization	$0	$164,082	$85,000	$2,462,509	$0	$125,123	$2,836,715
Low-Income Program Total	**$0**	**$389,857**	**$125,075**	**$3,198,670**	**$0**	**$149,956**	**$3,863,558**
Indirect Products & Services							
Education/Market Transformation							
Business Education	$0	$10,702	$4,943	$0	$0	$0	$15,645
Business Energy Analysis	$0	$13,094	$0	$27,907	$0	$0	$41,001
Consumer Education	$0	$55,367	$37,178	$0	$0	$0	$92,545
Energy Benchmarking	$0	$15,693	$0	$0	$0	$0	$15,693
Energy Efficiency Financing	$0	$14,307	$0	$0	$0	$0	$14,307
ENERGY STAR Retail Products Platform Pilot	$0	-$2,579	$0	$0	$0	$0	-$2,579
Home Energy Audit	$0	$133,684	$213	$293,114	$0	$32,900	$459,911
Partners in Energy	$0	$48,147	$0	$0	$0	$0	$48,147
Education/Market Transformation Total	**$0**	**$288,417**	**$42,333**	**$321,021**	**$0**	**$32,900**	**$684,671**
Planning and Research							
EE Market Research	$0	$54,473	$0	$0	$0	$0	$54,473
EE Measurement & Verification	$0	$641	$0	$0	$0	$0	$641
EE Planning & Administration	$0	$59,817	$0	$0	$0	$0	$59,817
EE Program Evaluations	$0	$10,634	$625	$0	$0	$117,638	$128,897
EE Product Development	$0	$74,297	$0	$0	$0	$1,687	$75,984
Geo-targeting Pilot - EE	$0	$0	$0	$0	$0	$0	$0
Product Development Total	**$0**	**$74,297**	**$0**	**$0**	**$0**	**$1,687**	**$75,984**
Planning and Research Total	**$0**	**$199,862**	**$625**	**$0**	**$0**	**$119,325**	**$319,812**
Indirect Products & Services Total	**$0**	**$488,279**	**$42,958**	**$321,021**	**$0**	**$152,225**	**$1,004,483**
EE PORTFOLIO TOTAL	**$0**	**$3,420,569**	**$458,788**	**$9,818,024**	**$60,006**	**$714,605**	**$14,471,991**

Participation Analysis

Decision No. C14-0731 within the 2013 DSM Strategic Issues Proceeding[8] directed the Company to "collect, define, and analyze participant and non-participant rates. In future DSM plan filings, the Company shall explain how these data were collected and used for each program."[9] Furthermore, the Commission clarified in Decision No. C14-0997 that "we also require that the Company set forth proposals for tracking participants and non-participants for specific programs and measures and to provide estimates of participant and non-participant counts in its DSM Plans. While we recognize that, for certain programs or measures it may be difficult or prohibitively expensive to collect such data, it is reasonable for the Commission to consider plans for tracking participation and non-participation when programs and measures are proposed in a DSM Plan filing and when we review the cost-effectiveness and ratepayer impacts of those programs and measures."[10]

2019 Participation

Participant counts have been reported at the customer level (rather than at the premise level as had been forecasted in the 2014 DSM Plan) for each electric DSM product and by customer class, as well as the portfolio total counts for the 2019 calendar year. These values are shown in Tables 10a, 10b, 10c and 10d.

Historical Participation Analysis

The Company believes a thorough analysis of participants and non-participants must go beyond a counting of participation each year. It must also consider the amount of cumulative consumption savings realized by individual customers each year, due to the participation in electric DSM programs over several program years. To this end, the Company has identified the estimated percentages of business and residential customers by their range of consumption savings attributable to DSM participation since the expansion of the DSM programs in 2009. The extent of individual participation is further compared to the cumulative rate impacts of the DSM program since 2009. The combination of these factors results in identification of the level and distribution of bill savings among business and residential customers. This data is shown in Table 10e, 10f, and 10g.

[8] Proceeding No. 13A-0686EG.
[9] *See* Decision No. C14-0731 at ¶115.
[10] *See* Decision No. C14-0997 at ¶24.

Table 10a: 2019 Electric Participation, Percentage of Total by Customer Class

	Total Unique DSM Participants (Estimate)[11]		Total PSCo Customers[12]		PSCo Customers Participating in DSM		PSCo Customers Not Participating in DSM	
Gas	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
2019 Total	1,188,262		1,387,315		1,188,262	85.65%	199,053	14.35%
Business	10,995	0.93%	100,430	7.24%	10,995	10.95%	89,435	89.05%
Residential	1,177,267	99.07%	1,286,885	92.76%	1,177,267	91.48%	109,618	8.52%

Table 10b: 2019 Gas Participation, Percentage of Total by Customer Class

	Total Unique DSM Participants (Estimate)[13]		Total DSM-Eligible PSCo Customers		PSCo Customers Participating in DSM		PSCo Customers Not Participating in DSM	
Gas	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
2019 Total	479,119		1,417,578		479,119	33.80%	938,459	66.20%
Business	470	0.10%	101,202	7.14%	470	0.46%	100,732	99.54%
Residential	478,649	99.90%	1,316,376	92.86%	478,649	36.36%	837,727	63.64%

[11] Participation by DSM product is shown in Table 10c below. Total estimated participation is the sum of DSM product participation estimates less the number of duplicates (participation in multiple products).
[12] Customer count as of 12/31/2019.
[13] Participation by DSM product is shown in Table 10c below. Total estimated participation is the sum of DSM product participation estimates less the number of duplicates (participation in multiple products).

Table 10c: 2019 Electric Participation, Average Rebate and Savings

Product	2019 Participants	Average Rebate per Customer	Average kWh Savings per Customer
Business Program			
Commercial Refrigeration Efficiency	250	$2,443.80	30,481
Compressed Air Efficiency	51	$5,589.93	42,315
Cooling	1,009	$1,293.32	5,601
Custom Efficiency	52	$2,055.17	32,440
Data Center Efficiency	12	$58,254.70	900,303
Energy Management Systems	26	$14,177.53	212,784
Heating Efficiency	14	$228.27	3,650
Lighting Efficiency	3,265	$3,839.34	44,394
Lighting - Small Business	3,970	$729.35	9,780
Motor & Drive Efficiency	291	$6,067.80	59,221
Multifamily Buildings	213	$4,955.70	41,812
New Construction	151	$61,629.86	380,395
Recommissioning	15	$5,310.49	56,841
Self Direct	5	$491,607.40	2,654,148
Strategic Energy Management	45	$74,841.47	784,789
Residential Program			
Energy Efficient Showerhead	1,850	$4.92	378
Energy Feedback Residential	296,019	$0.00	59
ENERGY STAR New Homes	2,957	$262.88	1,618
Evaporative Cooling	4,876	$511.64	1,580
High Efficiency Air Conditioning	6,004	$455.86	620
Home Energy Squad	1,000	$79.28	1,291
Home Lighting & Recycling	258,866	$21.29	696
Home Performance with ENERGY STAR	165	$416.40	673
Insulation & Air Sealing	500	$359.87	351
Refrigerator & Freezer Recycling	6,915	$59.89	831
Residential Heating	6,592	$99.22	800
School Education Kits	39,553	$30.51	278
Water Heating	28	$446.66	3,848
Thermostat Optimization	4,889	$44.25	164
Low-Income Program			
Energy Savings Kit	7,283	$31.38	354
Multifamily Weatherization	27	$32,797.17	72,921
Non-Profit	32	$28,030.30	51,093
Single-Family Weatherization	1,719	$577.89	843
Indirect Products & Services			
Business Education	1,997	$0.00	0
Business Energy Analysis	257	$0.00	0
Consumer Education	43,062	$0.00	0
Energy Efficiency Financing	6	$0.00	0
Home Energy Audit	1,350	$0.00	0
Planning and Research			
ENERGY STAR Retail Prod Platform Pilot	6,640	$0.00	0
Demand Response Program			
Saver's Switch	3,323	N/A	11

Table 10d: 2019 Natural Gas Participation

Product	2019 Participants	Average Rebate Per Customer	Average Dth Savings Per Customer
Business Program			
Commercial Refrigeration Efficiency	13	$697.12	147.1
Custom Efficiency	7	$3,431.14	857.8
Energy Management Systems	10	$2,310.40	377.6
Heating Efficiency	168	$2,484.62	114.0
Lighting - Small Business	8	$12.25	11.6
Multifamily Buildings	176	$1,987.73	122.8
New Construction	84	$6,191.46	1239.6
Recommissioning	4	$261.61	806.5
Residential Program			
Energy Efficient Showerhead	16,388	$7.02	3.2
Energy Feedback Residential	398,481	$0.00	0.2
ENERGY STAR New Homes	5,080	$363.76	21.9
High Efficiency Air Conditioning	3,249	$121.48	8.4
Home Energy Squad	904	$12.89	4.0
Home Performance with ENERGY STAR	182	$607.84	37.7
Insulation & Air Sealing	782	$457.00	28.0
Residential Heating	10,710	$157.57	7.6
School Education Kits	42,067	$4.96	2.3
Water Heating	806	$85.77	6.4
Thermostat Optimization	5,341	$28.32	4.7
Low-Income Program			
Energy Savings Kit	3,211	$15.82	6.3
Multifamily Weatherization	34	$16,520.90	281.6
Non-Profit	36	$3,434.69	49.4
Single-Family Weatherization	1,979	$1,244.32	26.7
Indirect Products & Services			
Business Education	93	$0.00	0.0
Business Energy Analysis	170	$164.16	0.0
Consumer Education	7,100	$0.00	0.0
Energy Efficiency Financing	13	$0.00	0.0
Home Energy Audit	1,976	$148.34	0.0

Table 10e: Estimated Customer Consumption Savings Range, 2009-2019

Year	Total Non-Participants		DSM Participants Saving 1-2% of Annual Electric Consumption		DSM Participants Savings 3-5% of Annual Electric Consumption		DSM Participants Saving 6-10% of Annual Electric Consumption		DSM Participants Saving 11-25% of Annual Electric Consumption		DSM Participants Saving More than 25% of Annual Electric Consumption	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
2009												
BUS	95,264	98.22%	583	0.60%	325	0.34%	225	0.23%	418	0.43%	175	0.18%
RES	1,002,895	83.78%	46,664	3.90%	49,289	4.12%	64,964	5.43%	29,559	2.47%	3,660	0.31%
2010												
BUS	93,700	96.61%	1,063	1.10%	574	0.59%	501	0.52%	627	0.65%	524	0.54%
RES	841,077	70.26%	75,558	6.31%	67,823	5.67%	121,557	10.15%	80,156	6.70%	10,859	0.91%
2011												
BUS	90,922	93.74%	1,703	1.76%	1,117	1.15%	996	1.03%	1,374	1.42%	878	0.91%
RES	521,924	43.60%	68,964	5.76%	116,415	9.73%	237,175	19.81%	214,875	17.95%	37,678	3.15%
2012												
BUS	86,193	88.87%	2,319	2.39%	1,749	1.80%	1,689	1.74%	2,861	2.95%	2,179	2.25%
RES	481,788	40.25%	78,694	6.57%	133,753	11.17%	245,966	20.55%	217,324	18.16%	39,507	3.30%
2013												
BUS	83,530	86.12%	2,570	2.65%	2.177	2.24%	2,295	2.37%	3,612	3.72%	2,805	2.89%
RES	352,847	29.48%	73,693	6.16%	153,450	12.82%	276,372	23.09%	282,966	23.64%	57,704	4.82%
2014												
BUS	80,168	82.66%	3,008	3.10%	2,755	2.84%	2,828	2.92%	4,510	4.65%	3,721	3.84%
RES	237,454	19.84%	57,010	4.76%	178,786	14.94%	303,588	25.36%	343,422	28.69%	76,770	6.41%
2015												
BUS	71,425	73.28%	8,894	9.13%	4,010	4.11%	3,559	3.65%	5,479	5.62%	4,098	4.20%
RES	108,652	8.96%	100,007	8.24%	200,298	16.51%	322,245	26.57%	389,218	32.09%	92,540	7.63%
2016												
BUS	70,516	65.57%	13,556	12.61%	5,818	5.41%	4,935	4.59%	6,724	6.25%	5,991	5.57%
RES	89,486	7.27%	86,136	7.00%	181,845	14.78%	319,593	25.98%	437,535	33.56%	115,671	9.40%
2017												
BUS	59,747	59.86%	17,726	17.76%	7,036	7.05%	5,041	5.05%	5,964	5.98%	4,291	4.30%
RES	57,396	4.60%	67,535	5.42%	165,542	13.28%	314,079	25.19%	490,044	39.31%	152,172	12.21%
2018												
BUS	77,235	76.76%	4,486	4.46%	3,239	3.22%	3,553	3.53%	6,176	6.14%	5,927	5.89%
RES	93,872	7.42%	48,752	3.85%	48,413	3.82%	130,464	10.31%	556,567	43.97%	387,717	30.63%
2018												
BUS	74,360	74.04%	4,692	4.67%	3,411	3.40%	3,943	3.93%	6,931	6.90%	7,093	7.06%
RES	231,177	17.96%	94,684	7.36%	197,276	15.33%	285,957	22.22%	377,736	29.35%	100,055	7.77%

Table 10f: Estimated Cumulative Rate Impact, 2009-2019

Year	Cumulative Electric Rate Impact						
	DSM Cost Recovery	System Benefits	Lost Revenue	Rate Imbalance (Increase)	Rate Impact (Increase)	Total Revenue	% Rate Increase
2009	$31.8M	$16.7M	$10.4M	-$6.2M	$25.5M	$2,216M	1.151%
2010	$42.2M	$32.3M	$22.4M	-$9.9M	$32.4M	$2,614M	1.238%
2011	$51.7M	$48.0M	$36.0M	-$12.0M	$39.7M	$2,673M	1.486%
2012	$67.1M	$71.2M	$62.7M	-$8.4M	$58.7M	$2,604M	2.255%
2013	$63.5M	$92.7M	$87.7M	-$4.9M	$58.6M	$2,793M	2.097%
2014	$65.1M	$108.8M	$109.2M	$0.3M	$65.5M	$2,865M	2.285%
2015	$74.7M	$131.2M	$141.5M	$10.4M	$85.1M	$2,767M	3.075%
2016	$72.2M	$147.9M	$179.6M	$31.7M	$104.0M	$2,737M	3.798%
2017	$88.3M	$166.9M	$219.8M	$52.9M	$141.2M	$2,735M	5.161%
2018	$92.0M	$171.3M	$241.6M	$70.2M	$162.2M	$2,674M	6.066%
2019	$94.7M	$176.8M	$265.3M	$88.4M	$183.1M	$3,033M	6.037%

Table 10g: Estimated Customer Bill Savings Range, 2009-2019

Year	Customers >1% Bill Increase		Customers 0-1% Bill Increase		Customers 0-2% Bill Savings		Customers 3-5% Bill Savings		Customers 6-15% Bill Savings		Customers more than 15% Bill Savings	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
2009												
BUS	95,395	98.36%	318	0.33%	257	0.26%	261	0.27%	471	0.49%	288	0.30%
RES	1,003,343	83.82%	39,099	3.27%	21,072	1.76%	54,960	4.57%	67,954	5.68%	10,858	0.91%
2010												
BUS	93,931	96.85%	598	0.62%	489	0.50%	461	0.48%	726	0.75%	783	0.81%
RES	845,554	70.64%	61,787	5.16%	29,019	2.42%	82,581	6.90%	143,759	12.01%	34,322	2.87%
2011												
BUS	91,583	94.43%	792	0.82%	858	0.88%	870	0.90%	1,438	1.48%	1,449	1.49%
RES	703,376	58.76%	40,082	3.35%	38,547	3.22%	117,868	9.85%	228,185	19.06%	68,950	5.76%
2012												
BUS	87,971	90.70%	717	0.74%	1,257	1.30%	1,179	1.22%	2,521	2.60%	3,344	3.45%
RES	547,524	45.74%	17,512	1.46%	80,617	6.73%	167,317	13.98%	282,157	23.57%	101,883	8.51%
2013												
BUS	85,209	87.85%	933	0.96%	1,493	1.54%	1,686	1.74%	3,306	3.41%	4,364	4.50%
RES	403,710	33.73%	24,509	2.05%	91,003	7.60%	181,822	15.19%	348,137	29.08%	147,819	12.35%
2014												
BUS	82,680	85.25%	1,075	1.11%	1,808	1.86%	1,857	1.91%	4,006	4.13%	5,562	5.73%
RES	277,559	23.19%	25,085	2.10%	112,873	9.43%	201,714	16.85%	390,844	32.65%	188,918	15.78%
2015												
BUS	80,969	83.08%	1,521	1.56%	2,172	2.23%	2,283	2.34%	4,415	4.53%	6,103	6.26%
RES	207,475	17.10%	58,120	4.79%	137,772	11.36%	202,860	16.72%	400,288	33.00%	206,445	17.02%
2016												
BUS	86,851	80.74%	1,851	1.72%	2,571	2.39%	2,797	2.60%	5,475	5.09%	8,030	7.46%
RES	186,063	15.12%	57,925	4.71%	153,439	12.47%	190,010	15.44%	407,093	33.09%	235,735	19.16%
2017												
BUS	84,195	84.36%	1,376	1.38%	2,297	2.30%	2,198	2.20%	4,105	4.11%	5,634	5.65%
RES	218,438	17.52%	57,038	4.57%	121,930	9.78%	172,829	13.86%	397,034	31.85%	279,499	22.42%
2018												
BUS	86,655	86.12%	723	0.72%	1,344	1.34%	1,584	1.57%	3,869	3.85%	6,442	6.40%
RES	187,648	14.82%	15,873	1.25%	42,291	3.34%	91,058	7.19%	372,458	29.43%	556,459	43.96%
2019												
BUS	84,822	84.46%	894	0.89%	1,520	1.51%	1,820	1.81%	4,272	4.25%	7,102	7.07%
RES	507,233	39.42%	59,108	4.59%	113,103	8.79%	149,236	11.60%	289,604	22.50%	168,602	13.10%

Compliance

Table 11: Reporting Requirements and Compliance

Item #	Compliance Point – Description	Statute / Rule / Proceeding Reference	Status Report Reference	Comments
ELECTRIC				
1	The annual DSM report will be filed with the Commission on April 1 of each year, starting in 2010.	Proceeding No. 07A-420E, Decision No. C08-560, p.53, ¶173.	---	Report filed April 1, 2020.
2	Shall include the results achieved during the previous plan year in total and by program, including achieved energy and demand savings, avoided annual and cumulative CO_2 and SO_x emissions in metric tons, actual expenditures, expenditures expressed in terms of $/kWh over the lifetime of the measures installed, and net economic benefits achieved.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.16, ¶11(b)	See Tables 5a - 7 in Executive Summary	$/kWh over lifetime and net economic benefits achieved by product in Cost-Effectiveness Section.
3	Public Service shall use the technical assumptions relating to the energy savings calculations for such measures actually installed during calendar years 2015 and 2019.	Proceeding No. 14A-1057EG, Stipulation & Settlement Agreement, p.17, ¶8	---	Deemed savings approved in Proceeding No. 16A-0512EG and Proceeding No. 18A-0606EG were used to calculate prescriptive product achievements for 1/1/19–6/30/19 and 7/1/19–12/31/19; respectively, unless amended via 60-Day Notice during 2019.

4	Use the net-to-gross ratios and the technical assumptions relating to incremental customer O&M savings (for prescriptive measures only), customer O&M costs (for prescriptive measures only), incremental customer capital costs (for prescriptive measures only), the deemed savings formulas and other technical assumptions set forth in the Appendix G for purposes of determining program and portfolio cost-effectiveness and for calculating annual portfolio net economic benefits based on measures actually installed during calendar years 2015 and 2019.	Proceeding No. 14A-1057EG, Stipulation & Settlement Agreement, p.17, ¶8	See Cost-Effectiveness and Financial Incentive Calculations sections	Technical assumptions approved in Proceeding No. 16A-0512EG and Proceeding No. 18A-0606EG were used to calculate prescriptive product achievements for 1/1/19–6/30/19 and 7/1/19–12/31/19; respectively, unless amended via 60-Day Notice during 2019.
5	All Participant O&M data should be treated as proprietary in the absence of a written agreement signed by the Participant authorizing disclosure.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.8, ¶4	---	---
6	Do not include Participant O&M data in incentive calculations unless there is authorization to disclose such data.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.8, ¶4	See Financial Incentive Calculations	----

7	PSCo may only disclose the results, by cost category, of calculations made using the privileged values, but not values themselves, by making such results available for inspection by both the Staff of the Commission and OCC at the Company's Colorado offices, pursuant to the following procedures: • PSCo will provide the customer 10 business-days' notice of the place and time of the inspection and provide the opportunity for a customer representative to be present during the inspection. • PSCo shall maintain a log of persons, dates, times and documents reviewed. • Participant O&M data shall not be disclosed to any other party or by any other means, except after receipt of written authorization from the Participant.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.9, ¶4	---	Participant O&M data has been neither requested nor disclosed to any external party.
8	Track the expenditures, energy savings, and paybacks associated with each approved project under the Self-Directed Custom Efficiency Program.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.8, ¶3	See Evaluation, Measurement and Verification	---
9	Approve Self-Directed customers' projects for which the customer meets TRC test value at least equal to one (1), rather than limiting this product to installations that have a TRC value at least equal to the TRC value for the overall DSM portfolio.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.7, ¶3	---	Ongoing.
10	Offer the Self-Directed Custom Efficiency product to commercial and industrial customers who have an aggregated peak demand at all meters of at least 2 MW in any single month and an aggregated annual energy usage of at least 10 GWh. The customer of record must be the same for all meters aggregated to qualify for this program.	Proceeding No. 08A-366EG, Stipulation & Settlement Agreement, p.8, ¶3	---	Ongoing.

11	All incentive payments must be included in the final TRC calculation. At the time of the annual report following the DSM performance year, the incentive amounts will be "proposed" versus "final." PSCo shall include the proposed incentive amounts in their annual report.	Proceeding No. 07A-420E, Decision No. C08-0560, p.37, ¶117	See Table 2c in Executive Summary	---
12	Public Service will calculate a proposed incentive amount based upon its calculation of the DSM savings achieved and costs incurred. Public Service's annual report will delineate the DSM activities that occurred, the costs and benefits related to these activities, and the net economic benefits. Based upon the percentage of the DSM goal achieved, a percentage of the net economic benefits will comprise Public Service's incentive payment. That value, along with the disincentive offset, will also be presented in the annual report, as a proposed performance incentive. This is the procedure that Public Service is to follow in its annual DSM report. The Decision does not require that the incentive amount be recalculated after the inclusion of the incentive payment amounts into the final TRC calculation.	Proceeding No. 07A-420E, Decision No. C08-0769, pg. 19-20, ¶63	See Financial Incentive Calculations	---
13	For any low-income program that achieves a TRC<1.0, the costs and benefits may be excluded from the calculation of net economic benefits. The energy and demand savings may be applied toward the calculation of overall energy and demand savings, for the purposes of determining progress toward annual goals.	Proceeding No. 07A-420E, Decision No, C08-560, p.44, ¶140	See Financial Incentive Calculations	---
14	Beginning with the 2012 Annual Status Report, PSCo will quantify and track certain costs incurred through the use of third-party providers.	Proceeding No. 10A-554EG, Decision No. C11-0442, p. 52, Ordering ¶4	See Table 4 in Executive Summary	---

15	"Indirect impact programs" (customer education, market transformation and pilot programs) do not need to individually pass a TRC test, but need to be incorporated into the overall costs used to calculate the TRC of the DSM portfolio. Market Transformation efforts shall have a presumptive TRC of 1.0 so as to not adversely affect the financial incentive calculation.	Proceeding No. 07A-420E, Decision No. C08-0560, pg. 44-45, ¶141	See Indirect Program and Financial Incentive Calculations	Included within Report filed April 1, 2020.
16	Distribute a bi-monthly DSM Pilot/Product Development e-mail update.	Proceeding No. 14A-1057EG, Settlement Agreement, Para. 5(j)(i)	---	The Company continued to provide more comprehensive PD updates as part of its DSM Roundtables in lieu of the e-mail update.
17	Offer to hold at least two meetings with interested stakeholder, for each pilot that the Company decides to pursue, prior to 60-Day Notice.	Proceeding No. 14A-1057EG, Settlement Agreement, Para. 5(j)(iv)	See Table 3 in Executive Summary	The Company issued 60-Day Notices for three pilots in 2019. Stakeholder engagement summarized in footnote.[14]
18	Provide an annual total of DSM program participants and non-participants in its annual status reports filed with the Commission.	Decision No. C14-00997, Para. 24	See Participation Analysis	Included within Report filed April 1, 2020.
19	Commit to report the number of leads generated and shared with internal product management and customer service specialists from all customer outreach event categories	Proceeding No. 16A-0512EG, Settlement Agreement, Para. III(S)(iii)	See Consumer Education write up included in the Indirect Program section	---
20	Include in its annual status report filing the number of customers under the tariff, the number of interruptions called, and the number of interruptions that were coincident with the system peak.	Proceeding No. 16A-0512EG, Settlement Agreement, Para. III(BB)(i)	See Peak Partner Rewards Write Up included in the Demand Response Program section	---

[14] Prior to noticing the Charging Perks Pilot, the Company held two workshops and numerous meetings with various stakeholder groups. The EV Critical Peak Pricing ("EV-CPP") Pilot operationalized the S-EV Rate approved in Proceeding No. 19AL-0290E. As outlined in the Direct Testimony of Jack W. Ihle, the Company engaged in extensive stakeholder outreach prior to filing Advice Letter No. 1798. The Company also presented the EV-CPP and Peak Day Partners Pilots prior to notice at the Q3 DSM Roundtable in November 2019. Stakeholder feedback was negligible, and the Company deemed it unnecessary to hold a secondary meeting.

21	We therefore approve the base budget of $78 million annually as proposed in the Settlement but modify the additional amount Public Service may spend by increasing the additional expenditures the Company may devote to electric DSM from 10 percent to 20 percent with an attendant presumption of prudence. This modification to the terms of the Settlement will allow for total spending of up to $93.6million for Public Service to meet the goals established by this Decision and to achieve the associated net economic benefits for ratepayers.	Decision No. C18-0417, Para. 97	See Table 5b in Executive Summary	The Company spent a total of $82.3 million on its Energy Efficiency Program in 2019.
22	The Company will spend not less than $3.8 million annually on its low-income electric energy efficiency program from 2019 through 2023. The Company's low-income energy efficiency budget will also include an incremental $275,000 annually to address health and safety measures.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(H)(i)	See Table 5b in Executive Summary	The Company spent a total of $3.9 million on its Low-Income electric energy efficiency program in 2019.
23	In each DSM Status Report until a final order is issued in the next DSM Strategic Issues proceeding, the Company will conduct a sensitivity cost-benefit analysis at the portfolio level using the Social Cost of Carbon or the Regulatory Cost of Carbon scenarios ordered in the most recent ERP.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(I)(ii)	See Table 2d in Executive Summary	---
24	Public Service will provide documentation of its Commercial & Industrial behavioral savings calculations with its annual DSM Status Report.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(J)(i)	---	The Company did not claim Commercial & Industrial behavioral savings in 2019.
25	The Settling Parties agree that Public Service may claim secondary site savings in its energy, demand, and net benefit calculations for purposes of the Company's electric DSM offerings, to the extent these savings have not otherwise been claimed by the Company. The Company will provide documentation showing how it calculated secondary site savings and associated benefits along with its annual DSM Report.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(J)(ii)	---	The Company did not claim secondary site savings in 2019.

26	The Settling Parties agree that the Company will offer the following core services as part of its 2019-2023 DSM plans: • Residential weatherization and building envelope; • Heating and cooling; • Commercial new construction; • Energy audits and design assistance; and, • Commercial lighting.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(L)(i)	See corresponding product Write Ups included in the Business Program, Residential Program, and Indirect Program sections	All listed services were provided in 2019.
27	Modify the Multifamily Buildings product design to utilize a pay for performance contract structure for third-party implementation services. The Company will conduct an RFP in 2019 to solicit a single third-party implementer to support this new model.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(x)	See Multifamily Buildings Write Up included in the Business Program section	The RFP in complete and the contract for 2019 and 2020 services was awarded.
28	Regarding Strategic Energy Management: The Company agrees to expand the 2019 cohort pilot offering described in the 2019/2020 DSM Plan, as modified by this Settlement Agreement, to a full offering in 2019 and 2020.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xi)	See Strategic Energy Management Write Up included in the Business Program section	Contract negotiations began in 2019 with expected launch of the expanded offering in Q2 2020.
29	Regarding Energy Star New Homes: The Company agrees to increase the 2019 forecasted budget to conduct a review of a new product design and delivery strategies.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xiii)	See Energy Star New Homes Write Up included in the Residential Program section	Product design review commenced in 2019.
30	Regarding Home Performance with Energy Star: The Company agrees to increase the 2019 forecasted budget to conduct a review of a new product design and delivery strategies.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xv)	See Home Performance with Energy Star Write Up included in the Residential Program section	Initial phase of the product redesign implemented via 60-Day Notice in 2019.

31	Regarding School Education Kits: The Company agrees to pilot a new energy efficiency kit and educational activities in 2019 and 2020. The kit will be provided to high school students and will be preceded by a school-wide presentation and educational event. The new kit will include new measures such as specialty LEDs, weather stripping, and smart power strips. Discount coupons will also be included with the kit to encourage customers to purchase additional energy efficient measures.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xi)	See School Education Kits Write Up included in the Residential Program section	Two new kits piloted in 2019 which will be continued in 2020.
32	Regarding Energy Efficiency Financing: The Company agrees to redesign its website to highlight additional financing opportunities, including the Colorado Commercial Property Assessed Clean Energy program and the Colorado Residential Energy Upgrade loan program, for residential, commercial, and industrial customers. Provide customers with information on financing, including updating all applicable products websites, including, Home Performance with ENERGY STAR®.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xix)	See Energy Efficiency Financing write up included in the Indirect Program section	Energy Efficiency and additional applicable product websites updated in 2019.
33	Regarding Residential Battery Demand Response: The Company agrees to conduct an RFP in 2019 for at least two, but not more than four, vendors to provide services for the pilot in 2019 and 2020.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(D)(xx)	See Residential Battery Demand Response Write Up included in the Demand Response Program section	The RFP is complete and contract negotiations are underway.

34	The Company agrees to work with and support CEO's Colorado Agricultural Energy Efficiency Program to increase the participation of agricultural customers in the Company's energy efficiency and demand response products.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(E)(i)	---	2019 activities described in footnote.[15]
35	Regarding the Green Roof Ordinance: The Company agrees to promote the "Flexible Compliance Option - Energy Savings/Using Less Than Energy Code" option identified in the City of Denver's Green Roof Ordinance, which may include the use of Company account managers and provide rebates for qualifying measures included in the 2019/2020 DSM Plan that are used to qualify with this option. The Company commits to including in its tracking database information regarding outreach to affected customers and will report on these efforts in its DSM Status Report.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(E)(ii)	See New Construction Write Up included in the Business Program section	The Company is tracking over 40 projects that fall under the Green Roof Ordinance within the New Construction product.
36	The Company agrees to develop Spanish language materials for its Residential and Low-Income products in 2019 and 2020 as applicable. The development of materials will focus on those products where the potential for increased participation is greatest. In conjunction with the development of Spanish language materials, the Company will evaluate ways to target marketing approaches to Spanish speaking communities and engage this demographic more holistically.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(E)(iii)	See the Low-Income Program section	The Company introduced Spanish language marketing materials for its Low-Income program as well as the School Education Kits, Home Energy Squad, and Multifamily Buildings products in 2019 and is working on updating the Energy Feedback online portal.

[15] The Company collaborated with the Colorado Energy Office ("CEO") to identify appropriate agricultural customers using NAICS codes that qualified for the CEO's Colorado Agricultural Energy Efficiency Program. Using this information, the Company was then able to identify approximately 1,000 unique potentially qualifying customers within its service territory. Using this address list, targeted marketing efforts were then conducted that included a direct mail outreach highlighting the CEO's offer of a free energy assessment, created awareness of the appropriate types of agricultural operations that qualify, overall benefits to the customer and listed specific examples of the Company's available custom and prescriptive rebate programs applicable to the agricultural customer. In addition to directing the customer to the Company's website, the direct mail piece also encouraged customers to contact the CEO's program implementer directly to learn more about the program. Additional customer outreach opportunities were continually identified and discussed through monthly status calls with the CEO project team. These include use of available customer email addresses that the Company provided to send out additional targeted marketing in support of agricultural outreach events that are held in communities within the Company's service territory. Continued efforts will include ongoing follow up communications to those customers that have completed a study through the CEO as contact information is provided to the Company.

37	Regarding Code Trainings: The Company agrees to provide $50,000 per year to support code trainings within its electric and natural gas service territories. Conduct a study in 2019 to identify the potential for energy efficiency impacts associated with code trainings and potential product designs for future implementation. The cost for this study will be provided through the existing budget forecast for Energy Efficiency Product Development.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(E)(iv)	---	Phase I of the study is complete with Phase II scheduled for completion in Q2 2020. Due to contracting delays with the implementer, the Company was not able to spend $50,000 on trainings in 2019. All unspent funds are being transferred to the 2020 budget to ensure at total of $100,000 is spent between 2019 and 2020 on effective, well-attended training.
38	The Company agrees to meet with the Settling Parties prior to the end of the third quarter of 2019 to discuss the status of the EISA. The Company will file a Motion in this proceeding to modify, in accordance with the stakeholder discussion above, the technical assumptions related to applicable products within the 2019/2020 DSM Plan, as modified by this Settlement Agreement, and, if necessary, propose any conforming modifications to the 2019/2020 DSM Plan, as modified by this Settlement Agreement, and/or this settlement Agreement including the removal of and discontinuation of rebates for measures which are determined to be baseline efficient measures upon the applicable timing of the baseline update.	Proceeding No. 18A-0606EG Settlement Agreement, Para. III(E)(v)	---	The Company notified Settling Parties and DSM Roundtable participants of a meeting on December 18, 2019, to discuss the impacts of the DOE ruling on EISA. Attendees included members from CEO, EEBC, OCC, WRA, and SWEEP. The discussion determined that no modifications were necessary for the 2020 plan year.
39	The Company agrees to meet with members of EEBC and other interested stakeholders, in 2019, that have products, services, or ideas that may help the Company cost-effectively deliver value through the Company's deployment of advanced metering infrastructure. The Company will notify the intervening parties to both Proceeding No. 18A-0606EG and Proceeding No. 16A-0588E.	Proceeding No. 18A-0606EG, Settlement Agreement, Para. III(E)(vii)	---	The Company hosted Session 1 of the AGIS Forum on December 3, 2019. The Forum was split into two sessions – Session 2 held February 12, 2020 – in coordination with EEBC.

40	The Company agrees to not post non-cost-effective 60-Day Notices for existing products or programs, except for low income products. The Company may post a 60-Day Notice to introduce a new pilot regardless of cost-effectiveness so long as the funding for such a pilot arrives from a predetermined budget or the adjustment of an existing budget.	Proceeding No. 18A-0606EG, Settlement Agreement, Para. III(E)(viii)	See Table 3 in Executive Summary	A total of six 60-Day Notices issued in 2019 contained non-cost-effective MTRC ratios; however, these notices related to products that were not cost-effective as filed and approved in the 2019/2020 DSM Plan and the modifications in the 60-Day Notice were intended to improve cost-effectiveness.
41	As part of this Settlement Agreement, the Company agrees to increase the specific Residential Energy Efficiency program budget, independent of the Low-Income program budget, to 25 percent of the Energy Efficiency portfolio budget in 2019 and 2020.	Proceeding No. 18A-0606EG, Settlement Agreement, Para. III(E)(xii)	See Table 5b in Executive Summary	Residential Energy Efficiency program spend accounted for 25.4 percent of the total Energy Efficiency spend in 2019.
NATURAL GAS				
1	Beginning April 1, 2010 and each April 1st thereafter, each utility shall submit its annual DSM report, application for bonus and DSMCA filing.	Rule 4752(b); Rule 4754(f); Rule 4760	---	Report filed April 1, 2020.
2	The utility's annual expenditure target for DSM programs shall be, at a minimum, two percent of a natural gas utility's base rate revenues, (exclusive of commodity costs), from its sales customers in the 12-month calendar period prior to setting the targets, or one-half of one percent of total revenues from its sales customers in the 12-month calendar period prior to setting the targets, whichever is greater.	Rule 4753(h)(I)	---	PSCo spent a total of $14.5 million on its natural gas DSM programs. This surpassed the statutory expenditure targets – $7.7 million (2% of gas base rate revenues), and $5.0 million (0.5% of total gas revenues).
3	In the annual DSM report the utility shall describe its actual DSM programs as implemented. For each DSM program, the utility shall document actual program expenditures, energy savings, participation levels and cost-effectiveness.	Rule 4754(a)	See 2019 Status Report	---
4	Annual program expenditures shall be separated into cost categories contained in the approved DSM plan.	Rule 4754(b)	See Tables 8a, 8b, 9a, 9b in Executive Summary	---

5	For each DSM program, the utility shall compare the program's proposed and actual expenditures, savings, participation rate, and cost-effectiveness; in addition, the utility shall prepare an assessment of the success of the program, and list any suggestions for improvement and greater customer involvement.	Rule 4754(c)	See 2019 Status Report	---
6	The utility shall provide actual benefit/cost results for the overall DSM plan and individual DSM programs implemented during the plan year. The benefit/cost analysis shall be based on the costs incurred and benefits achieved, as identified in the modified TRC test. Benefit values are to be based upon the results of M&V evaluation, when such has been conducted as set forth in rule 4755. Otherwise, the benefit values of the currently approved DSM plan are to be used.	Rule 4754(d)	See Cost-Effectiveness	Business, Residential, and Low-Income cost-benefit analysis (CBA) results are included in CBA work paper.
7	If the annual report covers a year within which an M&V evaluation was completed, the complete M&V results are to be included as part of the annual report.	Rule 4754(e)	See Evaluation, Measurement & Verification	---
8	The utility may file an application for bonus, pursuant to rule 4760. The application for bonus shall include the utility's calculation of estimated bonus applying the methodology set forth in this rule to the utility's actual performance.	Rule 4754(f)	See Financial Incentive Calculations	Included within Report filed April 1, 2020.
9	Acknowledgment of Lost Revenues (ALR) - Separate from any bonus determined by the Commission, the Commission may authorize a utility to recover a calculated amount of revenue that acknowledges that an effective DSM program reduced the utility's revenue. The amount shall be calculated as set forth in Rule 4754(g)(I)(A)-(E)	Rule 4754(g)	See Financial Incentive Calculations	---
10	Further, the Company will spend not less than $3.3 million annually on its low-income gas energy efficiency program from 2019 through 2023.	Proceeding No. 17A-0462EG, Settlement Agreement, Para. III(H)(i)	See Table 6b in Executive Summary	The Company spent a total of $3.9 million on its Low-Income gas energy efficiency program in 2019.

11	The budget for the natural gas DSM programs in Decision No. C18-0417 in Proceeding No. 17A-0462EG was $12 million annually. The Company forecasts to spend $14.8 million in 2019 and $14.9 million in 2020. The Settling parties agree to these budgets in excess of $12 million because the proposed budgets are consistent with Commission Rule 4753(k), which states "a utility may spend more than the annual expenditure target established by the Commission up to twenty-five percent over the target, without being required to submit a proposed DSM plan amendment."	Proceeding No. 18A-0606EG, Settlement Agreement, Para. III(C)	See Table 6b in Executive Summary	Natural gas DSM expenditures in 2019 totaled $14.5 million.

Financial Incentive Calculations

Electric Financial Incentive: Summary

In calendar year 2019, the Company operated its DSM programs under technical assumptions from both the 2017/2018 and 2019/2020 Plan years because final Commission approval of the 2019/2020 Plan was not provided until March 28, 2019. Consistent with paragraphs 6 and 7 of the Joint Motion to Continue the 2015/2016 DSM Plan and Waiver of the Response Time and Joint Statement Identifying the Methodology to Prorate the 2015/2016 DSM Plan for 2017 in Proceeding No. 16A-0512EG, the Company has utilized the Deemed Savings and Technical Assumptions from the 2017/2018 DSM Plan for January 1, 2019 through June 30, 2019, and has used the Technical Assumption and Deemed Savings from the 2019/2020 DSM Plan for July 1, 2019 through December 31, 2019.[16]

Table 12 below summarizes the Company's Financial Incentive for electric energy efficiency based upon the Company's achievement of 504 GWh and net benefits of $97,752,146 in 2019. The performance goal and incentive structure for 2019 were established in Proceeding No. 17A-0462EG.

Table 12: Summary of 2019 Electric Incentive

	Amount
Disincentive Offset	$3,000,000
RSC Disincentive Offset	$3,250,000
Performance Incentive	$11,750,000
Total	**$18,000,000**

Disincentive Offset

A Disincentive Offset of $3.0 million is awarded because the Company achieved 100 percent of the annual energy savings goal of 500 GWh. That threshold was ordered in Decision No. C18-0417.

RSC Disincentive Offset

The Residential and Small Commercial Disincentive Offset ("RSCDO") of $3.25 million is awarded for 2019 because of the increased goals approved by the Commission in Proceeding No. 17A-0462EG. This is in addition to and separate from the financial mechanism approved in Proceeding No. 17A-0462EG but is subject to the $18 million incentive cap approved in that Proceeding. The RSCDO was approved in Decision No. R19-0229 in Proceeding No. 18A-0606EG.

Performance Incentive

The Performance Incentive for the 2019 Plan year is 40 percent of net economic benefits[17] for all savings above 280 GWh and up to 550 GWh, provided that the Company achieves at least 400 GWh in energy efficiency savings. Savings over 550 GWh are not eligible for incentive earnings. The performance incentive in combination with both disincentive offsets is subject to an $18 million incentive cap. That threshold was ordered in Decision No. C18-0743.

[16] Unless otherwise modified by 60-Day Notice.

[17] A minor adjustment is made for market transformation programs, allowing for the costs of these programs to be excluded from net economic benefits.

Electric Financial Incentive: Calculation

The combination of the pre-tax Disincentive Offset, RSCDO, and the Performance Incentive cannot exceed $18 million. The total financial incentive is recovered in the year following the 2019 performance year. The full calculation of the Company's financial incentive for electric DSM is shown in Table 13 below.

Table 13: Public Service 2019 Electric DSM Incentive

Disincentive Offset (Grossed-up for Income Taxes)	$3,000,000
Residential and Small Commercial Disincentive Offset	$3,250,000
Total Disincentive Offset	**$6,250,000**
Performance Incentive Calculation	
Approved 2019 kWh Goal	500,000,000
kWh from YE Achievements	504,156,414
Net Economic Benefits from YE Achievements	**$97,752,146**
Net Economic Benefits Adjustments	
Total Low-Income Allowance	$1,361,814
Total Market Transformation Allowance from YE Achieve.	$2,225,369
FINAL Net Benefits from YE Achievements	**$101,339,328**
% of Net Benefits Eligible for Incentive (Achievement over 280 GWh)	44.5%
% of Eligible Net Benefits Awarded	40%
Performance Incentive	**$18,022,867**
Total Incentive – Disincentive Offset Total + Performance Incentive	$24,272,867
Incentive Cap (Hard Cap of $18,000,000)	$18,000,000
Total 2019 Proposed Electric Financial Incentive Pre-Tax	**$18,000,000**

Natural Gas Bonus

The natural gas incentive mechanism ("Gas DSM Bonus") is calculated as set forth in 4 CCR 723-4-4754 ("Rule 4754"). The Gas DSM Bonus is awarded in a single installment, requested by application and approved in the first status report year following the natural gas DSM program year in which the savings were achieved. The approved Gas DSM Bonus amount is recovered through the Gas Demand-Side Management Cost Adjustment ("G-DSMCA"), over the same twelve-month period as set forth in Rule 4752(d). (See Rule 4754(g)(I)(D)).

The natural gas incentive is awarded on a sliding scale of net benefits, calculated based on an Energy Factor (percent of Dth goal achieved) and a Savings Factor (Dth per $1 million spend). The Gas DSM Bonus is capped at 25 percent of expenditure, or 20 percent of net benefits, whichever is less. For 2019, the natural gas incentive is calculated to be $3,235,509. This bonus is less than the net benefit cap of $5,292,220 and the expenditure cap of $3,617,998. In addition, the Company is filing for an acknowledgement of lost revenues associated with natural gas DSM programs of $682,209 for a total award of $3,917,718. The full calculation of Public Service's 2019 Natural Gas Incentive is detailed in Table 14 below.

Table 14: Public Service 2019 Natural Gas Bonus and Acknowledgement of Lost Revenue

Approved Energy Target (Goal)[18]	637,448	Dekatherm per year		
Energy Target Achieved - YE Forecast	649,298	Dekatherm per year		
Percent of Energy Target Achieved	101.9%			
			Dth	**Spend**
Approved Savings Target	44,788	Dekatherm per $1M	637,448	$13,785,966
Savings Target Achieved - Portfolio Total	44,866	Dekatherm per $1M	649,298	$14,471,991
Savings Target Achieved - Low-Income Program Adjustments				
Energy Savings Kit			13,949	$109,711
Multi-Family Weatherization			9,574	$692,844
Non-Profit Energy Efficiency			1,779	$224,288
Single-Family Weatherization			52,774	$2,836,715
Total Savings Target Achieved - Low-Income Program Adjustments	20,209	Dekatherm per $1M	78,077	$3,863,558
Savings Target Achieved - Adjusted*	53,846	Dekatherm per $1M	571,221	$10,608,434
Total DSM Expenditures	$14,471,991			
Energy Factor	10.5%			
Savings Factor	1.164516158			
Percent of Net Benefits Awarded	12.2%	= Energy Factor * Savings Factor		
Net Economic Benefits Achieved	$26,254,810			
Net Economic Benefits Adjustments				
Energy Savings Kit	$-			
Multi-Family Weatherization	$79,743			
Non-Profit Energy Efficiency	$126,545			
Single-Family Weatherization	$-			
Low-Income Allowance from Plan	$206,288			
FINAL Net Economic Benefits Achieved	$26,461,098			
Incentive Cap	$3,617,998	= less of 20% of net economic benefits or 25% of expenditures		
Total 2019 Proposed Gas Financial Incentive Pre-Tax	**$3,235,509**			
Business/Residential Allocation				
Business Actual Savings (Dth)	152,740	24%		
Residential & Low-Income Actual Savings (Dth)	496,558	76%		
Total Savings	**649,298**	**100%**		
Allocated Bonus				
Business	$761,118			
Residential & Low Income	$2,474,391			
Total	$3,235,509			
Acknowledgement of Lost Revenue [ALR] Calculation:				
Dollar Value Per Therm				
Business (Non-residential)	$0.11985			
Residential	$0.10052			
12-Month Therm Reduction Impact From 2019 Programs				
Business (Non-residential)	1,527,403			
Residential	4,965,580			
ALR Totals				
Business (Non-residential)	$183,053			
Residential	$499,156			
Total ALR	**$682,209**			
Total Gas Bonus and ALR	**$3,917,718**			

[18] Natural Gas savings goal set as a pro-ration of the 2018 goal in Proceeding No. 16A-0512EG and the 2019 goal in Proceeding No. 18A-0606EG pursuant to Decision No. R12-1204-1 in Proceeding No. 13A-0773EG.

Business Program

The Company's Business Program—for commercial and industrial customers of all sizes—offers a broad portfolio of DSM products designed to meet the needs of this varied segment. Eligible customers are on a Public Service business rate for electric service and/or retail natural gas service. The portfolio has three primary components:

1. *Prescriptive products* focus on the most common equipment.
2. *Custom products* encourage savings from unique situations, often involving newer technologies or measures.
3. *Study and educational products* help customers identify energy efficiency opportunities.

Electric

In 2019, the electric products in the Company's Business Program achieved 95 percent of the net generator kWh target. Multiple products overachieved their forecast savings, including: New Construction, Strategic Energy Management, Self Direct, LED Street Lighting, Energy Management Systems and Commercial Refrigeration Efficiency. A summary of the Company's Business Program achievements for electric DSM products is shown in Table 15a below.

Table 15a: Business Program – Electric DSM Products (Target to Actual)

	Budgets / Targets				Expenditures / Achievements			
Business Program - 2019	**Electric Budget**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**	**Electric Expenditures**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**
Commercial Refrigeration Efficiency	$1,161,381	863	4,914,779	1.41	$1,385,606	968	8,119,905	1.03
Compressed Air Efficiency	$662,960	700	4,569,137	1.49	$459,769	307	1,863,803	1.43
Cooling	$4,715,198	5,939	11,449,289	1.22	$2,581,581	2,357	5,158,359	1.10
Custom Efficiency	$1,035,689	515	4,796,517	1.22	$535,018	185	1,561,339	2.35
Data Center Efficiency	$1,781,817	1,746	13,710,005	1.81	$949,616	884	9,795,570	1.75
Energy Management Systems	$565,759	36	4,986,861	0.90	$575,466	35	5,131,923	1.18
Heating Efficiency	$16,180	7	98,026	1.96	$11,791	10	51,861	2.20
LED Street Lighting	$43,000	-	2,658,138	0.55	$0	-	12,203,652	1.35
Lighting Efficiency	$17,578,839	20,089	156,466,275	1.43	$14,904,021	17,167	117,349,881	1.66
Lighting - Small Business	$6,436,982	5,734	37,061,672	1.12	$4,952,668	5,404	37,058,670	1.55
Motor & Drive Efficiency	$2,644,398	2,316	13,175,865	1.41	$2,217,650	1,917	11,892,548	1.83
Multifamily Buildings	$2,143,516	1,280	11,073,258	1.31	$1,380,644	1,066	9,498,057	1.77
New Construction	$11,511,392	11,436	39,338,167	1.21	$12,222,865	18,245	58,011,681	1.68
Recommissioning	$475,156	380	3,746,661	0.84	$233,628	153	812,028	1.19
Self Direct	$799,627	1,025	6,738,491	1.67	$2,599,627	2,079	12,872,104	1.36
Strategic Energy Management	$5,293,986	3,270	28,972,603	1.57	$4,299,623	4,601	34,213,911	2.24
General Advertising-Bus	$826,564	-	-	-	$659,948	-	-	-
Business Program Total	**$57,692,446**	**55,335**	**343,755,746**	**1.33**	**$49,969,520**	**55,377**	**325,595,292**	**1.66**

Natural Gas

In 2019, the natural gas products in the Company's Business Program achieved 93 percent of the Dth savings target. New Construction and Custom Efficiency both overachieved compared to targets. A summary of the Company's Business Program achievements for natural gas DSM products is shown in Table 15b below.

Table 15b: Business Program – Natural Gas DSM Products

	Budgets / Targets					Expenditures / Achievements				
Business Program - 2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio	Gas Expenditures	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Commercial Refrigeration Efficiency	$41,751	8,753	209,640	$374,195	5.45	$16,771	1,912	114,000	$78,935	2.47
Compressed Air Efficiency	-	-	-	-	-	-	-	-	-	-
Cooling	-	-	-	-	-	-	-	-	-	-
Custom Efficiency	$54,727	3,435	62,774	$102,158	1.66	$55,047	5,224	94,900	$55,722	1.22
Data Center Efficiency	-	-	-	-	-	-	-	-	-	-
Energy Management Systems	$56,474	8,088	143,215	$189,607	1.50	$35,512	3,398	95,698	$32,792	1.14
Heating Efficiency	$603,550	19,741	32,708	$78,289	1.06	$645,582	16,422	25,438	-$58,132	0.96
LED Street Lighting	-	-	-	-	-	-	-	-	-	-
Lighting Efficiency	-	-	-	-	-	-	-	-	-	-
Lighting - Small Business	$25,390	3,322	130,833	$299,485	10.95	$11,524	86	7,456	$1,748	1.15
Motor & Drive Efficiency	-	-	-	-	-	-	-	-	-	-
Multifamily Buildings	$865,793	38,274	44,207	$3,066,427	2.66	$542,110	21,614	39,870	$2,088,321	3.45
New Construction	$868,947	78,091	89,868	$607,882	1.14	$823,684	101,181	122,839	$10,183,947	3.29
Recommissioning	$44,086	3,530	80,078	$15,243	1.16	$25,106	2,903	115,645	$40,675	2.57
Self Direct	-	-	-	-	-	-	-	-	-	-
Strategic Energy Management	-	-	-	-	-	-	-	-	-	-
General Advertising-Bus	$39,149	-	-	-	-	$50,608	-	-	-	-
Business Program Total	**$2,599,866**	**163,234**	**62,785**	**$4,694,136**	**1.55**	**$2,205,944**	**152,740**	**69,240**	**$12,373,399**	**2.69**

Business Products

The following provides a brief summary of the performance of each DSM business product in 2019.

Commercial Refrigeration Efficiency

The Commercial Refrigeration Efficiency product offers refrigeration maintenance and upgrades to commercial customers with significant refrigeration loads, notably restaurants, grocery, convenience and liquor stores. The product offers four major components to provide customers with the resources necessary to reduce their energy usage. These include a free onsite energy assessment with an assessment report, direct installation of complimentary energy saving measures, identification of prescriptive measures, and proactive project management to assist customers in implementing energy efficient measures.

2019 Product Achievement

The product greatly exceeded its electric savings target for 2019 but did not meet the filed gas savings target. A new implementer was brought in at the beginning of the year and provided a fresh perspective to the product which boosted customer participation, specifically in the grocery segment. The product would like to continue to engage this larger segment, but also re-focus marketing efforts to engage small to mid-size refrigeration customers like restaurants, food and beverage stores and schools in the coming year. This would include more opportunities to perform direct installation of energy savings measures for customers, which will help provide additional gas savings. New trade partners were engaged mid-year who had not participated in the product prior, and there is opportunity to re-engage past trade partners in 2020.

Changes in 2019

With the launch of the 2019 DSM Plan, the products eliminated were the Refrigerator Case Night Curtain and Evaporator Fan Motor Controller due to cost-effectiveness. The product also reduced rebates for Close the Case Doors, No Heat Case Doors for both Coolers and Freezers, and increased the rebates for the Demand Controlled Ventilation measures. A 60-Day notice updated the technical assumptions for the Medium-temperature Enclosed Reach-In Case measure to add an option for new

cases to be installed where none existed before, or where the existing cases were broken or past their equipment life.

Compressed Air Efficiency

The Compressed Air Efficiency product helps customers identify and address inefficiencies in their compressed air systems. The product encourages the repair and redesign of existing systems and the purchase of efficient options for new and replacement systems. The product has three components:

1. Prescriptive rebates for the most common high-efficiency options, such as no-loss air drains, and for certain variable frequency drive ("VFD") compressors;
2. Rebates for studies that help customers identify efficiency opportunities from fixing to redesign or replacement of system components; and
3. Custom rebates for implementation of unique improvements identified by studies. Improvements can include a wide range of capital purchases and "process" improvements, such as piping modifications or horsepower reductions.
    - Customers that have completed a compressed air study are eligible for $500 per kW saved for system peak savings, with an additional $100 per kW when non-peak savings exceed system peak savings. This amount is reduced to $400 per kW saved for system peak savings, with an additional $50 per kW when non-peak savings exceed system peak savings for customers without a compressed air study completed in advance.

Trade partners support the product through direct equipment sales and system studies.

2019 Product Achievement

The product did not achieve its 2019 electric savings target. This is due to several factors including: the need for a larger trade base to expand outreach to and engage with customers; the need for more trade education and updates surrounding the product; and customers delaying projects into future years.

To increase education and awareness within the trade, the product hosted an advanced Compressed Air Challenge course. This event is a two-day training course, which was very well received. Based upon the positive feedback and engagement from the first event, the Company will continue to host Compressed Air Challenges in future years. The Company expects these events to continue generating awareness of the technologies and offerings the product has; as well as increased customer and trade participation and engagement.

Changes in 2019

There were no changes to this product.

Cooling

The Cooling product offers rebates to customers who purchase and install select high-efficiency ("HE") cooling equipment, and incentives to midstream distributors to stock and sell select HE equipment. Rebate dollars and study funding are offered to assist in buying down the incremental cost associated with purchasing the HE equipment, and to shorten the associated payback period. In addition, customers may qualify for a mix of prescriptive rebates for common HE equipment and custom rebates for newer, system-based HE solutions. Marketing efforts inform and educate customers and trade partners to encourage energy efficient choices in facilities.

2019 Product Achievement

The product did not achieve its electric energy savings target and spend was aligned with achievement.

Changes in 2019
In November, the Company posted 60-Day Notice to update the incremental cost assumptions for all midstream and prescriptive cooling measures based on a comprehensive review of distributor and volume pricing.

Custom Efficiency
The Custom Efficiency product is designed to provide rebates on a wide variety of equipment and process improvements that do not fall within the Company's prescriptive rebate products. Custom Efficiency projects require pre-approval before equipment purchase and installation and must pass the MTRC test as part of that analysis. The product is an important piece of the Company's portfolio as it provides a place to evaluate unique savings opportunities and serves as a launch pad for new product ideas.

2019 Product Achievement
The Custom Efficiency product exceeded its natural gas savings target but did not achieve its electric savings target in 2019. Both the electric and natural gas products exceeded participation targets in 2019, however, most electric projects that were submitted had smaller electric savings than a typical project. The product underspent its forecasted electric budget and slightly overspent its gas budget to support energy savings achievements. The Company continues to work across key channels, including trade, to engage customers and identify potential solutions. These efforts focus on involving the Company earlier in the process, which provides valuable insight while customers are planning their energy efficiency improvements.

Changes in 2019
There were no changes to this product.

Data Center Efficiency
The Data Center Efficiency product offers study and implementation rebates to customers who make energy saving improvements to a data center. The product encourages a holistic approach by providing energy efficiency information, site evaluations, and project analyses for customers. The Company's portfolio of prescriptive and custom rebates is also available to data center customers to encourage the implementation of additional energy saving upgrades.

2019 Product Achievement
The Data Center Efficiency product did not achieve its electric savings target in 2019. Several projects from the previous year were completed in 2019. For completed projects, electric achievement was from a variety of prescriptive and custom projects focused on lighting, cooling, and motors technologies. In 2019 the product rebated the second highest number of EC plug fans since the measure became a prescriptive offering in 2015. The product did remain under budget for the year.

In addition, the Company began to work through many of the recommendations from the 2017 program evaluation. This included improving the documentation of the Company's influence on customer projects, conducting on-site visits with customers to identify new energy saving projects, and engaging with study providers specific to the data center industry. The Company continued to engage with new customers through the Data Center New Construction offering.

Changes in 2019

In February 2019, the Company posted a 60-Day Notice to make changes to the product in response to the 2017 product evaluation. The evaluation provided key findings in the areas of NTG, outreach efforts to trades and customers, and recommendations for product rebate applications.

Energy Management Systems

The Energy Management Systems ("EMS") product encourages customers to install or upgrade automated building controls. The product covers new systems in an existing building, the replacement of an obsolete system, and adding functionality or control points to an existing system. An EMS helps reduce a building's on- and off-peak energy usage through sensors and controls that are centrally operated. Through automation, the systems may control heating, cooling, or ventilation functions. The product includes lighting controls only when they are integrated with the control system.

2019 Product Achievement

The product achieved its full-year electric savings targets. Overall expenses were in-line with achievement. The natural gas product, however, did not meet its targets, and neither electric nor gas product performance improved compared to prior years. Challenges to greater savings are:

- Based on Trade Partner feedback, Trade Partners continue to be focused on new construction, and are less focused on system retrofits.
- Several trade partners have shifted their focus from system implementation to ongoing performance contracting. Performance contractors are often reluctant to participate in products that require the separate, custom analysis of results.
- A large portion of EMS retrofits are not cost-beneficial because traditional systems seldom yield demand savings and are expensive relative to their energy savings.

In response to the challenges, the Company:

- Visited trade partner offices to improve understanding. The meetings provide training about functions that can yield peak-coincident savings. They also highlight the value the product can have to the performance contractors. In several cases, the meetings have corrected trade partner misconceptions about project approval rates.
- Encouraged trade partners and account representatives to target projects for duel-fuel (gas and electric) customers.
- Evaluated and encouraged additional technologies and control strategies meant to yield additional on-peak savings, such as the implementation of demand control ventilation systems.

Changes in 2019

There were no changes to this product.

Heating Efficiency

The Heating Efficiency product provides rebates for retail natural gas business customers who purchase high-efficiency natural gas or dual-fuel commercial equipment for heating. The process load of the equipment must be less than 30 percent to qualify, (higher than 30 percent may qualify under the Custom Efficiency product). Product rebates are designed to promote, to qualifying customers, the installation of high-efficiency boilers, commercial water heaters, furnaces and electronically commutated furnace fan motors ("ECM"), pipe insulation, unit heaters, boiler tune-ups, and boiler system auxiliary equipment that improves combustion and seasonal efficiency. The Company communicates with customers and trade partners via direct mail, direct customer outreach via account managers and energy efficiency specialists. Low-cost and cost-efficient tactics such as email, newsletters, social media,

association meetings and trade shows are also used, as well as strategic partnerships with the Colorado Boiler Inspection Office, and the bi-annual Heating Advisory Board.

2019 Product Achievement
The product did not achieve its electric and natural gas energy savings target in 2019, and both electric and gas spend were below filed budget. The newly launched Ozone Laundry measure did not see any participation and is not being embraced by the industry to any significant degree. Several measures were not cost effective and will be shifted from prescriptive to custom to better evaluate actual performance.

Changes in 2019
The product completed a program evaluation in 2019 and plans to implement recommendations for increasing customer participation in the product.

LED Street Lights
The Company's light emitting diode ("LED") Street Lights product captures energy savings for local municipalities on the Street Lighting Service ("SL") Rate by replacing legacy Company-owned street lights with LED fixtures.

2019 Product Achievement
The Company far exceeded the forecasted 2019 target as participation and interest in the product increased with The City of Denver and Westminster replacing their eligible street lights from high-intensity discharge ("HID") lamps to LED technology.

Changes in 2019
There were no changes to this product.

Lighting Efficiency
The Lighting Efficiency product offers rebates to customers who purchase and install qualifying energy-efficient lighting. Prescriptive rebates are offered to encourage customers to purchase energy-efficient lighting and networked control systems by lowering the up-front premium costs associated with this equipment. Custom lighting and advanced lighting control rebates are also available for energy-saving lighting solutions not currently available as prescriptive rebate measures but require pre-approval prior to purchasing equipment and beginning a project.

2019 Product Achievement
Top performing measures in 2019 are LED Tubes, high-bay fixtures, troffers, and exterior area lighting. The product implemented several changes in response to an impact evaluation including a net-to-gross ("NTG") reduction. The NTG impact can be correlated to the savings realized, resulting in a 25 percent reduction in achievement over the filed target.

With the launch of the 2019/2020 DSM Plan, the product transitioned LED tubes, LED pin-based lamps, and LED mogul screw-based lamps from downstream to midstream LED Instant Rebate offering. The New Construction offering also transitioned out of Lighting Efficiency and into the Business New Construction product in response to the 2018 comprehensive evaluation.

Along with new challenges there are also new opportunities such as networked lighting controls, which is a newer measure the Company launched in September of 2018. The measure is slowly gaining traction

in the market closing just under a half gigawatt hour of savings. The Company will continue its efforts to promote the networked lighting controls offering to customers and contractors in 2020.

In addition, market research also suggests that customers only retrofit a portion of their facility focusing on the areas of highest need first. This information will provide the Company insight on how to continue to build personal relationships with our customers and generate additional lighting projects.

Changes in 2019
In February 2019, the Company posted a 60-Day Notice to make changes to the product in response to the 2018 Comprehensive Evaluation. The evaluation provided key findings in the areas of NTG, rebate application form, and investigated the DLC verses non-DLC qualified offerings.

The product posted a second 60-Day Notice in July to update and correct the forecasted savings and deemed saving technical assumptions for both downstream and midstream rebate offerings. More specifically, the Company updated the baseline for malfunctioning fixtures prior to retrofit, corrected the hours and coincidence factors for midstream lighting, and expanded the LED high/low bay wattage options for fixtures and retrofit kits.

A November 60-Day Notice was filed to correct an omission for midstream and update incremental costs for T12 baseline equipment. The midstream offering also added two additional offerings within existing rebate measures to support a better customer experience.

The product wrapped-up the year completing a 2019 impact evaluation and baseline study. The evaluation will reduce the NTG in future years. This will have an impact on the potential for the product to maintain high savings rates and cost effectiveness in the future.

Lighting – Small Business
The Lighting – Small Business product offers recommendations for energy-saving measures, special services, and attractive rebates to business customers who purchase and install energy-efficient lighting equipment in existing facilities. In addition, the product partners with the Energy Analysis product to provide customers with a comprehensive audit identifying energy savings opportunities from lighting to cooling to heating. Customers with a peak demand under 100kW are eligible to receive free direct installation of lighting and non-lighting measures. The product is available to businesses with peak demand of up to 400 kW and seeks to overcome barriers that often prevent small businesses from investing in energy-efficient lighting, including limited financial resources and time, low awareness of lighting equipment, and lack of access to quality contractors.

2019 Product Achievement
The product achieved its electric savings target and came in under budget. The product's highest performing measures included LED troffers, LED area lights, and LED lamps offered through the Business LED Instant Rebate Program.

With the launch of the 2019/2020 DSM Plan, the product transitioned LED tubes, LED pin-based lamps and LED mogul screw base lamps from the downstream offering to the Business LED Instant Rebate offering making it easier for customers to participate with less paperwork and no wait for a rebate. By the end of the year ~4.5 GWh of savings from LED tubes, Moguls and pin-based lamps were achieved in the LED Instant Rebate offering. The LED Instant Rebate channel has continued to be very

successful for the product and the Company will continue to explore adding additional measures to the offering.

Achievement declined in 2019 in most measures offered through the downstream prescriptive offering and the Company is exploring ways to provide more segmented and personalized communication to small business customers to boost achievement in the following years. Direct Installation participation was also significantly lower in 2019 than in previous years with the shift from lighting assessments to comprehensive energy analysis audits. The product is exploring ways to increase participation and provide eligible customers with free measures that introduce them to the benefits of energy efficiency.

The Company also conducted an analysis on the type of customers the product was serving and made efforts to ensure that the more specialized services and support offered by the Small Business Lighting product were being provided to the customers the product was created to serve including customers with limited knowledge of energy savings potential in lighting system upgrades, limited capital, time and limited access to qualified contractors.

Changes in 2019
In July 2019, the Company posted a 60-Day Notice to correct the hours and coincidence factors for the LED Instant Rebate (midstream) product, expand the wattage options for LED high/low bay fixtures and retrofit kits, and track fixtures that were malfunctioning prior to retrofit. The Company posted an additional 60-Day notice in November 2019 to correct deemed savings assumptions and expand lamp types for the LED Instant Rebate product and update incremental costs for T12 baseline equipment.

Motor and Drive Efficiency
The Motor & Drive Efficiency product is designed to encourage customers to purchase high-efficiency motors and variable frequency drives used on fans, pumps, and eligible industrial equipment. The Company offers prescriptive rebates to customers who install qualifying equipment, and custom rebates to those customers whose projects do not meet the prescriptive criteria.

2019 Product Achievement
The Motor and Drives Efficiency product did not achieve its savings target in 2019. Clean Water Pumps were introduced too late to impact the energy savings but are expected to provide substantial savings in 2020. The product underspent its filed budget.

Changes in 2019
In August, the Company posted 60-Day Notice to update the incremental cost assumptions for Variable Frequency Drives and added Clean Water Pumps as a prescriptive measure.

Multifamily Buildings
The Multifamily Buildings product is designed to engage multifamily building owners in deploying DSM measures that will lower customers' energy consumption. The multifamily customer segment has historically been a difficult market to reach with traditional DSM products because building/equipment owners may not be the metered bill payer for individual units. The product first launched as a pilot in 2014 and was designed to encourage DSM participation by offering an energy assessment and direct-install improvements for individual units and common areas at no cost to the customer. The assessments are also used to identify larger prescriptive and custom efficiency opportunities for improvements to mechanical and lighting systems and for common areas.

The product engages customers in a three-stage process:

Stage 1. Energy assessment
Stage 2. Direct-install measures
Stage 3. Traditional energy efficiency improvements (comprehensive building upgrades, custom/ prescriptive projects, etc.)

2019 Product Achievement
The Multifamily Buildings product underachieved the electric and gas savings targets. Expenditures were in line with the achievements. Renewed outreach efforts to engage properties along with a high volume of assessments performed in Q4 should lead to increased conversion rates in 2020.

Changes in 2019
In accordance with the 2019/2020 DSM Plan Settlement Agreement, the product issued a Request for Proposal and a new third-party implementer was awarded the contract for 2019 and 2020 services. The product moved to a pay-for-performance model to promote customer participation in larger Stage 3 energy efficiency improvements. Additional product measures were assessed as possible additions for direct-install in 2020.

New Construction
The New Construction product's mission is to help business customers prioritize energy efficiency when constructing new buildings. By providing whole-building energy analysis for larger buildings, as well as consultation and checklists of energy savings opportunities for smaller buildings, the Company is helping customers achieve their energy and sustainability goals.

The Energy Design Assistance ("EDA") component of the New Construction product was the primary offering to customers in 2019. Features include comprehensive energy consulting services in support of integrated design processes by providing; computer modeling of planned designs; funding to offset the cost of design time associated with increased energy analyses; financial rebates to reduce the upfront cost of packages of energy-efficient measures; and field verification to ensure that the strategies are installed per the design intent.

The Energy Efficient Buildings ("EEB") component of the product is a combination of prescriptive measures and custom analyses that allows customers to package numerous measures in just one application. The EEB process provides preliminary rebate amounts per measure, giving the customer the tools to make early decisions to influence efficient equipment choices

2019 Product Achievement
The product exceeded its saving targets for both electric and gas. The product was cost-effective due to the efforts focused on more accurate reporting and an educational initiative with our modelers centered around the components affecting cost effectiveness and helping customers make the best choices. The product also allocated spend more accurately between the electric and gas components based on actual project achievement for each fuel. The EDA offering remained the primary offering in terms of share of overall achievement.

The company is also currently exploring additional channels to help promote the Flexible Compliance Options of the City of Denver's Green Roof Ordinance to assist customers with buildings over 25,000 square feet to comply with the ordinance. The Energy Design Assistance product accepted over 40

projects that fall under the Green Roof Ordinance, and the company is currently working with the approved Energy Modeling Consultants and Xcel Energy Account Managers to help customers understand ordinance.

Changes in 2019
The New Construction product posted a 60-day notice in the third quarter. The Notice added a new lighting measure to the new construction product offering that was previously captured under the Lighting Efficiency Product in response to the 2018 Comprehensive Evaluation. The redesigned New Construction Lighting measure uses the Energy Efficient Buildings offerings to incentivize Lighting Power Density (LPD) better than the code baseline. This change in product offering better serves customers participating in the New Construction product.

Recommissioning
The Recommissioning product is designed to assist electric and/or natural gas business customers to improve the efficiency of their existing building operations by identifying functional systems that can be "tuned up" to run as efficiently as possible through low- or no-cost improvements. Recommissioning consists of two main steps: (1) diagnosis (studies) and (2) implementation. Public Service offers rebates for recommissioning studies and for the implementation of recommissioning measures.

2019 Product Achievement
The product did not achieve its electric and natural gas energy savings target in 2019. Underachievement is due primarily lack of implementation of identified energy savings measures. In response to this, the Company implemented changes in how the study rebate is paid to the Customer. The Company will continue to bring on additional study providers to identify customers that would benefit from participating in the product. Positively, the product did see an increase in customers participating in the Small Building Tune-Up offering, and addition of new study providers certified to conduct recommissioning studies. The product underspent its filed electric and gas budgets.

Changes in 2019
Following the launch of the 2019/2020 DSM Plan, pre-approval applications required customers to implement 75 percent of the identified measures with a less than one-year payback, up to $10,000 in costs before receiving their study rebate. This action will increase the implementation of identified measures and increase product savings.

Self-Direct
The Self-Direct product provides large commercial and industrial electric customers in Colorado the opportunity to control all stages of their energy saving projects' rebate application process. The product allows the customer to perform all the required activities and incur all the costs for the identification, study, design, engineering, Measurement & Verification ("M&V"), and reporting work associated with energy savings projects. These steps are comparable to the Company's Custom Efficiency product but because the customer is responsible for most of the administrative and engineering activities, the customer is eligible to receive a higher rebate than is offered through the Custom Efficiency product. The Company's role in this process is one of support through the project stages including verification of customer eligibility, pre-approval of proposed projects, development of the approved M&V plan, and verification of project completion prior to rebate processing.

The product is open to those customers who have an aggregated peak load of at least 2 MW in any single month and an aggregated annual energy consumption of at least 10 GWh.

2019 Product Achievement
The product exceeded its electric savings target in 2019. The product has a strong forecast going into 2020. The Company met with engineering firms to identify potential new projects for the product pipeline and to discuss new technologies that can help customers better manage their energy and demand use.

Changes in 2019
There were no changes to this product.

Strategic Energy Management
The Strategic Energy Management ("SEM") product is new for 2019. It replaces the Process Efficiency product and the Energy Information Systems ("EIS") measures from prior DSM Plans, and it adds enhancements compared to the prior offers.

SEM is a holistic approach to managing energy for persistent savings and continuous improvement. It is a high-value offer that draws from the portfolio's prescriptive and custom products and adds on-going coaching. The product influences business practices by stressing system-level operational change. It also promotes cultural change among customers' senior management, mid-management and operational personnel.

The product provides customers a Strategic Energy Management Consultant ("SEMC"). The Company usually sources SEMCs via a third-party subcontractor. The SEMCs are shared, in that they are assigned to multiple customers. However, the same individual(s) remain assigned to the customer throughout the customer's engagement in the product.

The Company and SEMC customize activities to meet the individual customer's needs. Where applicable, SEM delivery includes providing or facilitating three categories of activities:

1. Fostering customer commitment, by helping the customer:
   - Set or affirm goals and translate the goals into policies about how all decisions should consider energy use.
   - Quantify and justify resources needed for goal attainment.
   - Establish an internal Energy Team with defined roles and responsibilities
2. Planning and Implementation
   - Creation of a high-level energy map identifying the major uses and areas for further study.
   - Helping the customer establish the most effective Energy Performance Indicators.
   - Performing energy walk through scans and/or detailed studies.
   - Maintaining a project register and driving implementation through formalized, regularly scheduled follow-up sessions.
   - Engaging employee operators
   - Reassessing and reprioritizing project
3. Supporting a system for measuring and reporting energy performance; the Company
   - Assists customers in determining the most appropriate Energy Performance Indicators
   - Demonstrates analysis techniques.
   - Sets examples for the regular communication of result

2019 Product Achievement
The product exceeded its energy savings targets and its spending was within budget. It also exceeded its expectations for peak coincident demand savings. Reengagement with previous product participants was an important factor in this achievement. Savings were also achieved from the nine customers who enrolled within the year. A wide range of industrial and institutional customers completed projects. The product also enrolled its first three commercial office buildings as a trial for that customer segment.

To expand customer enrollments, the Company began offering to prospects a free SEM Qualification Assessment. Assessments include an on-site technical review and a management interview. Each assessment concludes with a brief report, which better informs decisions about enrollment. All prospects received a list of energy efficiency opportunities to pursue.

Compared to the prior EIS enrollments, the Company now promotes efficiency implementation before waiting on installation of an energy information analytical system. Where possible, the SEMCs leverage existing measurement and management tools. They also offer consultation for scoping needed analytical systems. System incentives are available for enrollees who need to augment their systems or sub-metering. For system incentives, customers do not need to enroll in a distinct program path. System incentives, however, require specific approval based on savings potential.

As the product evolves based on customer needs, the Company continues to seek and share best practices through interaction with the Consortium for Energy Efficiency, the American Council for an Energy-Efficient Economy, ESource, and the Southwest Energy Efficiency Project ("SWEEP").

Changes in 2019
In accordance with the 2019/2020 DSM Plan Settlement Agreement, the Company began negotiations with the product implementers to expand a cohort pilot into a full cohort in 2019; however, a launch is not expected until the second quarter 2020.

General Advertising - Business
The General Advertising - Business budget allows Xcel Energy to implement a variety of cross-product advertising and promotional plans for the Business Program. In 2019, the Business Program strategies included multimedia advertising and promotion of our business products. These strategies allowed the Company to reach key customer audiences, build general awareness of and educate business decision makers on the benefits of product and service offerings. Efforts included a variety of messages, including, but not limited to, lighting, heating, and cooling products.

2019 Product Achievement
No realized savings are tied to this budget; however, increased promotional efforts in 2019 helped the Company achieve increased awareness which leads to higher energy savings across the Business Program.

Changes in 2019
None.

Residential Program

The Residential Program serves customers who live in single-family dwellings, apartments, or condominiums and receive electric and/or natural gas from Public Service. The Company focuses on cost-effective, direct-impact products. This effort is supplemented with educational services intended to further increase customer understanding and interest in conservation and energy efficiency.

Electric

In 2019, the Residential Program slightly exceeded its targeted electric energy savings. Electric expenditures were in line with the additional savings and the program was, overall, cost effective. Home Lighting and Recycling continued to be the primary contributor to the program by delivering the majority of the program's electric energy savings; and exceeding its target. ENERGY STAR® New Home, Evaporative Cooling, and High Efficiency Air Conditioning all cost-effectively exceeded their product specific forecasts in 2019. A summary of the Company's Residential Program achievements for electric DSM products is shown in Table 16a below.

Table 16a: Residential Program – Electric DSM Products (Budget to Actual)

	Budgets / Targets				Expenditures / Achievements			
Residential Program - 2019	**Electric Budget**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**	**Electric Expenditures**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**
Energy Efficient Showerhead	$ 37,727	86	1,011,152	13.36	$ 30,805	38	464,634	9.22
Energy Feedback Residential	$ 2,990,084	5,096	21,731,615	1.22	$ 3,188,894	7,266	18,763,744	1.22
ENERGY STAR New Homes	$ 1,397,326	1,066	3,092,103	0.88	$ 1,102,622	981	4,734,206	1.39
Evaporative Cooling	$ 4,204,300	6,122	4,727,651	3.43	$ 3,725,456	7,746	5,993,754	5.26
High Efficiency Air Conditioning	$ 2,039,560	1,819	1,795,587	1.25	$ 3,280,675	2,743	2,788,315	1.32
Home Energy Squad	$ 448,214	395	1,647,889	1.20	$ 449,682	178	1,389,518	0.93
Home Lighting & Recycling	$ 5,723,745	12,547	89,054,545	2.58	$ 7,238,233	14,093	116,719,772	2.90
Home Performance with ENERGY STAR	$ 650,685	410	219,247	0.65	$ 155,521	153	138,975	0.87
Insulation & Air Sealing	$ 440,996	455	507,035	0.89	$ 207,605	317	163,358	0.97
Refrigerator & Freezer Recycling	$ 1,232,233	599	3,935,695	1.04	$ 1,118,707	431	3,570,691	1.36
Residential Heating	$ 911,100	1,056	5,769,742	1.21	$ 728,856	982	5,335,684	1.56
School Education Kits	$ 1,710,283	1,335	10,433,360	1.30	$ 1,773,105	1,095	9,985,776	1.36
Water Heating	$ 1,083,610	739	5,018,807	1.29	$ 50,927	17	116,034	0.94
Thermostat Optimization	$ 261,695	1,653	1,352,112	1.67	$ 234,977	1,151	863,064	1.85
General Advertising-Res	$ 575,496	-	-	-	$ 753,415	-	-	-
Residential Program Total	**$ 23,707,054**	**33,377**	**150,296,541**	**1.88**	**$24,039,481**	**37,191**	**171,027,524**	**2.57**

Natural Gas

The Residential Program exceeded its natural gas savings target with strong results in the majority of products, including Residential Heating and ENERGY STAR® New Homes. This overachievement impacted the budget as significant rebate payments resulted in overspending of the budget.

A summary of the Company's Residential Program achievements for natural gas DSM products is shown in Table 16b below.

Table 16b: Residential Program – Natural Gas DSM Products (Budget to Actual)

	Budgets / Targets					Expenditures / Achievements				
Residential Program - 2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio	Gas Expenditures	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Energy Efficient Showerhead	$466,699	53,079	113,733	$6,598,758	10.66	$360,480	32,438	89,985	$4,069,988	9.63
Energy Feedback Residential	$445,965	78,718	176,511	$314,728	1.74	$476,554	88,743	186,218	$344,007	1.72
ENERGY STAR New Homes	$2,102,650	90,607	43,092	$1,066,038	1.21	$2,522,032	102,245	40,541	$1,561,345	1.24
Evaporative Cooling	-	-	-	-	-	-	-	-	-	-
High Efficiency Air Conditioning	-	-	-	-	-	$394,684	18,401	46,621	$900,367	2.84
Home Energy Squad	$313,228	11,836	37,788	$356,119	1.89	$261,611	3,624	13,851	$10,311	1.04
Home Lighting & Recycling	-	-	-	-	-	-	-	-	-	-
Home Performance with ENERGY STAR	$448,809	23,050	51,359	-$266,776	0.84	$177,351	7,952	44,837	-$108,074	0.83
Insulation & Air Sealing	$373,309	20,735	55,544	-$69,850	0.95	$380,203	19,457	51,175	-$184,123	0.88
Refrigerator & Freezer Recycling	-	-	-	-	-	-	-	-	-	-
Residential Heating	$937,394	55,432	59,134	-$595,323	0.93	$1,773,926	69,970	39,443	$235,091	1.04
School Education Kits	$530,158	40,599	76,579	$4,908,049	7.84	$647,840	45,946	70,922	$5,550,139	7.61
Water Heating	$117,735	3,975	33,759	-$187,009	0.63	$98,480	4,625	46,961	-$217,933	0.61
Thermostat Optimization	$82,002	18,933	230,889	$147,732	0.80	$155,755	25,082	161,037	$459,198	1.76
General Advertising-Res	$70,252	-	-	-	-	$149,089	-	-	-	-
Residential Program Total	**$5,888,200**	**396,964**	**67,417**	**$12,202,213**	**1.78**	**$7,398,006**	**418,481**	**56,567**	**$12,471,227**	**1.69**

Residential Products

The following provides a brief summary of the performance of each residential DSM product in 2019.

Energy Efficiency Showerhead

The Energy Efficiency Showerhead product has delivered reliable and cost-effective natural gas and electric savings to Public Service customers since 2009. Residential natural gas and combination natural gas and electric customers are eligible to receive a free kit—valued at $30—containing energy-efficient showerheads and aerators to help reduce their energy and water use costs. The product continues to prove to be a popular energy saving solution. The product not only provides energy savings, but also water savings that are equally beneficial to customers and the environment.

Recognizing that many customers have more than one shower and one bathroom sink in their home, participants are offered the choice of a one- or two- bathroom kit to retrofit their current configuration, which also includes a kitchen faucet aerator. Customers are provided with education and instructions for installing the units and later surveyed to determine the installation rates of each unit.

2019 Product Achievement

The product did not achieve its electric or gas savings targets. The Company has shifted the product to offer more customizable kits which has made digital marketing more difficult. Therefore, the Company has focused on direct mail marketing more than it has in previous years as well as non-traditional efforts like giveaways to drive participation. Additionally, some delays in the marketing schedule, fulfillment of orders, and technical limitations of the Company's rebate tracking systems caused some orders placed late in 2019 to be delayed to first quarter of 2020.

Changes in 2019

There were no changes to this product.

Energy Feedback Residential

The Energy Feedback Residential product provides targeted communication of energy-use comparisons and information called the Home Energy Report to residential customers, including specific recommendations and feedback intended to motivate and educate customers on how to reduce their

energy consumption. Customers receive new information with each report that is delivered, by mail, email, or a combination of both. An online version, referred to as My Energy, provides similar information along with supplemental energy-awareness and savings tools. Savings are determined by comparing the energy consumption of the participating "treatment group" (those receiving the reports) to a non-participating "control group." Realized energy savings increase gradually over time as behavior is impacted by treatment. Product savings are measured and reported to the Company each month by the third-party implementer.

2019 Product Achievement
The product failed to achieve its electric and gas targets which were increased during settlement discussions with key stakeholders in an effort to improve overall Residential savings and cost-effectiveness in 2019 and 2020. In particular, gas savings opportunities were emphasized in in Home Energy Reports throughout the year, which reduced electric savings opportunities prompts.

Changes in 2019
The Company added one new cohort of gas and electric customers in 2019 to maintain participation levels. The Company also selected a new vendor to deliver Energy Feedback starting in 2020.

ENERGY STAR® New Homes
The ENERGY STAR® New Homes ("ESNH") product provides builders of single-family and small multifamily homes with an incentive to exceed local building codes and go beyond common construction practices. Homes must achieve at least a 10 percent improvement over their local jurisdiction's energy code in order to qualify. All homes are evaluated and rated by an independent third-party Home Energy Rating System ("HERS") rater. The Residential Energy Services Network accredited HERS raters consult with homebuilders during the construction process and ensures the energy-efficiency measures have been properly installed in the home. Homeowners benefit from lower energy bills, fewer maintenance concerns, higher resale value, and a more comfortable, quiet home.

2019 Product Achievement
The product exceeded electric and natural gas savings targets and spending was in line with overachievement. A large percentage of the qualifying homes were completed in jurisdictions with 2015 IECC as their adopted energy code. 2009/2012 IECC represented a much smaller percentage when compared to previous years. 2015/2018 IECC are expected to be the predominant energy codes for qualifying homes in 2020 as jurisdictions on older energy codes have adopted newer codes in 2019. The Company does not expect this to impact product participation and the product should remain cost effective.

Changes in 2019
With the launch of the 2019/2020 DSM Plan, the prescriptive rebate for refrigerators was discontinued. New prescriptive rebates for heat pump water heaters, radon fans, and smart thermostats were added to the product. Analysis of the product design began in 2019. The Company is reviewing product design elements and new measures to ensure proper stewardship of customer funds while achieving Company strategic goals.

The Company posted a 60-Day Notice in August to discontinue the prescriptive rebate for lighting following an update to the Home Energy Rating System modeling application which captured the lighting savings within the envelope calculation. A second 60-Day Notice was posted in December to update costs associated with the 2018 IECC standards.

Evaporative Cooling

The Evaporative Cooling product provides a rebate to Public Service's residential electric customers who purchase and install qualifying evaporative cooling equipment. For homes in dryer climates such as Colorado, this equipment provides cooler, more comfortable air—like an air conditioner—but with significantly lower ongoing energy usage. Upfront costs vary widely, depending on the evaporative cooler the customer chooses. Customers can do their own installations or use any contractor to help with the installation of the equipment.

2019 Product Achievement

The product exceeded the participation and energy savings targets which for the year and stayed within budget.

Several new marketing tactics were designed and implemented for retail channel use. Most significantly, customers could get an instant rebate coupon and use it at checkout through many retail locations. A vendor partner continued to work with retail locations to educate staff, place rebate applications on qualifying coolers, and maintain signage. The Company also hired a "secret shopper" to evaluate the efficacy of their efforts. Additionally, the Company invited 174,000 customers to attend "neighborhood" retail special events, 37 events in all, which created the opportunity for the vendor partner to personally educate over 4,000 customers about evaporative cooling.

Another tactic was developed and implemented for the trade partner channel. Several distributors of evaporative coolers participated in offering instant rebates to their dealers. It was not used by as many dealers as anticipated and required a significant amount of effort and time on the part of the distributors. For those reasons, and because the design also delayed reimbursement to the distributors without significantly increasing the number of coolers sold, this will not be continued in 2020.

Changes in 2019

The Company issued a 60-Day Notice in February to implement changes to the rebate structure as recommended in the 2018 product evaluation. Another 60-Day Notice was issued in December to further refine and simplify the rebate structure following a review of 2019 participation.

High Efficiency Air Conditioning

The High Efficiency Air Conditioning product comprehensively addresses energy-efficiency opportunities related to central air conditioning ("AC"), air source heat pumps ("ASHP"), quality installation ("QI"), mini-split heat pumps ("MSHP"), ground source heat pumps ("GSHP"), and the Western Cooling Control ("WCC").

QI is the source of significant energy savings when customers have a new AC-ASHP-GSHP installed. QI consists of right-sizing the new system, having sufficient air flow, having ventilation ducts sealed, and having the system refrigerant charged correctly. Third party inspections of participating contractors' work again confirmed their effective use of QI with realization rates of over 98 percent. NATE certification and an online class are requirements for participating contractors.

2019 Product Achievement

The product met expectations related to participation and energy savings but exceeded the filed budget, in part because the upper tier of AC-ASHP rebates were $600 through June before reducing to $500

following implementation of the 2019/2020 DSM Plan. The product also offers trade incentives, paying higher trade rebates for more cost-effective measures.

The AC-ASHP rebate structure was simplified in late 2018, and 2019 results aligned with the forecast. The use of rebates for lower efficiency systems more than doubled over 2018; this is good for customers because they have lower upfront expenses and the ongoing energy savings are proportionately higher than for 16 – 18 SEER systems.

MSHP use grew 12 percent but is still underperforming compared to Company expectations. ASHP use almost doubled but is still less than 1 percent of all split systems rebated. GSHP rebates are rarely used, with less than ten rebated; this has been true for several years. No customers have used the rebate for the WCC device since its introduction several years ago.

Changes in 2019
Two changes were made, both related to the duct sealing component of Quality Installation. A 60-day notice was filed in October to claim gas savings from the duct sealing component of QI, for customers heating their homes with natural gas furnaces. Also, Aeroseal, a product that seals central ventilation ducts from inside the ducts, became an acceptable alternative to traditional exterior duct sealing.

Home Energy Squad
The Home Energy Squad product offers energy-efficiency installation services and discounted equipment costs to customers who seek to improve their homes' energy efficiency and comfort levels and lower their utility bills. The product had a successful track record in other Xcel Energy service territories, and, therefore, was launched in Colorado in mid-2015.

For a small trip fee, the Home Energy Squad product installs several moderate-impact, low-cost measures for combination natural gas and electric customers, and electric-only customers, at no additional cost, and offers additional "a la carte" measures at a discounted cost. The product seeks to assist customers in overcoming barriers related to making energy efficiency improvements. Such barriers include confusion on which products are right for their home, product cost and payback, and finding qualified installers.

2019 Product Achievement
The Home Energy Squad product did not achieve its energy savings targets. The product remained under its natural gas budget but slightly exceeded the electric budget. The electric overspend was due primarily to high product administrative costs and staffing fees, which were the result of a lack of participation over the summer months. More consistent marketing and product outreach should mitigate this challenge in 2020.

The product utilized a multi-channel marketing campaign to promote the product which included digital advertising, social media, radio, bill onserts, and email targeting during the year. The product also worked closely with the Partners in Energy product to promote Home Energy Squad at community events throughout the Company's service territory. A partner cities initiative was also introduced, through which communities could subsidize the cost of a Squad visit for their residents. This capability was rolled out late in the year and saw immediate success. It will also help to drive participation in 2020.

Changes in 2019

Direct-install smart thermostats were added as a new measure to the product, with the goal of helping customers sign up for AC Rewards during their Squad visit. This new capability should encourage more customers to sign up for a Squad visit in 2020.

Home Lighting & Recycling

The Home Lighting & Recycling product offers discounted prices, via upstream incentives to retailers and manufacturers, on ENERGY STAR LEDs as well as an environmentally-friendly way to dispose of spent compact fluorescent lights ("CFLs"). Energy-efficient light bulbs are an easy and low-cost way for customers to save energy and reduce their monthly electric bills.

The Home Lighting & Recycling product is widely promoted through a variety of marketing channels, including radio, TV, social media, print publications, bill onserts, and point-of-purchase displays. We continued to have opportunity to prominently feature discounted bulbs in high profile areas which increases the visibility of our product. The Company promotes the product at local events in the community such as fairs, energy workshops, earth day celebrations, and sporting events, such as partnering with the Colorado Rockies team.

2019 Product Achievement

The product exceeded its electric energy savings target and exceeded the budget target, which was in line with the extra savings achieved. Significant achievements were made in growing LED sales to just over 4 million units, which is almost double the number of bulbs relative to the 2.1 million units in 2018.

To encourage participation and increase customer awareness of efficient lighting options, we increased the number of community events that home lighting was featured at and we plan to continue having this presence at local events in the future. The Company also offered a deep discount promotion on A-line and BR30 multi-packs in select stores throughout the year, which was well received by customers. In-store retailer demos continue to be a source for consumer education and outreach where product field representatives work with consumers to provide education on bulb color, lumens and wattage equivalencies, helping customers find the right bulb for the right task and promoting ENERGY STAR products.

The Company has put increased focus on LED bulbs to drive transformation in the marketplace and although the lighting market continues to mature, the National Electric Manufacturers Association ("NEMA") lamp shipment indices confirm that there is still room for consumers to replace inefficient bulbs (i.e. halogen and CFLs) with LED A-line, specialty and linear tubes.

Changes in 2019

The Company issued a 60-Day Notice in February 2019 to adopt recommendations from the 2018 Comprehensive Evaluation. The product also added an offering for linear LED tubes as part of the 2019/2020 DSM Plan.

Home Performance with ENERGY STAR®

Home Performance with ENERGY STAR® ("HPwES") is a comprehensive, whole-home retrofit product designed to give cash rebates to customers for implementation of measures identified during a Home Energy Audit or Home Energy Squad Plus visit.

Upon completion of the product improvements, a post-improvement verification inspection is conducted. The Company's third-party implementer is responsible for performing quality assurance on

the in-home inspections, the home energy audit reports, and the audit itself. The implementer also provides customer support, contractor management, and oversight of the energy modeling software.

The Company promoted the product through community program partnerships along with Insulation and HVAC trade education and promotion.

2019 Product Achievement
HPwES underachieved its electric and natural gas savings targets and came in under budget. The Company continued to research potential product participation barriers which contributed to a product restructuring in the fourth quarter. The product will continue to be evaluated in 2020 to assess the need for additional structure and/or rebate changes.

Changes in 2019
The Company posted a 60-Day Notice in May and August to align product measures and rebates with those offered in the High Efficiency Air Conditioning and Evaporative Cooling products. An additional 60-Day Notice posted in December enacted the first phase of the product redesign agreed to in the 2019/2020 DSM Plan Settlement Agreement.

Insulation & Air Sealing
The Insulation & Air Sealing product offers prescriptive rebates in order to increase the energy efficiency in single-family homes and one to four-unit residential properties. This product is available to combination electric and natural gas service customers, natural gas service residential customers, or electric service customers who heat their homes with electrically-powered baseboard heat. To qualify for the rebate, customers must have the insulation professionally installed by a contractor with a Building Performance Institute certification, and must make air sealing improvements first, unless the house does not require additional air sealing improvements.

2019 Product Achievement
The Insulation product exceeded its natural gas targets; and spend was in alignment with the overachievement. The product did not meet the kW or kWh targets; and spend was in alignment with the underachievement. This was due to a lower participation rate among electrically heating homes. The Company will engage trade partners through messaging and trainings to boost participation in this segment of the product.

Changes in 2019
The Company added a cellular window shade measure to the product as part of the 2019/2020 DSM Plan. This offering is available to customers who heat with Xcel Energy electric or natural gas and have air-conditioning.

Refrigerator & Freezer Recycling
The Refrigerator & Freezer Recycling product is designed to decrease the number of inefficient refrigerators and freezers in the Company's service territory in an environmentally safe and compliant manner and, by doing so, achieve electric energy savings and peak demand reduction. Customers receive an incentive plus free pickup and disposal of their operable, inefficient refrigerator and freezer. A third-party implementer administers the product, including customer scheduling, pickup, recycling, and rebating. This product is primarily marketed through email, bill onserts, direct mail, print, and online/social media efforts.

2019 Product Achievement
The product fell just short of its participation target in 2019 and did not meet its electric savings targets due to lower-than-expected per-unit savings. Product spending was under-budget primarily due to efficient use of the marketing budget. To increase participation, the Company offered a bonus rebate in the spring and fall and utilized email as a low-cost marketing channel.

Changes in 2019
Following implementation of the 2019/2020 DSM Plan, the product offered a new savings measure for room air conditioning units.

Residential Heating
The Residential Heating product provides rebates to customers who purchase 95%+ AFUE furnaces for residential use. Customers benefit because a high-efficiency furnace and/or an electronically commutated ("EC") motor uses less energy and lowers monthly bills over the life of the equipment. The EC Motor rebate was available when paired with a non-qualifying new furnace, as well as with a qualifying new furnace.

2019 Product Achievement
The product overachieved on natural gas savings forecast but underachieved on its electric savings. Expenditures were in line with the achievements. The number of participating trade partners using the 95% AFUE furnace rebate increased 8 percent in 2019. A bonus rebate of $300 was offered on 95%+ AFUE furnaces from January through March 2019, in addition to the standard rebate of $300, and participation exceeded Company expectations.

Changes in 2019
NATE certification was removed as a trade partner participation requirement in the 2019/2020 DSM Plan.

School Education Kits
The School Education Kits product combines a set of classroom and in-home activities with projects that enable students and parents to install energy efficiency measures in their homes. The product is targeted to fifth and sixth grade students in the Company's electric and natural gas combined service territory. A third-party implementer fully administers the product, including recruiting and training teachers, providing all materials, and tracking participation and installation rates among the students.

2019 Product Achievement
The product did not achieve its electric savings targets but exceeded its natural gas savings target. Over 1,500 students in natural gas-only service territory were enrolled in a joint effort with Fort Collins Utilities. This effort allowed the product to reach additional customers and deliver cost-effective gas savings for the product. The success of the product can be attributed to continuous participation from teachers and follow-up communications to emphasize the importance of installing the provided measures. Installation rates remained high in 2019 due to the popularity of LED bulbs and accounting for customers planning to install measures in the near future. Previously, these customers were counted as not installing their measures.

Changes in 2019
The product introduced two new pilot offerings in 2019: (1) a specialty bulbs kit; and (2) an innovation kit targeted at high school students. The specialty bulbs kits tested the efficacy of specialty LED bulb

types, such as candelabras and BR30s, for possible inclusion in future kits. The innovation kits evaluated the potential of an advanced power strip measure for possible inclusion in future kits, as well as a new professional presenter delivery channel as an alternative to teacher-led content. These pilots will continue in 2020 and results will inform the product design for the 2021-2022 time period.

Thermostat Optimization

The Thermostat Optimization product is designed to provide residential customers year-round savings using smart thermostat technology. The product incentivizes residential customers to purchase and install smart thermostats that have earned the ENERGY STAR® Connected Thermostat certification, resulting in year-round electric and natural gas savings. This product is available to combination electric and natural gas service customers, natural gas service residential customers who have central gas heating or electric service customers who have central air conditioning.

2019 Product Achievement

The product did not achieve its electric savings target but overachieved its gas savings target; spend was in line with achievement. The 2019 achievement was forecasted while the product was still in the pilot phase and included additional achievement from thermostat optimization which the Company opted to not launch in 2019 due to changes in the original manufacturer's contracting requirements. The Company is exploring other options with additional manufacturers for the 2020 program year as other optimization products become available. Company marketing campaigns launched during manufacturing price reductions including during Earth Day, Black Friday/Cyber Monday and again during the December holiday shopping season were very effective in significantly increasing participation.

Changes in 2019

Instant rebates on qualifying smart thermostats were introduced in 2019.

Water Heating

The Water Heating product leverages incentives to encourage residential customers to purchase energy-efficient water heating equipment. Rebates are available for natural gas storage tank and tankless water heaters and electric heat pump water heaters. Participating customers reduce their natural gas and electricity usage and long-term operating costs.

2019 Product Achievement

The product achieved its natural gas savings target while keeping spend in alignment with the budget. The product underachieved on its electric savings targets. The Company set very aggressive participation and savings targets for electric heat pump water heaters in 2019. Participation remained in line with previous years; however, the Company has focused on market research and marketing campaigns to increase customer awareness and participation for 2020 and beyond.

Changes in 2019

Instant rebates on qualifying natural gas and electric water heaters were expanded as part of the 2019/2020 DSM Plan. The Company added a tiered rebate structure for electric heat pump water heaters to encourage adoption of grid enabled models.

General Advertising - Residential

The General Advertising - Residential budget allows Xcel Energy to implement a variety of cross-product residential advertising and promotional plans. In 2019, the Residential Program strategies planned through this offering included multimedia advertising and promotion of our residential DSM

products through the anthem campaign. These strategies allowed the Company to reach large customer targets, build general awareness of and educate consumers on portfolio offerings, and promote specific products' benefits as well as increase engagement with our products. Products with specific marketing efforts included Home Energy Squad and the Home Lighting products.

2019 Product Achievement
No realized savings are tied to this budget; however, increased promotional efforts in 2019 helped the Company achieve higher energy savings across the Residential Program.

Changes in 2019
None.

Low-Income Program

The Low-Income Program consists of the Energy Savings Kit, Multifamily Weatherization, Non-Profit and Single-Family Weatherization products. These products analyze natural gas and electric consumption for low-income customers and provide them with products, services, and education designed to assist in lowering their energy bills.

Electric

In 2019, the Low-Income Program slightly underperformed its savings target due to shortfalls in the Energy Savings Kit and the Single-Family Weatherization while the Program's 2019 expenditures were under budget, in line with savings. The Multifamily Weatherization and Non-Profit products exceeded their electric energy savings targets due to higher than expected average project size.

A summary of the Company's Low-Income Program achievements for electric DSM products is shown in Table 17a below.

Table 17a: Low-Income Program – Electric DSM Products (Budget to Actual)

	Budgets / Targets				Expenditures / Achievements			
Low-Income Program - 2019	Electric Budget	Net Gen. kW	Net Gen. kWh	Electric MTRC Test Ratio	Electric Expenditures	Net Gen. kW	Net Gen. kWh	Electric MTRC Test Ratio
Energy Savings Kit	$490,368	329	2,600,605	1.36	$349,850	229	2,125,765	1.95
Multifamily Weatherization	$1,081,511	407	1,889,123	0.89	$1,079,499	195	2,105,751	1.13
Non-Profit	$1,119,608	383	1,701,178	0.99	$1,122,359	420	1,736,753	1.06
Single-Family Weatherization	$1,430,268	226	1,778,524	0.70	$1,303,440	229	1,550,777	0.77
Low-Income Program Total	**$4,121,754**	**1,344**	**7,969,430**	**0.90**	**$3,855,148**	**1,073**	**7,519,046**	**1.06**

Natural Gas

In 2019, the Low-Income Program met natural gas savings targets with strong achievement from the Single-Family Weatherization product. Expenditures were at budget, primarily driven by rebates to participants. A summary of the Company's Low-Income Program achievements for natural gas DSM products is shown in Table 17b below.

Table 17b: Low-Income Program – Natural Gas DSM Products (Budget to Actual)

	Budgets / Targets					Expenditures / Achievements				
Low-Income Program - 2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio	Gas Expenditures	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Energy Savings Kit	$148,295	14,458	97,493	$1,911,846	9.92	$109,711	13,949	127,147	$1,912,482	13.46
Multifamily Weatherization	$683,110	10,764	15,758	-$276,213	0.81	$692,844	9,574	13,818	-$79,743	0.94
Non-Profit	$362,950	3,910	10,773	-$157,575	0.78	$224,288	1,779	7,933	-$126,545	0.65
Single-Family Weatherization	$2,635,643	48,118	18,257	$263,148	1.09	$2,836,715	52,774	18,604	$387,453	1.07
Low-Income Program Total	**$3,829,998**	**77,250**	**20,170**	**$1,741,206**	**1.24**	**$3,863,558**	**78,077**	**20,209**	**$2,093,647**	**1.28**

Low-Income Products

The Low-Income Program (Energy Savings Kit, Multifamily Weatherization, Non-Profit, Single-Family Weatherization) has incorporated Spanish language collateral in several communication channels and continues to grow this initiative in 2019. All marketing and outreach material developed for the program has been translated into Spanish. New communication methods including text campaigns for education and follow-ups and community-based approaches have all included a Spanish language component. Non-profit partners, including the Hispanic/Latino community organization CREA Results, have been

contracted with to engage the Spanish speaking community in order to make these products more accessible. Energy Savings Kit collateral is printed and distributed in both English and Spanish. The following provides a brief summary of the performance of each low-income product in 2019.

Energy Savings Kit

The Energy Savings Kit product provides income-qualified customers with a free package of energy- and money-saving measures like LED lamps, showerheads, faucet aerators and other educational materials delivered by mail. The Company's electric and/or natural gas customers who qualify for energy assistance funding through the Colorado Low-income Energy Assistance Program ("LEAP") or other state assistance programs will be sent an offer through the mail, email or a partner agency to receive a free kit. Income-qualified customers are only eligible to receive a kit once every ten years so that the energy savings can be realized over the lifetime of the measures.

2019 Product Achievement

Although the product significantly improved electric and natural gas savings compared to the previous year, it slightly underperformed the more-aggressive natural gas and electric savings targets set for 2019. Participation continues to be the largest challenge to the product, despite efforts to identify additional qualifying customers. The Company partnered with Energy Outreach Colorado ("EOC") to qualify customers and connect brochure offers to partnering agencies. While this tactic proved hard to scale and did not bring in a large percentage of the total participation, it was positively received by both customers and partner agencies. Enhanced email marketing campaigns were the key drivers to increased participation compared to last year. In line with savings targets, the product stayed under budget.

Changes in 2019

There were no changes to this product.

Multifamily Weatherization

The Multifamily Weatherization product provides funding for a wide variety of natural gas and electric equipment retrofits, process improvements, facility audits, studies and behavioral change efforts for income qualified multifamily buildings. These buildings have common areas, greater square footage, more appliances and more potential retrofit measures than single-family homes.

The product's implementer EOC combines Company-budgeted rebates, administration and product delivery with funding from the Denver Office of Strategic Partnerships and other sources to propose comprehensive energy efficiency and demand management solutions to qualifying affordable housing customers. Each submitted project is evaluated using a custom analysis by the Company's energy efficiency engineers to determine cost-effectiveness. In some cases, prescriptive rebates are offered for retrofit measures when the equipment would otherwise be ineligible for inclusion in the custom project bundle, to offer greater flexibility.

In addition to weatherization measures, the Company, in partnership with EOC, worked on incorporating additional educational efforts into the product in a way that can be scaled up to all product participants. Energy in Action workshops from 2018 were effective for customer engagement; however, they ultimately proved unable to scale to all properties that participate in the product. A shift in 2019 focused on creating a "Program in a Box", where property owners receive resources and support tailored to the level of engagement desired from both the property owners and tenants. While no behavioral savings are presently captured, the education increases customer understanding, use, and satisfaction with the upgrades installed through the product.

2019 Product Achievement
The product exceeded its electric energy savings targets but fell slightly short of its natural gas savings targets. Electric demand reduction was less than expected as several low-income multifamily properties implemented off-peak measures like night time and exterior LED lighting upgrades. Natural gas participation was higher than expected as city housing authorities, low-income and senior citizen apartment building owners and property managers focused on upgrading boilers for space heating and/or distributed hot water, furnaces and insulation.

Changes in 2019
There were no changes to this product.

Non-Profit
The Non-Profit product provides funding for a wide variety of energy-efficient equipment upgrades and process improvements for qualified Section 501(c)(3) non-profit organizations within the Company's service territory whose core mission serves low-income individuals and families – shelters, safe houses, and residential treatment centers, for example.

The Company's rebates, administration and product delivery, coupled with funding from the Denver Office of Strategic Partnerships, grants and other sources enable EOC, the product's implementer, to offer cost-effective natural gas and electric efficiency and demand management proposals to qualified non-profit facilities. Each submitted project is evaluated using a custom analysis by the Company's energy efficiency engineers to determine cost-effectiveness. In some cases, prescriptive rebates are offered for retrofit measures when the equipment would otherwise be ineligible for inclusion in the custom project bundle, to offer greater flexibility.

In addition to offering efficient-equipment upgrades and system improvements, the Company, in partnership with EOC, facilitates "Energy in Action" plans for non-profit organizations that participate in the product. The plan provides non-profit organization staff with education on how to further reduce energy usage and save money by making easy changes and encourages continued engagement. Similar to the approach in Low Income Multifamily Weatherization, the product is looking to tailor education efforts to each participating non-profit, in order to create a more personalized interaction with customers based on their desired level of engagement. While no behavioral savings are presently captured, customer understanding, informed equipment use, and customers satisfaction have improved.

The partnership with EOC allows the Company to reach more customers and increase community impact. EOC leverages additional funding sources to decrease property owner contribution, allowing these organizations to put more of their budget back into serving the low-income community, thus increasing the impact and participation in the product.

2019 Product Achievement
The product exceeded its electric demand reduction and energy savings targets but fell short of its natural gas savings targets. Resources within the low-income portfolio were shifted to the low-income single-family weatherization product, where impact in 2019 exceeded goals. Electric and natural gas expenditures were at or below the budget, in line with savings achievement.

Changes in 2019

There were no changes to this product.

Single-Family Weatherization

The Single-Family Weatherization product offers free natural gas and electric efficiency measures – insulation, air sealing, furnace repair or replacement, water heaters, smart or programmable thermostats, showerheads and faucet aerators, refrigerator replacements, LED lighting and more – to low-income, single-family households in the Company's electric and natural gas service territory. In addition to energy efficient equipment and installation, a major focus of the product is customer education on ways to reduce energy use in the home.

The product is implemented in partnership with EOC, it helps to supplement both the federally funded Weatherization Assistance Program ("WAP"), aligning with State qualification guidelines, and the Colorado Residential Affordable Energy ("CARE") program. CARE accepts customers that are 80 percent of Area Median Income ("AMI"), which is important in the state of Colorado due to the rising cost of living.

2019 Product Achievement

The product exceeded its natural gas savings targets and met its electric demand reduction target but fell slightly short of its electric energy savings targets. Product spend was in line with savings achievement. Increased rebates for natural gas measures allowed for more participation in those measures, in addition to the health and safety funding. Energy Outreach Colorado utilized their network of non-profits and agencies across the state to distribute LEDs low income customers, including those that are hard to reach. The Company is working with EOC to identify and target customers that have electric heat, as well as identify customers eligible for evaporative cooler replacements to improve electric savings. The Company continued supporting EOC behavior change efforts and was able to claim savings on measures directly installed through this product.

Changes in 2019

The Company issued a 60-Day Notice to eliminate the Electronically Commutated ("EC") Motor Fan measure starting in 2020 when the Department of Energy designated EC Motors as standard efficiency. Rebate amounts for crawl space insulation and Standard evaporative coolers were also increased in order to cover the full equipment and installation costs in low-income single-family homes.

Indirect Program

The Indirect Program includes products and services that support the overall development and implementation of the DSM Plan. Most of these products and services do not directly produce energy or demand savings and are not independently evaluated for cost-effectiveness. However, DSM pilots that are being evaluated to become direct impact products and have measured savings do go through a cost-effectiveness evaluation. The costs of the entire Indirect Program are included in the overall portfolio cost-effectiveness evaluation. The Indirect Program has two core elements: Education/Market Transformation and Planning and Research.

Within Education/Market Transformation, the Company offered eight customer-facing products in 2019, including: Business Education, Business Energy Analysis, Consumer Education, Energy Benchmarking, Energy Efficiency Financing, Energy Star Retail Products Platform, Home Energy Audit, and Partners in Energy. These products did not deliver measured savings in 2019 and, therefore, were not evaluated for cost-effectiveness. However, these services do encourage participation in other direct-impact DSM products.

Within Planning and Research, the Company continued five internal services: DSM Planning and Administration, Program Evaluations, Market Research, M&V, and Product Development. In 2019, the Geo-targeting Pilot was the only pilot offered by the Company that included an energy efficiency component.

Electric

A summary of the Company's Indirect Program achievements for electric DSM products and services is shown in Table 18a below.

Table 18a: Indirect Program – Electric DSM Products (Budget to Actual)

	Budgets / Targets				Expenditures / Achievements			
Indirect Products & Services - 2019	**Electric Budget**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**	**Electric Expenditures**	**Net Gen. kW**	**Net Gen. kWh**	**Electric MTRC Test Ratio**
Education/Market Transformation								
Business Education	$176,739	-	-	-	$110,922	-	-	-
Business Energy Analysis	$760,350	-	-	-	$358,333	-	-	-
Consumer Education	$899,908	-	-	-	$784,777	-	-	-
Energy Benchmarking	$94,407	-	-	-	$54,890	-	-	-
Energy Efficiency Financing	$60,000	-	-	-	$14,048	-	-	-
ENERGY STAR Retail Products Platform Pilot	$509,271	-	-	-	$188,901	-	-	-
Home Energy Audit	$444,675	-	-	-	$347,818	-	-	-
Partners in Energy	$799,000	-	-	-	$365,679	-	-	-
Education/Market Transformation Total	**$3,744,350**	**-**	**-**	**-**	**$2,225,369**	**-**	**-**	**-**
Planning and Research								
EE Market Research	$350,791	-	-	-	$135,502	-	-	-
EE Measurement & Verification	$12,000	-	-	-	$7,848	-	-	-
EE Planning & Administration	$522,162	-	-	-	$274,188	-	-	-
EE Program Evaluations	$404,005	-	-	-	$492,641	-	-	-
EE Product Development	$1,840,082	-	-	-	$1,268,518	-	-	-
Geo-targeting Pilot - EE	$14,116	-	-	-	$1,587	-	-	-
EE Product Development Total	**$1,854,198**	**-**	**-**	**-**	**$1,270,104**	**-**	**-**	**-**
EE Planning and Research Total	**$3,143,157**	**-**	**-**	**-**	**$2,180,283**	**-**	**-**	**-**
EE Indirect Products & Services Total	**$6,887,507**	**-**	**-**	**-**	**$4,405,652**	**-**	**-**	**-**

Natural Gas

A summary of the Company's Indirect Program achievements for natural gas DSM products and services is shown in Table 18b below.

Table 18b: Indirect Program – Natural Gas DSM Products (Budget to Actual)

	Budgets / Targets					Expenditures / Achievements				
Indirect Products & Services - 2019	Gas Budget	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio	Gas Expenditures	Net Annual Dth Savings	Annual Dth/$M	Gas MTRC Test Net Benefits	Gas MTRC Test Ratio
Education/Market Transformation										
Business Education	$19,638	-	-	-	-	$15,645	-	-	-	-
Business Energy Analysis	$71,774	-	-	-	-	$41,001	-	-	-	-
Consumer Education	$133,323	-	-	-	-	$92,545	-	-	-	-
Energy Benchmarking	$32,745	-	-	-	-	$15,693	-	-	-	-
Energy Efficiency Financing	$60,000	-	-	-	-	$14,307	-	-	-	-
ENERGY STAR Retail Products Platform Pilot	$18,147	-	-	-	-	-$2,579	-	-	-	-
Home Energy Audit	$553,216	-	-	-	-	$459,911	-	-	-	-
Partners in Energy	$44,500	-	-	-	-	$48,147	-	-	-	-
Education/Market Transformation Total	**$933,344**	**-**	**-**	**-**	**-**	**$684,671**	**-**	**-**	**-**	**-**
Planning and Research										
DSM Planning & Administration	$110,161	-	-	-	-	$54,473	-	-	-	-
Program Evaluations	$3,609	-	-	-	-	$641	-	-	-	-
Market Research	$89,408	-	-	-	-	$59,817	-	-	-	-
Measurement & Verification	$161,350	-	-	-	-	$128,897	-	-	-	-
Product Development	$170,031	-	-	-	-	$75,984	-	-	-	-
Geo-targeting Pilot - EE	$0	-	-	-	-	$0	-	-	-	-
Product Development Total	$170,031	**-**	**-**	**-**	**-**	**$75,984**	**-**	**-**	**-**	**-**
Planning and Research Total	$534,557	**-**	**-**	**-**	**-**	**$319,812**	**-**	**-**	**-**	**-**
Indirect Products & Services Total	$1,467,901	**-**	**-**	**-**	**-**	**$1,004,483**	**-**	**-**	**-**	**-**

The Indirect Program budget consists primarily of labor, educational materials, and study costs. Most studies are conducted by outside experts, generally selected through a competitive bid.

Education / Market Transformation Products

The following provides a brief summary of the performance of each education / market transformation product in 2019.

Business Education

The Business Education product creates awareness of energy conservation by providing business customers with information and resources to reduce their business' energy use. The Company provides customers with opportunities to actively engage in energy efficiency through offering product information at event sponsorships and other onsite outreach, customer feedback surveys, and social media channels such as Facebook and Twitter. The Company also uses traditional outreach channels like seasonal print and bill inserts as an integral part of the overall education and outreach strategy.

2019 Product Achievement

The Company exceeded the electric and natural gas participation targets for this product while staying on budget achieving approximately 114 percent of the year-end participation target. The Company conducted 19 community-based events, attended by approximately 14,230 people that generated 279 customer leads at a cost of $66,420. Continued long-term partnerships with community-based organizations contributed to increased participation without additional expenditures. Community partners offered additional outreach opportunities as a result of mutually beneficial, longstanding relationships. To continuously improve DSM participation, the team began exploring ways to increase awareness and participation. Minor changes were made this past year to evolve the event experience by

incorporating digital/interactive components to educate customers and targeting high impact events with bigger crowds. The combination of these initiatives continues to support DSM achievements.

Business Energy Analysis

Business Energy Analysis is an indirect impact product that offers analysis services to identify energy saving opportunities for Colorado business customers. The product includes two different types of assessments: on-site audits, and engineering assistance studies. The reports in these assessments provide varying levels of detailed information about cost and paybacks, which support the business case for the customer to make energy-efficiency upgrades.

2019 Product Achievement

While the product did not meet its target of 316 electric participants, the offering did identify over 12 GWh of energy conservation opportunities. Marketing efforts included e-mail campaigns and outreach from the Business Solutions Center. A new product implementer began facilitating the product and worked to build up a strong pipeline for 2020. Electric and natural gas expenditures were less than the filed budget.

Consumer Education

The Consumer Education product creates awareness of energy conservation by providing residential customers with information and resources to reduce their homes' energy use. The Company provides customers with opportunities to actively engage in energy efficiency through offering product registration at community outreach events, customer feedback surveys, follow-up emails, digital kiosks, and social media channels such as Facebook and Twitter. The Company also uses traditional outreach channels like seasonal print and bill inserts as an integral part of the overall education and outreach strategy.

2019 Product Achievement

The Company exceeded the electric and natural gas participation targets for this product while staying within the approved budgets achieving approximately 174 percent of the year-end participation target. The Company conducted 104 community-based events, attended by approximately 1.75 million people that generated 6,810 customer leads and 765 signups at a cost of $685,357. While the product followed tactics outlined in the 2019/2020 DSM Plan, factors that contributed to increased participation without additional expenditure included: value-added outreach from continued long-term partnerships with community-based organizations, and increased tracking and reporting from those partnerships. Community-based partners continued to offer additional outreach opportunities at no charge as a result of mutually beneficial, longstanding relationships. To continuously improve DSM participation, the team began exploring ways to increase awareness and participation. Minor changes were made this past year to evolve the event experience by incorporating digital/interactive components to educate customers and targeting high impact events with bigger crowds. The combination of these initiatives continues to drive participation in DSM products.

Energy Benchmarking

The Benchmarking service is a free data aggregation and upload product provided to the Company's electric and natural gas customers seeking to track whole building data. The service allows building owners to receive monthly whole-building energy consumption data for their buildings without violating customer privacy. Once the service is implemented, it continues to upload data automatically to the Environmental Protection Agency's online tool, Energy Star Portfolio Manager.

The product is marketed to larger building customers with multiple premises on their property. It primarily targets customers in those cities with a benchmarking ordinance who are required to report whole building energy consumption data to the cities.

2019 Product Achievement
Participation is greater than expected and spending is in line with expectations. Communities in Colorado have continued to add and expand their benchmarking ordnances. Due to the higher than expected participation, Xcel Energy is investing in the software package to procure a faster and more robust system as well as provide a better customer experience.

Energy Efficiency Financing
Energy Efficiency Financing is an indirect impact product, connecting residential and business customers with third-party lending institutions to encourage the use of financing, where needed, for implementation of DSM projects. The Company has established formal alliances with several financial institutions and local programs that provide customers with easy access to the funds they need to be able to improve energy performance. All loans are made directly from third-party lenders to customers.

2019 Product Achievement
A new online commercial finance portal was introduced in 2019 to help streamline the proposal process and facilitate loans for business customers, while a new third-party ally began helping the Company reach residential customers across its service territory. In accordance with the 2019/2020 DSM Plan Settlement Agreement, the Company also updated its websites for Energy Efficiency Financing, Home Performance with Energy Start, and other applicable products to include information on additional financing opportunities. These efforts will help to increase awareness of the product and improve trade partner participation. The Company will continue to strategically promote the financing product through its trade partner network including webinars, workshops, on-site trade partner trainings, business and residential marketing communications, sponsorships, and events.

ENERGY STAR® Retail Products Platform Pilot
The ENERGY STAR® Retail Products Platform Pilot is intended to test a national-level mid-stream incentive approach to driving transformation of the appliance and consumer electronics market. The Pilot is part of an effort coordinated by the U.S. Environmental Protection Agency to evaluate whether incentivizing retailers for efficient product sales can drive increased market penetration of ENERGY STAR® products. The Pilot launched in 2016 and included participating utilities and energy efficiency product implementers from California, the Pacific Northwest, New York, Vermont, Wisconsin, Hawaii and New Jersey. Since its launch, the product offering has been adjusted to include Clothes Washers and Refrigerators as well as basic and advanced tiers for most products to improve the cost-effectiveness of the pilot.

2019 Product Achievement
Despite meeting savings and participation targets in previous years, ongoing struggles to make the product cost effective and market transformative proved unsuccessful.

Changes in 2019
The Company terminated ENERGY STAR® Retail Products Platform via 90-Day Notice in 2019.

Home Energy Audit

The Home Energy Audit product provides rebates to the Company's natural gas and/or electric customers who receive an in-home energy audit. Considered a gateway to other residential products, Home Energy Audit is designed to encourage customers to understand their home's energy usage which can lead to improvements in energy savings in residential homes. An Energy Advising component has been incorporated as a value-added service to customers who are unsure of which next steps to take to achieve their energy goals. There are three types of in-home audit rebates offered through this product that can earn the customer a rebate: (1) standard audit; (2) standard audit with blower door test; or (3) infrared audit which includes the standard audit and the blower door test.

Throughout the year, the Company promoted the Home Energy Audit product through marketing efforts such as bill onserts, digital ads, and bundling with other products such as Home Energy Squad and Insulation.

2019 Product Achievement

The Home Energy Audit product did not achieve its participation targets for the year. The Company continued to offer audits in combination with a Home Energy Squad visit in an effort to increase participation and lead customers to take additional action. Feedback from customers continues to be very positive, and the Company will continue to develop these combined visits in order to improve the customer experience and encourage participation in other DSM products.

Partners in Energy

Partners in Energy is an indirect product offering community leaders and stakeholders the opportunity to jointly develop and implement energy conservation goals and action plans for municipal, commercial & industrial facilities and homes within the community's boundaries, track energy efficiency product participation and related activities. The Company works with a third-party implementation partner to provide tools and resources to enable community-driven energy planning increase participation in energy efficiency. In parallel, communities can incorporate demand management, solar and renewables, electric vehicles and other carbon-reduction efforts into their plans but the cost is not charged to individual DSM products.

Partners in Energy staff team up with community workgroups to develop an individualized plan to engage commercial and residential customers in energy efficiency activities, and help identify project funding via rebates, financing and other sources.

2019 Product Achievement

The product worked with fourteen Colorado communities through their implementation phase and commenced the 6-month planning phase with four new communities in 2019. Approximately half of the product's budget was spent due to the July 1, 2019, implementation date for the 2019/2020 DSM Plan.

Planning & Research Products

The following provides a brief summary of the performance of each Energy Efficiency planning and research product in 2019.

EE Planning & Administration

DSM Planning & Administration is an indirect product with internal staff that manages all energy efficiency-related filings, including the annual DSM Status Report, DSM Plans and Notices, and

Strategic Issues proceedings. This group performs cost-benefit analyses of all the energy efficiency and demand response products, provides tracking of the energy and demand savings, and collaborates with the Company's Resource Planning group to develop inputs for the resource plans. DSM Planning & Administration conducts all planning and implementation of the quarterly DSM Roundtable Meetings and associated filings; and provides management oversight of all evaluation, measurement and verification planning and policies. These staff members work with outside consultants and stakeholders as needed throughout the year. These functions are necessary to ensure a cohesive and high-quality DSM portfolio that meets all legal requirements as well as the expectations of internal and external customers and the Commission.

2019 Product Achievement
New in the 2019/2020 DSM Plan, the DSM Planning & Administration budget was split between the Energy Efficiency and Demand Response Programs to more accurately track costs associated with each Program. In 2019, the Company's EE Planning & Administration expenditures for electric and gas were both under budget for the year without a Strategic Issues proceeding or DSM Plan filing.

DSM Market Research
The Company conducts surveys and studies throughout the year to gauge energy awareness and customer interest around DSM. Internal market research functions are needed to provide overall support for clarifying DSM issues and thoroughly understanding current and potential DSM customers. In 2019, the Company conducted the following general research and analytical services:

- Residential and Business Media Effectiveness Tracking;
- Dun & Bradstreet Business list refresh for Salesforce market segmentation;
- CAMEO Residential list for Salesforce market segmentation;
- E Source Consultative Services;
- DSM decision-making research; and
- Small/Midsize Business end use study.

Market research is used internally by the Company as a resource for planning marketing activities and initiating efforts to reduce the number of non-participants.

2019 Product Achievement
The Market Research expenditures were under budget for both electric and natural gas expenditures.

EE Product Evaluations
The Company procures third-party comprehensive evaluations, including impact and/or process evaluations, of products in the DSM Portfolio. The evaluations identify product strengths as well as opportunities for improvement and enable comparison with industry best practices. In 2019, a process-only evaluation was conducted for Heating Efficiency and Single-Family Weatherization. In addition, Motor & Drive Efficiency was subject to an impact and process evaluation. A review of Xcel Energy lighting baseline practices was also conducted in late 2019. Finally, follow up research recommended in the Lighting Efficiency evaluation that concluded in 2018 was completed in 2019.

High-level outcomes from these evaluations include:

- *Heating Efficiency (Business):* Customers are generally satisfied with the product. The greatest challenge is unfamiliarity of the product and qualifying equipment among trade partners.

- *Single-Family Weatherization (Low-Income Residential)*: The evaluation of Single-Family Weatherization focused on ways to increase engagement with hard-to-reach populations. Key actions for the product include provide clearer communication for the product contact (a challenge in multi-agency projects) and improving trust through word-of-mouth promotion supported by more diverse product materials.
- *Motor & Drive Efficiency (Business):* The updated net-to-gross analysis indicated that the product remains impactful on customers' decisions to implement energy efficiency products. Product satisfaction with the process are high, with the digital application showing significant support among those who use it.
- *Lighting Efficiency (Business):* The 2019 Lighting Efficiency research revised the net-to-gross to offer a prospective value based on more robust trade partner outreach and improved questions around customer and vendor estimates of the size of lighting projects that would occur in the absence of the product.
- *Lighting Baseline Review (Business & Residential):* The evaluation team's review of Xcel Energy's engineering practices for determining the baseline for lighting measures confirmed alignment with industry practices and minimal changes were suggested.

Evaluation reports are found on the Company's website, here:
http://www.xcelenergy.com/Company/Rates_&_Regulations/Filings/Colorado_Demand-Side_Management

2019 Product Achievement
Program Evaluations exceeded the electric budget in 2019 due to the addition of the Lighting Efficiency follow-up research. The gas budget was not exceeded.

Measurement and Verification
Measurement and verification activities ensure that all direct electric and natural gas DSM savings are properly calculated in the system of record (Salesforce) and accurately reported for compliance purposes, on a quarterly and annual basis. This M&V ensures that technical assumptions, NTG ratios, and realization rates used in energy savings calculations are as accurate as possible. The expenditures associated with M&V, as reported in the Executive Summary of this report, include only the internal labor to manage the overall M&V process. M&V expenses from third-party verification contractors are charged directly to individual products supported.

The intensity of third-party M&V methods is balanced with the costs of the M&V approaches, being mindful of the objectives to ensure accurate savings while keeping expenditures prudent and maintaining the cost-effectiveness of the products. Product savings are validated through a multi-step process designed to ensure that rebates are correctly processed, rebated measures were installed, and equipment is performing as intended. The M&V activities also provide opportunities to evaluate customer satisfaction and identify strategies for improving product delivery and effectiveness. Results of M&V analyses are reported in the section of this Report labeled "Evaluation, Measurement, and Verification Results.

EE Product Development
The product development process starts with ideas and concepts from customers, regulators, energy professionals, interest groups, and Company staff. The Company's Product Development team identifies, assesses, and develops new energy efficiency products, services, and measures for the Company. This work enables the Company to identify and promote promising new EE products,

measures, delivery mechanisms, and other opportunities for its customers. New in 2019, the Product Development budget was split between the EE and DR Programs.

In 2019, the Company introduced new EE products or measures via 60-Day Notices, managed ongoing pilots, and worked to develop new products and measures that may be introduced via a 60-Day notice in 2020. A summary of these activities in 2019 follows:

- Motor and Drive Efficiency – added clean water pumps measure in 2019
- Insulation and Air Sealing – added cellular shades measure in 2019

2019 Product Achievement
EE Product Development expenditures were under budget due to lower-than-anticipated costs for research and consulting services.

Geo-targeting Pilot - EE
The objective of the Company's Geo-Targeting pilot is to demonstrate that the targeted deployment of DSM resources can defer the need for investment in a new distribution transformer and associated feeder upgrades. To accomplish this, the Company will show how its traditional DSM and DR resources can be adapted to address localized system constraints through achievement of high levels of local adoption, coordination and dispatching of demand response and validation of cost effectiveness.

2019 Product Achievement
The pilot engaged the Company's distribution operations team to introduce how DSM products can be utilized to manage grid operations and residential new construction builders and developers. No achievement was realized in 2019.

Changes in 2019
There were no changes to this pilot.

Demand Response Program

Demand Response provides utilities with a valuable tool for managing peak demand on the electric system. The Company offered three types of DR products in 2019: (1) Direct Load Control, (2) Interruptible DR, and (3) Non-Dispatchable DR.[19] The Company's DR Program includes participation opportunities for business and residential customers on a Public Service firm demand rate for electric service. DR results for 2019 are shown in Table 19 below.

New in the 2019/2020 DSM Plan, the Company began to offer three internal services for the Demand Response Program: DR Planning and Administration, DR Program Evaluations, and DR Product Development. In 2019, the Company operated two DR pilots: Critical Peak Pricing Pilot and Geo-targeting Pilot. It also conducted RFPs and engaged in contracting negotiations for the Charging Perks Pilot and Residential Battery Demand Response Pilot which are both anticipated to launch in 2020.

Table 19: 2019 DR Results (MW)

	Goal[20]	**Actual**
Demand Response (DR)	465	450
Demand Reduction from Energy Efficiency (EE-DR)	75	94
Total	**540**	**544**

Ordering Paragraph 86 of Decision No. C18-0417 directed the Company to achieve total demand reduction goals of 540 MW in 2019. The Company's Demand Response program underachieved its forecasts and goals in 2019. The shortfall was due to underperformance across its suite of products and the slower than anticipated growth of the Company's new DR products: Peak Partner Rewards, Critical Peak Pricing, and AC Rewards. The elimination of the 1-Hour ISOC product in 2019 also removed over 40 MW of DR capacity from the portfolio. The Company has converted a portion of that capacity into other DR products and will continue targeting the former 1-Hour ISOC participants for future portfolio growth. All are expected to increase available load in the future.

[19] 2015/16 DSM Plan at 312. (Proceeding No. 14A-1057EG).

[20] *See* Decision No. C18-0417, at ¶ 86 (Proceeding No. 17A-0462EG). Includes 75 MW from Energy Efficiency Demand Reduction as affirmed in the Non-Unanimous Comprehensive Settlement Agreement, at Section III(A)(9).

Table 20: Demand Response Program – Electric DSM products (Budget to Actual)

	Budgets / Targets				Expenditures / Achievements			
Demand Response Program - 2019	Electric Budget	Net Gen. kW	Net Gen. kWh	Electric MTRC Test Ratio	Electric Expenditures	Net Gen. kW	Net Gen. kWh	Electric MTRC Test Ratio
Critical Peak Pricing Pilot	$58,400	5,588	-	-	$112,677	11,175	-	-
Geo-targeting Pilot - DR	$78,189	-	-	12.37	$0	-	-	-
Peak Partner Rewards	$1,725,420	12,000	-	-	$656,411	24,000	-	-
Residential Battery Demand Response	$323,500	389	(16,752)	1.55	$0	-	-	-
Residential Demand Response	$13,133,000	14,517	53,834	1.83	$11,012,497	3,689	14,552	1.15
Charging Perks Pilot	N/A	N/A	N/A	N/A	$0	-	-	-
DR Program Total	**$15,318,509**	**32,494**	**37,082**	**1.75**	**$11,781,584**	**38,864**	**14,552**	**1.11**
Planning and Research								
DR Planning & Administration	$58,018	-	-	-	$8,547	-	-	-
DR Program Evaluations	$315,573	-	-	-	$214,274	-	-	-
DR Product Development	$1,384,082	-	-	-	$413,431	-	-	-
DR Planning and Research Total	**$1,757,673**	-	-	-	**$636,251**	-	-	-
								-
DR PORTFOLIO TOTAL	**$17,076,182**	**32,494**	**37,082**	**1.57**	**$12,417,836**	**38,864**	**14,552**	**1.05**

Demand Response Products

The following provides a brief summary of the performance of each Demand Response product in 2019.

Critical Peak Pricing Pilot

During periods of peak energy demand, such as hot summer days, the electric system may require more power than is typically available. The Critical Peak Pricing ("CPP") pilot provides participants a price signal to encourage them to reduce their electricity usage during these periods. Under the CPP rate participating customers receive a discounted demand charge but are subject to higher energy charges during CPP events. CPP events can occur up to 15 times a year during the hours of noon and eight P.M. on non-holiday weekdays and may be up to four hours in duration. Participating customers receive day-ahead notification of when "critical peak" days will occur.

To better manage their energy usage during peak events, participants are provided access to their electric load profile data in near-real-time. Access to this data not only allows participants to monitor their performance during events, but also provide insight into their energy use throughout the year.

The CPP pilot is marketed directly by the Company's account management staff and is available to commercial and industrial customers under rate schedules SG, PG or TG who have an existing interval meter.

2019 Product Achievement

Overall, event performance for 2019 pilot participants was positive. The pilot dispatched 8 control events for pilot participants. Preliminary results suggest demand reductions varied from event to event, which is typical performance for a critical peak product, but on average demand reductions were achieved. The pilot added two enrollments in 2019 and had one participant unenroll. In total, the pilot underachieved its target of 5,588 MW of incremental capacity. The Company plans to leverage the implementation service partner RFP to improve the pilot's participation in the future. The Pilot's spend was above the filed budget for 2019. This overspend was primarily due to costs associated with software development and labor costs to support and promote the pilot.

The Company will continue to evaluate the Pilot's results to understand customers' behavior and performance, participant experience, and how to better forecast the product's performance for future critical peak periods.

Changes in 2019
There were no changes to this product.

Geo-targeting Pilot - DR
The objective of the Company's Geo-Targeting pilot is to demonstrate that the targeted deployment of DSM resources can defer the need for investment in a new distribution transformer and associated feeder upgrades. To accomplish this, the Company will show how its traditional DSM and DR resources can be adapted to address localized system constraints through achievement of high levels of local adoption, coordination and dispatching of demand response and validation of cost effectiveness.

2019 Product Achievement
The pilot engaged the Company's distribution operations team to introduce how DSM products can be utilized to manage grid operations and residential new construction builders and developers. No achievement was realized in 2019.

Changes in 2019
There were no changes to this pilot.

Interruptible Service Option Credit
The Interruptible Service Option Credit ("ISOC") product offers savings opportunities for business customers on the ISOC Tariff[21] that can reduce their electric demand when notified. In return for participating, customers receive a monthly credit based on the program options they signed up for. Participating customers must have a Contract Interruptible Load ("CIL") of 300 kW or more.

2019 Product Achievement
Total costs for the product were $25,195,649. Additional information on the ISOC product is available through the Company's ISOC Annual Status Report filed in Proceeding No. 07S-521E.

Changes in 2019
The Company updated the ISOC tariff[22] effective January 1, 2019, that resulted in changes to the product. The One-Hour ISOC product option was discontinued effective 2019. All current ISOC participants are considered Within Ten-Minute notice customers. The tariff changes also reduced monthly credits for new ISOC participants enrolling in the product effective January 1, 2019.

Peak Partner Rewards
During periods of peak energy demand, such as hot summer days, the electric system may require more power than is typically available. Customers who participate in the Peak Partner Rewards product agree to reduce their electricity use at the Company's request during these periods. The Peak Partner Rewards product is available to all business customers that agree to reduce usage during the summer months,

[21] Advice Letter No. 1524 (Second Amended); Electric Tariff Sheet No. 90.
[22] Advice Letter No. 1524 (Second Amended); Electric Tariff Sheet No. 90.

June through September, between the hours of 2 P.M. and 6 P.M. by a minimum of 25 kilowatts ("kW").

2019 Product Achievement
In 2019, the Peak Partner Rewards product underachieved its target of 12 MW incremental capacity but also underspent its budget of $1,725,420. The Company continued the RFP effort to acquire an implementation service partner and expects this partner to be actively marketing the product in 2020 to supplement the Company's marketing and administration of the product, as well as increase the successful transition rate of previous Third-Party Demand Response participants.

Changes in 2019
There were no changes to this product.

Residential Battery Demand Response
The Residential Battery Demand Response pilot is focused on testing the ability of a customer's home battery to provide several types of demand response services, including peak load reduction, solar time shifting, and controlled charging.

2019 Product Achievement
The pilot did not launch in 2019 and did not generate any savings. The pilot will be one of several pilots around the country that allow the customer to utilize their own battery to participate in a utility-managed demand response program. The pilot team has completed an RFP to identify one or more vendors capable of controlling residential batteries based on the Company's demand response commands. The RFP attracted four responses, and the Company is currently in contract negotiations with two vendors. The Company expects to launch this pilot in the first half of 2020.

Changes in 2019
There were no changes to this product.

Residential Demand Response
The Company has two residential demand response offerings:

- Saver's Switch® is a demand response product that offers residential customers with central AC an annual rebate on their bill in exchange for allowing the Company to control their AC during times of peak demand.
- AC Rewards is a demand response product that uses smart communicating thermostats for reducing AC load during a control event. Participating customers receive incentives for enrolling eligible thermostats in AC Rewards. They also receive annual bill credits for their participation. Unlike Saver's Switch®, participants have the ability to opt out of a control event.

2019 Product Achievement
The Saver's Switch® offering has been in existence since 2000 and has approximately 193,000 active participants. The company projects the current participants account for approximately 50 percent of the eligible (single family homes with central AC) population. In an effort to minimize confusion in the market place, marketing Saver's Switch took a back seat to AC Rewards beginning in 2018. The AC Rewards product had low participation in 2019, despite a substantial marketing campaign. Additional efforts to grow the AC Rewards program through more market segments are underway.

With the strong market place presence of Saver's Switch, approximately half of the new AC Rewards participants were previously on, and removed from, Saver's Switch. In 2019, the Company continued marketing AC Rewards and working with additional device manufacturers to add eligible thermostats to the lineup. During 2019 the AC Rewards had six events; one of the events was an ecobee-only test of the population. Saver Switch also called six events this year. Two of the AC Rewards and Saver Switch events were only for the Lakewood area as part of an ongoing geotargeting pilot to reduce load in rapidly growing areas.

Changes in 2019
There were no changes to this product.

Planning & Research Products

The following provides a brief summary of the performance of each Demand Response planning and research product in 2019.

DR Planning & Administration

DSM Planning & Administration is an indirect product with internal staff that manages all demand response-related filings, including the annual DSM Status Report, DSM Plans and Notices, and Strategic Issues proceedings. This group performs cost-benefit analyses of all the energy efficiency and demand response products, provides tracking of the energy and demand savings, and collaborates with the Company's Resource Planning group to develop inputs for the resource plans. DSM Planning & Administration conducts all planning and implementation of the quarterly DSM Roundtable Meetings and associated filings; and provides management oversight of all evaluation, measurement and verification planning and policies. These staff members work with outside consultants and stakeholders as needed throughout the year. These functions are necessary to ensure a cohesive and high-quality DSM portfolio that meets all legal requirements as well as the expectations of internal and external customers and the Colorado PUC.

2019 Product Achievement
New in the 2019/2020 DSM Plan, the DSM Planning & Administration budget was split between the Energy Efficiency and Demand Response Programs to more accurately track costs associated with each Program. In 2019, the Company's DR Planning & Administration expenditures for electric was under budget for the year without a Strategic Issues proceeding or DSM Plan filing.

DR Product Evaluations

The Company procures third-party comprehensive evaluations, including impact and/or process evaluations, of products in the DSM Portfolio. The evaluations identify product strengths as well as opportunities for improvement and enable comparison with industry best practices. New in 2019, the Company conducted an RFP to select an evaluator that will focus on demand response products in the 2019/2020 DSM Plan. This is in addition to the energy efficiency product evaluations that were described in the Indirect Program section of this report. In 2019, evaluations of Peak Partner Rewards and Saver's Switch were conducted. Due to timing of the demand response control season, the evaluations are not yet finalized. The Company will report on the findings from this research at future DSM Roundtable meetings and in the 2020 Status Report.

When complete, evaluation reports will be found on the Company's website, here:
http://www.xcelenergy.com/Company/Rates_&_Regulations/Filings/Colorado_Demand-Side_Management

2019 Product Achievement
Program Evaluations ended the year under budget.

DR Product Development
The product development process starts with ideas and concepts from customers, regulators, energy professionals, interest groups, and Company staff. The Company's Product Development team identifies, assesses, and develops new load management products, services, and measures for the Company. This work enables the Company to identify and promote promising new products, measures, delivery mechanisms, and other opportunities for its customers. The DR product development budget was new in 2019.

In 2019, the Company introduced new DR products or pilots via 60-Day Notices, managed ongoing pilots, and worked to develop new products that may be introduced via a 60-Day notice in 2020. A summary of these activities in 2019 follows:

- Charging Perks
- Electric Vehicle Critical Peak Pricing
- Peak Day Partners

2019 Product Achievement
DR Product Development expenditures were under budget in 2019 largely due to the fact that this budget became available in July.

Charging Perks Pilot
The Charging Perks pilot is a collaboration between Xcel Energy and four automakers to test electric vehicle ("EV") smart charging technologies. The pilot will involve each of the automakers accepting a demand management signal from Xcel Energy, and, in turn, creating a customized charging schedule for each enrolled customer that is sent directly to their vehicle. The schedule will shift a customer's home EV charging into hours of the day that are beneficial for the power grid, while still meeting the customer's charging requirements.

2019 Product Achievement
The pilot did not launch in 2019 and did not generate any savings. The pilot will be the first project in the country to test how a utility can interact with a single smart charging platform that integrates with multiple automakers. Due to the novelty of the pilot and the contracting challenges associated with contracting with four automakers, the pilot launch will not occur until 2020. One benefit of a delayed launch is that it will give the pilot a better chance of enrolling EVs that are coming to market in mid-to-late 2020. Some of these vehicles have a longer range than present battery electric vehicles and plug-in hybrid electric vehicles on the market. Customers may drive and charge these longer-range models differently, and the pilot will be able to collect more data from newer models that will better reflect the future demands that EVs will place on the power grid.

Changes in 2019
There were no changes to this pilot.

Electric Vehicle Critical Peak Pricing Pilot

The Electric Vehicle Critical Peak Pricing ("EV-CPP") Pilot operationalizes a tariff rate introduced by the Company as Secondary Voltage Time-of-Use Electrical Vehicles Service ("S-EV") through Advice Letter No. 1798 to the Public Utilities Commission on May 24, 2019. The Company developed the S-EV rate to help business customers manage the potential costs associated with charging fleet EVs. A component of this rate includes CPP charges to strongly encourage customers to reduce their usage during periods when forecasts indicate the electric grid will experience high system loads as a percentage of available generation capacity.

2019 Product Achievement

The Company issued a 60-Day Notice for the Pilot in December 2019; however, the Pilot did not launch until 2020 and did not generate any savings in 2019.

Changes in 2019

There were no changes to this pilot.

Peak Day Partners Pilot

The Peak Day Partners ("PDP") Pilot provides the Company with an additional power purchase resource to more efficiently manage system requirements during periods of high demand, as well as provide customers with the option of receiving pricing associated with energy supply markets during such periods. The PDP Pilot offers commercial and industrial customers a bid for a level of demand they are willing to reduce, typically during the summer months of June through September on very hot afternoons. The Company will send offers to participating customers for a specific load reduction amount at a given price and a specific date and time. Customers will have the option to accept, decline, or provide a counteroffer. If accepted, the Customer will be responsible for manually meeting this accepted demand reduction during the specified hours. This is a voluntarily participation pilot and there is no penalty for non-participation.

2019 Product Achievement

The Company issued a 60-Day Notice for the Pilot in December 2019; however, the Pilot did not launch until 2020 and did not generate any savings in 2019.

Changes in 2019

There were no changes to this pilot.

Evaluation, Measurement, and Verification: 2019 Results

Background

An Evaluation, Measurement, and Verification ("EM&V") Plan is necessary to help ensure that Public Service's DSM programs are delivering reliable energy and demand savings and to improve overall program design and operation. Public Service developed its EM&V Plan to evaluate, measure, and verify savings for gas and electric DSM products during and after each performance year, in order to confirm that savings and technical assumptions are accurate. The robustness of any EM&V Plan must be balanced against the cost of performing EM&V, keeping in mind the objectives of ensuring accurate savings calculations while keeping expenditures prudent and maintaining the cost-effectiveness of programs.

Description of Process

Public Service uses a variety of providers to conduct its measurement and verification activities. In 2019, measurement and verification for the majority of direct-impact prescriptive products was conducted by a verification contractor (Nexant). For other products, such as ENERGY STAR New Homes, Home Performance with ENERGY STAR, and New Construction, the third-party product implementer verified all of the installations to ensure that reported gross savings were accurate. Custom projects were verified through internal engineering reviews, as described below.

The Company's EM&V approach includes both performance year and post-performance year activities. Performance year activities are conducted on an ongoing basis during the reporting year and include rebate application validation and ongoing M&V. Post-performance year activities occur in the year following the reporting year and include all comprehensive product (process and impact) evaluations. Each of these EM&V activities is described in more detail below.

Performance Year EM&V Activities

- **Rebate Application Validation** takes place on a daily basis during the program year and involves auditing all rebate applications received by the Company. The Company's Rebate Operations Department has a two-step process (described in the EM&V section of the 2017/18 and 2019/20 DSM Plans). The first step entails validating every application for accuracy and completeness as it is received prior to processing. In the second step, all rebates that have been entered into a tracking system are audited each day prior to issuing a rebate. The objective of this validation is to ensure that the rebate forms and the reported gross savings that are entered into the Company's databases are as accurate as possible and that customers are receiving the correct rebates.
- **Ongoing Measurement and Verification** is conducted with the primary objective of ensuring that the gross energy and demand savings reported by the Company are accurate. Ongoing M&V takes place during and just after the performance year. Ongoing measurement and verification of savings differs for prescriptive, custom, load management, and pilot products. For direct impact prescriptive products, Public Service contracts with third-party verification contractors and product implementers to perform M&V. Custom projects are verified through either engineering reviews of savings or through pre- and post-metering, depending on the size of the savings. The following sections describe the general M&V methods that have been used for prescriptive, custom, load management, and pilot products.
    - For Prescriptive products, the verification activities follow a Deemed Savings approach, where the primary goal is to conduct field inspections for a sample of projects to determine

that the measures are properly installed and have the potential to generate savings. The contractor selects a statistically valid number of projects to verify through field inspections or phone surveys. The sample size is designed to achieve accuracy levels of between 10% and 20% given a confidence level of 90% around the "realization rate" and is weighted to select larger projects. Inspection parameters gathered onsite will vary based on the product and sector but will generally confirm that the installed equipment matches equipment listed on rebate application. If they don't match, the product's reported savings are adjusted using the realization rate which reflects the actual results of these inspection.

- For Custom products, the M&V process depends on the size and scope of the project. Each project is typically pre-approved through an engineering analysis performed by one of the Company's internal energy efficiency engineers. Within the initial engineering analysis, the expected project savings and payback are calculated using technical assumptions that fit the specific measure(s) being implemented. Depending on the size of the project, these calculations are then reviewed by a second internal energy efficiency engineer and/or manager and a random sampling is sent for third-party review. After installation of the efficiency measure, an internal engineer reviews the efficiency measure invoices to determine if the project savings remained within ± 10% of its original scope. If the project did not remain within scope, then the project is re-analyzed. For projects with savings greater than or equal to 1 GWh and/or 20,000 Dth, pre- and post-installation metering is performed for a minimum of two weeks to measure and verify savings. For all metered projects, the analysis of the metering data is conducted by one of the Company's internal energy efficiency engineers, and then reviewed by a team of internal engineers and a manager. For all custom projects, installation and realization rates of 100% are applied and a net-to-gross of 87% is used.

- For direct impact Pilot products, the M&V treatment depends on the measures or services being tested. Often, additional testing beyond that performed for prescriptive or custom products is required. Typically, a control group is established and then a third-party contractor compares the results from the test group to those in the control group.

Post-Performance Year EM&V Activities

- **Comprehensive Product Process and Impact Evaluations** are conducted periodically for individual products to assess their overall effectiveness and to determine what improvements or other changes should be implemented in the future. The objectives of the process evaluation include: determining customer satisfaction with the product; identifying the populations that participate in the product and target markets that are potentially receptive, but do not currently participate in the product; identifying areas where the product, processes, or marketing could be improved; quantifying the product's market saturation levels; suggesting appropriate rebate design; and determining attribution factors, such as free-ridership and spillover. The objectives of the impact evaluation include estimating net product impacts. These evaluations do not verify the savings of a specific performance year and are not applied retrospectively to performance year activities. Comprehensive evaluations are not conducted on every product each year, but instead are staggered over several years in order to comprehensively evaluate most of the portfolio of products.

Outline of Requirements

The Commission has provided overarching guidance on the requirements for Public Service's EM&V activities in Rule 4755.

4755. Measurement and Verification.

(a) Each utility shall implement a measurement and verification (M&V) program to evaluate the actual performance of its DSM program. The utility shall present its M&V plan as a part of its DSM plan application, pursuant to rule 4753, and shall include the complete M&V evaluation results with its annual DSM report in those years when the M&V is conducted.

(b) As a part of its M&V process, the utility shall, at a minimum, design an M&V plan to evaluate the effectiveness of the actual DSM measures and programs implemented by the utility. The M&V plan shall address: sampling bias; a data gathering process sufficient to yield statistically significant results; and generally accepted methods of data analysis. The M&V plan shall also include an evaluation of free ridership, spillover, and the net-to-gross ratio. The M&V evaluation shall be implemented at least once per DSM plan period. Subsequent DSM plan applications shall reflect the results of all completed M&V evaluations.

(c) The M&V evaluation shall, at a minimum, include the following:

(I) An assessment of whether the DSM programs have been implemented as set forth in its Commission approved DSM plan;

(II) A measurement of the actual energy savings for each DSM program, in dekatherms per dollar expended and in total dollars, and a comparison to the corresponding utility projections in the approved DSM plan;

(III) To the extent feasible, an assessment of the period of time that each DSM measure remains in service, and a comparison to the corresponding utility projections in the approved DSM plan;

(IV) A summary of the actual benefit/cost ratio for each DSM program within the approved DSM plan;

(V) An assessment of the extent to which education and market transformation efforts are achieving the desired results; and

(VI) Recommendations for how the utility can improve the market penetration and cost effectiveness of individual DSM programs.

In compliance with these requirements, Public Service has applied the following concepts to its EM&V Plan:

- The ongoing M&V Plan will be conducted annually for all products. Comprehensive evaluations will be conducted on a staggered schedule over several years.
- The ongoing M&V Plan results will be reported with each annual DSM Status Report.
- For products that use a sampling methodology for M&V, the Plan will address sampling bias and all samples will be designed to yield statistically significant results.
- For products that are selected for a comprehensive evaluation, an evaluation of free ridership, spillover, and the net-to-gross ratio will be included as a study objective.
- Subsequent DSM Plan applications shall reflect the results of ongoing M&V, results of completed comprehensive evaluations, and results of any other DSM studies that are reviewed.
- The annual M&V evaluation report will include an assessment of whether the DSM products have been implemented as set forth in the Commission-approved Plan.

M&V Assessment Year & Technical Assumptions

Beginning in 2016, the Company used the November 1, 2015 – October 31, 2016 time period to collect the M&V data utilized in the DSM Annual Status Report. The Company continued this methodology in 2019 using the November 1, 2018 through October 31, 2019 M&V data collection time period for 2019 results and will continue to do so going forward.

For 2019, the product year is split into two distinct segments, and different technical assumptions are applied to each time period. For the achievements realized between January 1 and June 30, 2019, the 2017/18 DSM Plan technical assumptions, and subsequent 60-Day Notice changes, were applied to calculate net savings. For the achievements realized between July 1 and December 31, 2019, the 2019/20 DSM Plan technical assumptions, and subsequent 60-Day Notice changes, were applied to calculate net savings. All savings achieved in 2019 have the same realization and installation rates applied to them, resulting from M&V conducted for the 2019 M&V assessment period.

2019 M&V Results

The following paragraphs provide the M&V activities and results for each of the DSM products offered by the Company in 2019. All M&V activities followed the processes described above and outlined in the M&V Plan filed with the 2017/18 DSM Plan, unless noted below. Where sampling was used in the M&V process for prescriptive measures, the achieved precision and confidence level is provided.

Portfolio Results

With its best efforts, Public Service achieved portfolio realization rates of 99.9% for electric demand, 100.0% for electric energy, and 100.0% for natural gas energy in 2019. Applying the results to the portfolio's gross savings, the Company achieved 93,641 net generator kW, 504,141,862 net generator kWh, and 649,298 net Dth of DSM savings.

Business Products

Commercial Refrigeration Efficiency

The Commercial Refrigeration Efficiency product offers prescriptive and custom rebates, as well as direct installation of several refrigeration efficiency measures. M&V of the prescriptive component of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 37 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final electric demand and energy realization rates, as well as the gas realization rate for the 2019 Commercial Refrigeration Efficiency prescriptive measures were all 100.0% ± 0.0% around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Compressed Air Efficiency

The Compressed Air Efficiency product offers prescriptive, custom, and study rebates. M&V of the prescriptive component of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 8 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Compressed Air Efficiency prescriptive measures were all 100.0% ± 0.0% around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Cooling Efficiency

The Cooling Efficiency product offers prescriptive, custom, and study rebates. M&V of the prescriptive component of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 42 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Cooling Efficiency prescriptive measures were both 100.0% ± 0.0% around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Custom Efficiency

The Custom Efficiency product offers custom rebates. All Custom projects were reviewed by internal engineers following the custom protocols described above.

Data Center Efficiency

The Data Center Efficiency product offers rebates for study-driven and non-study-driven prescriptive and custom projects. The final aggregated demand and energy realization rates for the 2019 Data Center Efficiency prescriptive measures were both 100.0% ± 0.0%. All Custom measures were reviewed by internal engineers following the custom protocols described above.

Energy Management Systems

The Energy Management Systems product provides custom rebates. Measurement and verification of this product follows the custom protocols. All projects were reviewed by internal engineers following the custom protocols described above.

Heating Efficiency

The Heating Efficiency product provides prescriptive and custom rebates for efficient heating equipment. In 2019, M&V of the prescriptive component of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 37 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final realization rates for the 2019 Heating Efficiency prescriptive measures were 100.0% ± 0.0% for electric demand and energy, and 99.75% ± 0.2% for gas, around the targeted 90% confidence level. All Custom measures were reviewed by internal engineers following the custom protocols described above.

LED Street Lighting

The LED Street Lighting product captures energy savings for local municipalities on the Street Lighting Service (SL) Rate by replacing legacy Company-owned street lights with LED fixtures. In 2019, the program achieved savings of approximately 12 net GWh.

Lighting Efficiency

The Lighting Efficiency product offers prescriptive, custom, and study rebates. In 2019, M&V of the prescriptive component of the product were performed by Nexant, following the prescriptive protocols described above. Nexant performed 43 prescriptive field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Lighting Efficiency prescriptive measures were 100.0% ± 0.0%

around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Lighting - Small Business

The Lighting - Small Business product offers prescriptive, direct install, and custom rebates. In 2019, M&V of the prescriptive and midstream components of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 43 prescriptive field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Small Business Lighting prescriptive measures were 99.5% ± 0.4% around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Motor & Drive Efficiency

The Motor & Drive Efficiency product offers prescriptive and custom rebates. In 2019, M&V of the prescriptive component of the product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 37 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Motor & Drive Efficiency prescriptive measures were 99.7% ± 0.2% around the targeted 90% confidence level. Custom measures were reviewed by internal engineers following the custom protocols described above.

Multifamily Buildings

The Multifamily Buildings product offers the residential multifamily housing market energy assessments, direct-install of energy savings measures, and custom projects. The third-party implementer is responsible for the measurement and verification of the product. This product follows the Company's standard prescriptive product measurement and verification process.

New Construction

Public Service's New Construction product offers prescriptive Energy Efficient Buildings and custom Energy Design Assistance rebates. Measurement and verification are performed on all New Construction projects, whether prescriptive or custom. M&V for these projects was performed by Nexant. The Weidt Group and Group 14 conducted verification on these projects. All adopted measures received a visual verification. This information was used in our savings reports and for rebate payment. Since all project savings are calculated based on independent verification, this product has a realization rate of 100%.

Recommissioning

The Recommissioning product offers study and custom rebates. The measurement and verification of these projects was relatively simple because each implemented measure resulted from a previous Recommissioning study completed by an independent party. The customer hired an engineering firm to conduct a study of the building to determine energy savings for each measure; an internal engineer then reviewed and verified 100% of projects for savings calculation accuracy. In turn, each study was thoroughly reviewed and approved by a qualified Public Service engineer.

Self-Direct

The Self-Direct product offers custom rebates. The product was measured and verified using individualized customer-developed and Public-Service approved M&V Plans. All measurement and verification was required to be performed in accordance with the International Performance Measurement and Verification Protocol guidelines. Upon project completion, participants submitted project completion reports that include raw metering results and engineering calculations to demonstrate actual energy and demand savings based on pre- and post-monitoring results. All projects were reviewed by the internal energy efficiency engineers and/or managers, depending on their size. The rebate amount was based on these results.

Residential Products

Energy Efficient Showerheads

The Energy Efficient Showerheads product provides customers with up to two free 1.5 gallon per minute ("gpm") showerheads (primary and secondary), a 1.5 gpm kitchen faucet aerator, and up to two 1.0 gpm (primary) and 0.5 gpm (secondary) bathroom faucet aerators. Public Service performed a phone survey of a random sampling of customers who received a free showerhead and aerators.

Energy Feedback Residential

The Energy Feedback Residential product offers customers a variety of methods of feedback on their energy consumption in order to quantify how these different forms of feedback impact customers' energy use. This product was implemented by a third-party provider, Oracle Utilities Opower, which utilizes a Randomized Control Trial with Random Encouragement (RCT) process that compares the consumption data of participants to an appropriately sized group of non-participants (Control Group) to determine the energy savings. The Control Group are uninformed by any direct action of this product. In addition to determining the savings, the third-party implementer tracked and adjusted savings for participant's incremental participation in other energy efficiency products. This RCT methodology is recommended by the State and Local Energy Efficiency Action Network (SEE Action). A small portion of the product savings were derived from the online tool called My Energy. Propensity Score Matching was used to construct a comparison group for My Energy login customers to non-login customers. Propensity score matching is recommended by the SEE Action guidelines for evaluating behavior-based programs when it is not feasible to construct a randomized control group. In 2019, the realization rate for the Energy Feedback Pilot was 100.0%.

ENERGY STAR New Homes

Public Service's ENERGY STAR New Homes product offers prescriptive rebates. In 2019, the product was administered by a third-party implementer, Residential Science Resources, Inc. (RSR). All homes rebated through this product were subject to verification by a qualified Home Energy Rating Service (HERS) Rater and their associated Residential Energy Services Network Provider. The HERS Rater completed a minimum of two site visits to each home during the construction phase. Hundreds of data points are collected and submitted for each home, including the duct blaster test results and the final HERS rating. Upon completion, RSR reviewed each home and its HERS rating to confirm the accuracy of the energy modeling. Energy saving impacts for each home rebated were calculated based on the actual construction as compared to the reference (baseline) home for that particular jurisdiction. As a result, the realization rate for this product is 100%.

Evaporative Cooling

The Evaporative Cooling Rebate product provides prescriptive rebates to customers who purchase efficient evaporative cooling units. In 2019, M&V of this product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 11 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand and energy realization rates for the 2019 Evaporative Cooling product were 100.0% ± 0.0% around the targeted 90% confidence level.

High Efficiency Air Conditioning

The High Efficiency Air Conditioning Product provides rebates to customers who purchase high-efficiency equipment, properly install high efficiency air-conditioning equipment, or trade-in their old, inefficient equipment and purchase of high-efficiency equipment. Because air conditioners can only be field tested when the ambient outdoor temperature is above 70°F (or 55°F with a Field Diagnostic Services Inc. tool), this product maintains a slightly different M&V calendar than Public Service's other DSM products. Specifically, air conditioners that are installed after October 1 of each year will not be inspected until the following spring, and thus, the M&V period for this product runs from October 1 to September 30 of each year.

Group 14 performed the High Efficiency Air Conditioning product measurement and verification. The final demand and energy realization rates were 98.2% and 98.7%, respectively.

Home Energy Squad

The Home Energy Squad product offers installation services and discounted equipment to residential customers. The third-party implementer verifies and reports implemented measures to the Company. The final demand and energy realization rates for the 2019 Home Energy Squad product were 100.0% ± 0.0% and 100.0% ± 0.0%, respectively, around the targeted 90% confidence level.

Home Lighting & Recycling

The Home Lighting & Recycling product provides prescriptive point-of-sale rebates to customers who purchase qualifying CFL and LED light bulbs. In 2019, Nexant performed the Home Lighting & Recycling product measurement and verification. The verification process consisted of cross-checking Public Service's tracking databases with a sample of monthly or weekly invoices and invoice details from various manufacturers submitted to retailers. These invoices contained product buy-down dollar amounts and counts for each item SKU. No customer contact was made for the measurement and verification of this product. Nexant examined and verified 44 invoice line detail items out of the total 91,288 residential records contained within the Company's program tracking database. The 44 line-items were taken from a sample of monthly manufacturer invoices and associated invoice details. This effort uncovered no discrepancies between Xcel Energy's database and the invoice data. The final demand and energy realization rates for the 2019 Home Lighting & Recycling product were both 100.0% ± 0.0% around the targeted 90% confidence level.

Home Performance with ENERGY STAR®

The Home Performance with ENERGY STAR product provides prescriptive rebates to residential customers. In 2019, Public Service's third-party product implementer, CLEAResult, performed verification of home improvements, including a blower door test to verify the natural air changes per hour, a Combustion Appliance Zone test, and inspections of all work performed. Due to the extensive testing performed on each home, this product is assumed to have a realization rate of 100%.

Insulation & Air Sealing

The Insulation & Air Sealing product provides prescriptive rebates to customers who add insulation to their homes. In 2019, M&V of this product was performed by Nexant, following the prescriptive protocols described above. Of these projects, Nexant performed 43 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand, energy, and gas realization rates for the 2019 Insulation & Air Sealing product were all 100.0% ± 0.0% around the targeted 90% confidence level.

Refrigerator & Freezer Recycling

The Refrigerator & Freezer Recycling product provides a rebate to customers who retire their old, inefficient, but operational refrigerators and freezers. In 2019, M&V of this product was performed by Nexant, following the prescriptive protocols described above. To verify these results, Nexant performed phone of 44 randomly-selected participants and confirmed that the old refrigerator or freezer was operational and removed from the home as reported. The final realization rates for the 2019 Refrigerator & Freezer Recycling product were 100.0% ± 0.0% for both demand and energy savings.

Residential Heating

The Residential Heating product provides prescriptive rebates to customers who install efficient furnaces, boilers, and EC motor furnace fans. In 2019, M&V of this product was performed by Nexant, following the prescriptive protocols described above. Of these projects, Nexant performed 44 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand, energy, and gas realization rates for the 2019 Residential Heating product were all 100.0% ± 0.0% around the targeted 90% confidence level.

School Education Kits

The School Education Kits product provides curriculum and educational materials to teachers and efficiency measures to school children to teach them more about energy efficiency. Product administration, measurement, and verification for School Education Kits were conducted by a third-party vendor, AM Conservation. AM Conservation used parental surveys to determine which measures were installed in the home. The 2019 year-end savings for the program were determined using the installation rates determined by AM Conservation.

Thermostat Optimization

The Thermostat Optimization product utilizes thermostat optimization software in conjunction with eligible residential smart thermostats to enhance the energy efficiency savings of smart thermostats and improve peak demand reduction by smart thermostats during peak periods.

Water Heating

The Water Heating product provides prescriptive rebates to customers who purchase new, energy efficient water heaters. In 2019, M&V of this product was performed by Nexant, following the prescriptive protocols described above. Nexant performed 11 field inspections of installed energy efficient equipment at randomly-selected participant locations to verify key savings factors. The final demand, energy, and gas realization rates for the 2019 Water Heating product were all 100.0% ± 0.0% around the targeted 90% confidence level.

Low-Income Products

Energy Savings Kit

The Energy Savings Kits product provides energy efficiency kits to low-income customers. This product was implemented by a third-party provider, Energy Federation Inc., who identified income-qualified customers to receive kits. CustomerLink performed a phone survey to those customers who received a kit.

Multifamily Weatherization

The Multifamily Weatherization product offers weatherization measures to qualifying low-income multi-family buildings. The third-party program implementer, Energy Outreach of Colorado, audited each building to confirm that all work was completed correctly. Savings were calculated for each project based on the measures installed. As a result, the realization rate for this program is 100%.

Non-Profit

The Non-Profit product offers weatherization services to non-profit organizations. Public Service's third-party program implementer, Energy Outreach of Colorado, audited each building to confirm that all work was completed correctly. Savings were calculated for each project based on the measures installed. As a result, the realization rate for this program is 100%.

Single-Family Weatherization

The Single-Family Weatherization product provides weatherization to low-income single-family homes. Public Service's third-party product implementers, the Colorado Energy Office and Energy Outreach Colorado, managed the weatherization agencies that performed energy savings measures in each income-qualified single-family home. 100% of homes weatherized were subject to verification from Public Service at any given time. The Company received a signed or electronic form from each customer attesting to the work performed. Energy savings were calculated on a per-measure, per-home basis. Savings were calculated for each project based on the measures installed. As a result, the realization rate for this program is 100%.

Post-Program Year Activities

All measurement and verification activities for the 2019 performance year were completed in late 2019 through 2019 and all results are included in this report. Public Service intends to complete all future M&V activities annually prior to filing its M&V Report.

Product Process and Impact Evaluations Performed in 2019

Public Service contracted for evaluators to perform evaluations on the following products in 2019: Heating Efficiency, Motor & Drive Efficiency, and Single-Family Weatherization. In addition, the third-party evaluator completed follow-up net-to-gross research recommended in the 2018 Lighting Efficiency Evaluation and a review of lighting baseline practices. The following sections provide an overview of the findings of the evaluations and the evaluators' recommendations. The Company intends to address any recommended changes coming from these comprehensive evaluations through 60-Day Notices corresponding to the evaluation recommendations and Company responses.

Heating Efficiency

An evaluation team led by EMI Consulting conducted a process evaluation of Xcel Energy's Heating Efficiency product. The evaluation was conducted through interviews with participants, trade partners, peer program staff, and Xcel Energy staff. The team had the following key findings:

- Trade partners' familiarity with the product was low.
- Some trade partners reported reluctance to recommend rebate-eligible equipment and participating customers reported difficulties finding available trade partners familiar with high efficiency equipment.
- Interviewees rated Xcel Energy staff highly, but some interviewees received mixed messages about the rebates from staff.
- Forecasting energy savings for the product was challenging.
- Participating customers and trade partners continued to use the paper application forms despite availability of the online form.
- Trade partners sometimes hesitated to recommend high-efficiency boilers.
- Participating customers reported investigating rebate opportunities after they decided to purchase a particular equipment type.
- Peer programs offered a wider variety of gas savings measures.

The team had the following recommendations:

- Increase marketing and direct engagement with trade partners who participated more than once.
- Assign staff to maintain and track trade partner email information to ensure email addresses are up-to-date (for both administrative and field staff).
- Increase trade partner engagement by supporting trainings to increase product and equipment awareness.
- To prevent miscommunications, increase training for Xcel Energy sales staff, focusing on those who support smaller commercial and industrial customers, on product requirements and eligibility.
- Improve data management practices relating to documentation of early project stages in Salesforce.
- Provide training to customers and trade partners on how to use the online application form.
- Examine opportunities to improve the online application process to make it easier to complete and manage applications, including the ability to complete applications overtime.
- Adjust the incentive structure to encourage more customers to install mid-level efficiency boilers, instead of lower-level efficiency boilers.
- Increase opportunities to influence customers when they are deciding which equipment model to purchase.
- Assess feasibility of including additional measures offered by the product.

All of these recommendations are currently being reviewed by Public Service. Any changes that affect impact assumptions will be publicized through 60-Day Notice prior to implementation.

Motor & Drive Efficiency

An evaluation team led by EMI Consulting conducted a process and impact evaluation of Xcel Energy's Motor & Drive Efficiency product. The evaluation was conducted through interviews with participants,

non-participants, trade partners, peer program staff, and Xcel Energy staff. The team had the following key findings:

- Participating customers reported high satisfaction with trade partners, and that marketing and tools from Xcel Energy were influential in their decision to participate in the product. Application paperwork, however, was rated as the largest product-related barrier.
- Trade partners reported high satisfaction with the trade partner manager, most commonly rating this relationship as one of their top three most important product features. Adding additional support for the trade partner manager role may further engage them and increase product participation.
- Account managers and the Business Solutions Center (BSC) play an important role in educating participating customers about the product, but they sometimes help participating customers apply for rebates retroactively, thereby making customers full free-riders.
- All near-participant survey respondents who reported they had participated in the Product had Salesforce records of completed projects closely resembling those projects marked as "lost."

The team had the following recommendations:

- Given the known changes to the Product, the evaluation team recommends using the retrospective NTGR of 0.81 for kWh and 0.83 for kW for the prospective Net to Gross Ratio ("NTGR").
- Provide trade partners additional trainings in effective marketing and tools like the simple payback calculator and online application.
- Invest in resources to increase trade manger outreach or other resources that would serve a similar function to the trade partner manager to increase product participation.
- Continue to ensure that training is provided to account managers and BSC representatives to mitigate free-ridership.
- To prevent projects from closing automatically, ensure that transitions between account representatives are smooth and complete.

All of these recommendations are currently being reviewed by Public Service. Any changes that might affect impact assumptions will be publicized through 60-Day Notice prior to implementation.

<u>Single-Family Weatherization</u>

An evaluation team led by EMI Consulting conducted a comprehensive process evaluation of Xcel Energy's Colorado Single-Family Weatherization product, in which they assessed: assessed participating customers' satisfaction with the product, attitudes regarding the customer feedback process, and barriers faced, and value provided by participating in the product, and how similar products are implemented within the United States.

The evaluation was conducted through interviews with staff, trade partners, and other utilities, as well as participant surveys. Key findings (numbered in the list below) and recommendations (letters in the list below) included that:

1) Marketing and outreach are key to customer recruitment—most customers first hear about the product through a trusted source.
    a) Help customers market the product to their community.
    b) Explore including an addendum to product paperwork stating landlords will not raise rental prices because of weatherization installations.

c) Offer a referral bonus to participating customers and/or trade partners for high-potential neighborhoods.
d) Set neighborhood goals with a reward to benefit the neighborhood.
e) Use spatial (GIS) analysis to focus marketing strategy.

2) Participating customers reported high levels of satisfaction with the Single-Family Weatherization Product overall.
   a) Product representatives should continue their high-quality interactions with participating customers.
   b) Provide clear product representative contact information that is easy to locate.
   c) When gathering data on customers, note contact preferences for marketing and outreach efforts.
3) Participating customers stated they would like more information about the product and more education.
   a) Set clearer expectations on product processes.
   b) Expand energy pledge to action activity to more participating customers.
   c) Ensure that any materials given to agencies or other partners are accessible to diverse abilities as well as languages.
   d) Create an educational slide show that trade partners can show participating customers in-person.
4) Customer feedback: A timely, easy to complete survey would make providing feedback easier on the customer.
   a) Consistently offer a short feedback survey that takes minimal effort to give and fill out.

All of these recommendations are currently being reviewed by Public Service. Any changes that might affect impact assumptions will be publicized through 60-Day Notice prior to implementation.

Lighting Efficiency

An evaluation team led by EMI Consulting conducted a further research of Xcel Energy's Colorado Lighting Efficiency product, in which they investigated:

- Estimate the NTGR: Estimate the prospective NTGR for the 2020 program year.
- Assess the feasibility of collecting full category C&I lighting sales data.
- Provide supplemental insight for product baselines, including the percent of functional fixture replacements and proportion of lighting replaced as part of remodel projects.

The evaluation was conducted through participant surveys and interviews with participant trade partners, distributors, and non-participating contractors. Conclusions (numbered in the list below) and recommendations (letters in the list below) included that:

1) Xcel Energy's Lighting Efficiency Product continues to influence the lighting market, accelerating adoption of LED light fixture and retrofit kits.
   a) Xcel Energy should adopt a 2020 NTGR of 73% for downstream measures in the Lighting Efficiency product.
2) The Lighting Efficiency Product has a greater impact on sales volume than market share of LED fixtures and retrofit kits.
   a) Future efforts to assess product attribution should continue to evaluate changes in the volume of LEDs sold with and without the product.
3) Trade partners are responsive to incentive offerings, providing an opportunity for Xcel Energy to target key technologies and applications.

    a) Xcel Energy should continue to carefully consider which types of lighting equipment will provide the greatest benefit to the product and set incentive levels to encourage installation of those equipment types.
4) Downstream rebates have limited impact on maintenance installations; Xcel Energy's recent shift to midstream incentives for many measures may cover these installations more effectively.
    a) Xcel Energy should continue to monitor the lighting market and ensure that products frequently installed as maintenance measures are included in the midstream product.

All of these recommendations are currently being reviewed by Public Service. Any changes from the net to gross research that affect impact assumptions will be publicized through 60-Day Notice prior to implementation. The recommendations included in the lighting baseline study will be implemented in future plan filings as appropriate.

M&V Results

The following pages provide Tables 22a-c and Tables 23a-c, which describe the installation rates and realization rates used to calculate net, verified savings by program component. The column headings of these tables are defined in Table 21:

Table 21: Defined Terms

Column Heading	Definition
2019 Product	The DSM product offered by Public Service in 2019.
End-Use Measure Type	Whether the product was prescriptive or custom, or the product components, if the M&V process differed for different projects within a single product.
Gross Gen kW	The gross electric demand savings at the generator after line losses and coincidence with peak are factored in.
Gross Gen kWh	The gross electric energy savings at the generator after line losses are removed.
Gross Dth	The gross natural gas energy savings.
Installation Rate	The percent of measures that were installed, as opposed to purchased.
Demand (kW) Realization Rate	The ratio of gross electric demand savings measured in the M&V process to the electric demand savings claimed in the rebate application, expressed as a percentage.
Energy (kWh) Realization Rate	The ratio of gross electric energy savings measured in the M&V process to the electric energy savings claimed in the rebate application, expressed as a percentage.
Energy (Dth) Realization Rate	The ratio of gross natural gas energy savings measured in the M&V process to the gas energy savings claimed in the rebate application, expressed as a percentage.
Verified Gross Gen kW	The gross demand savings at the generator after the installation and demand realization rates have been applied.
Verified Gross Gen kWh	The gross energy savings at the generator after the installation and energy realization rates have been applied.
Verified Gross Dth	The gross savings after the installation and gas realization rates have been applied.
Electric Demand NTG	The net-to-gross ratio (percentage) applied to the Verified Gross Gen kW value to arrive at the Verified Net Gen kW value.
Electric Energy NTG	The net-to-gross ratio (percentage) applied to the Verified Gross Gen kWh value to arrive at the Verified Net Gen kWh value.
Gas NTG	The net-to-gross ratio (percentage) applied to the Verified Gross Dth value to arrive at the Verified Net Dth value.
Verified Net Gen kW	The final demand savings at the generator achieved once the installation rate, realization rate, and net-to-gross ratio were applied.
Verified Net Gen kWh	The final energy savings at the generator achieved once the installation rate, realization rate, and net-to-gross ratio were applied.
Verified Net Dth	The final gas savings achieved once the installation rate, realization rate, and net-to-gross ratio were applied.

Table 22a: Business Program Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (Full Year)

2019 Products	Gross Customer kW	Peak Coincident Customer kW	Customer kWh	Gross Dth	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Business Program							
Commercial Refrigeration	1,161	901	7,620,363	1,912	968	8,119,905	1,912
Compressed Air Efficiency	443	362	2,158,082	N/A	307	1,863,803	N/A
Cooling	2,638	2,484	5,651,408	N/A	2,357	5,158,359	N/A
Custom Efficiency	309	198	1,686,859	6,005	185	1,561,339	5,224
Data Center Efficiency	1,269	988	10,803,634	N/A	884	9,795,570	N/A
Energy Management Systems	669	38	5,532,390	3,776	35	5,131,923	3,398
Heating Efficiency	15	10	51,094	19,153	10	51,861	16,422
LED Street Lighting	3,085	0	12,818,626	N/A	0	12,203,652	N/A
Lighting Efficiency	31,485	20,882	144,945,944	N/A	17,167	117,349,881	N/A
Lighting - Small Business	8,771	5,580	38,824,824	93	5,404	37,058,670	86
Motor & Drive Efficiency	3,585	2,751	17,233,250	N/A	1,917	11,892,548	N/A
Mutifamily Buildings	4,195	988	8,905,929	21,614	1,066	9,498,057	21,614
New Construction	18,679	17,836	57,439,659	104,129	18,245	58,011,681	101,181
Recommissioning	232	159	852,613	3,226	153	812,028	2,903
Self Direct	4,640	2,132	13,270,741	N/A	2,079	12,872,104	N/A
Strategic Energy Management	8,535	4,727	35,315,519	0	4,601	34,213,911	0
Business Program Total	**89,713**	**60,036**	**363,110,935**	**159,907**	**55,377**	**325,595,292**	**152,740**

Table 22b: Business Program Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (January – June 2019)

2019 Products January 1 - June 30, 2019	End-Use/Measure Type	Gross Customer kW	Peak Coincident Customer kW	LL	Gross Peak Gen kW	Customer kWh	Gross Gen kWh	Gross Dth	Installation Rate	Demand (kW) Realization Rate	Energy (kWh) Realization Rate	Energy (Dth) Realization Rate	Verified Gross Gen kW	Verified Gross Gen kWh	Verified Gross Dth	Elec Demand NTG	Elec Energy NTG	Gas NTG	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Business Program																					
Commercial Refrigeration	Prescriptive and Custom	880	630	6.51%	673	5,284,363	5,652,330	0	100.0%	100.0%	100.0%	100.0%	673	5,652,330	0	100.0%	100.0%	100.0%	673	5,652,330	0
Compressed Air Efficiency	Prescriptive	173	152	6.51%	163	588,969	629,981	N/A	100.0%	100.00%	100.00%	N/A	163	629,981	N/A	73.00%	73.00%	N/A	119	459,886	N/A
	Studies & Custom	101	90	6.51%	96	689,238	737,232	N/A	100.0%	100.0%	100.0%	N/A	96	737,232	N/A	87.00%	87.00%	N/A	84	641,392	N/A
Cooling	Prescriptive	1,098	988	6.51%	1,057	1,831,995	1,959,563	N/A	100.0%	100.0%	100.0%	N/A	1,057	1,959,563	N/A	89.00%	89.00%	N/A	940	1,744,011	N/A
	Screw, Scroll, Centrifugal	50	45	6.51%	48	229,850	245,855	N/A	100.0%	100.0%	100.0%	N/A	48	245,855	N/A	71.00%	71.00%	N/A	34	174,557	N/A
	Custom	282	362	6.51%	387	662,715	708,862	N/A	100.0%	100.0%	100.0%	N/A	387	708,862	N/A	87.00%	87.00%	N/A	337	616,710	N/A
	ECM, Studies	40	36	6.51%	39	47,792	51,120	N/A	100.0%	100.0%	100.0%	N/A	39	51,120	N/A	100.00%	100.00%	N/A	39	51,120	N/A
Custom Efficiency	Custom	156	133	6.51%	142	959,655	1,026,479	0	100.0%	100.0%	100.0%	100.0%	142	1,026,479	0	87.0%	87.0%	93.0%	123	893,037	0
Data Center Efficiency	Customer-Identified	668	580	6.51%	620	5,627,026	6,018,853	N/A	100.0%	100.0%	100.0%	N/A	620	6,018,853	N/A	80.0%	80.0%	N/A	496	4,815,083	N/A
	Site-Visit-Identified	235	198	6.51%	211	2,690,373	2,877,712	N/A	100.0%	100.0%	100.0%	N/A	211	2,877,712	N/A	94.5%	94.5%	N/A	200	2,719,105	N/A
	Study-Identified	32	31	6.51%	33	714,085	763,809	N/A	100.0%	100.0%	100.0%	N/A	33	763,809	N/A	100.0%	100.0%	N/A	33	763,809	N/A
Energy Management Systems	EMS	493	28	6.51%	30	4,114,783	4,401,308	1,825	100.0%	100.0%	100.0%	100.0%	30	4,401,308	1,825	87.0%	87.0%	90.0%	26	3,829,138	1,642
Heating Efficiency	Prescriptive	9	7	6.51%	8	33,779	36,131	10,045	100.0%	100.0%	100.0%	99.7%	8	36,131	10,015	100.0%	100.0%	86.0%	8	36,131	8,613
LED Street Lights	Prescriptive	344	0	6.51%	0	1,425,882	1,525,171	N/A	100.0%	100.0%	100.0%	N/A	0	1,525,171	N/A	90.0%	90.0%	N/A	0	1,372,654	N/A
Lighting Efficiency	Prescriptive & Custom	12,886	7,676	6.51%	8,211	57,285,160	61,274,104	N/A	100.0%	100.0%	100.0%	N/A	8,211	61,274,104	N/A	74.0%	74.0%	N/A	6,076	45,342,837	N/A
	Other Prescriptive	3,703	2,988	6.51%	3,196	16,126,914	17,249,881	N/A	99.0%	100.0%	100.0%	N/A	3,164	17,077,382	N/A	74.0%	74.0%	N/A	2,341	12,637,263	N/A
	Midstream	1,463	1,116	6.51%	1,194	6,797,977	7,271,341	N/A	99.0%	100.0%	100.0%	N/A	1,182	7,198,628	N/A	92.0%	92.0%	N/A	1,087	6,622,738	N/A
Lighting - Small Business	General Prescriptive	2,648	1,326	6.51%	2,832	11,871,551	12,698,204	0	100.0%	99.5%	99.5%	100.0%	2,818	12,634,713	0	89.0%	89.0%	100.0%	1,256	11,244,895	0
	Custom	448	338	6.51%	480	1,885,849	2,017,167	0	100.0%	100.0%	100.0%	100.0%	480	2,017,167	0	89.0%	89.0%	100.0%	322	1,795,278	0
	Midstream	1,423	1,086	6.51%	1,522	6,611,932	7,072,341	0	100.0%	99.5%	99.5%	100.0%	1,514	7,036,980	0	92.0%	92.0%	100.0%	1,063	6,474,021	0
	Low-Wattage, Aerators	8	5	6.51%	9	37,775	40,405	26	100.0%	100.0%	100.0%	100.0%	9	40,405	26	90.0%	90.0%	100.0%	5	36,365	26
	Network Lighting Controls	0	0	6.51%	0	0	0	0	100.0%	100.0%	100.0%	100.0%	0	0	0	100.0%	100.0%	100.0%	0	0	0
Motor & Drive Efficiency		2,254	1,716	6.51%	1,836	11,073,507	11,844,590	N/A	100.0%	99.7%	99.7%	N/A	1,830	11,809,056	N/A	65.0%	65.0%	N/A	1,190	7,675,886	N/A
Mutifamily Buildings Pilot		2,710	566	6.51%	606	5,833,864	6,240,094	16,142	100.0%	100.0%	100.0%	100.0%	606	6,240,094	16,142	100.0%	100.0%	100.0%	606	6,240,094	16,142
New Construction	Energy Efficient Buildings	2,542	1,989	6.51%	2,128	11,061,339	11,831,574	3,795	100.0%	100.0%	100.0%	100.0%	2,128	11,831,574	3,795	95.0%	95.0%	95.0%	2,021	11,239,996	3,606
	Energy Design Assistance	6,760	6,760	6.51%	7,231	18,242,188	19,512,448	41,042	100.0%	100.0%	100.0%	100.0%	7,231	19,512,448	41,042	95.0%	95.0%	95.0%	6,869	18,536,826	38,990
Recommissioning	Custom	168	159	6.51%	170	121,493	129,953	0	100.0%	100.0%	100.0%	100.0%	170	129,953	0	90.0%	90.0%	90.0%	153	116,958	0
Self Direct	Custom	3,463	1,707	6.51%	1,826	10,504,623	11,236,093	N/A	100.0%	100.0%	100.0%	N/A	1,826	11,236,093	N/A	91.0%	91.0%	N/A	1,661	10,224,844	N/A
Strategic Energy Management	Implemented Behavioral Measure	68	27	6.51%	29	325,679	348,357	0	100.0%	100.0%	100.0%	100.0%	29	348,357	0	100.0%	100.0%	100.0%	29	348,357	0
	Process Efficiency	4,900	3,631	6.51%	3,884	25,762,656	27,556,590	0	100.0%	100.0%	100.0%	100.0%	3,884	27,556,590	0	90.0%	90.0%	90.0%	3,496	24,800,931	0
Business Program Total		**50,007**	**34,371**	**6.51%**	**38,660**	**208,443,012**	**222,957,548**	**72,875**	**100.0%**	**99.9%**	**99.9%**	**100.0%**	**38,589**	**222,577,950**	**72,845**	**81.1%**	**84.1%**	**94.7%**	**31,289**	**187,106,250**	**69,018**

Table 22c: Business Program Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (July – December 2019)

2019 Products July 1 - December 31, 2019	End-Use/Measure Type	Gross Customer kW	Peak Coincident Customer kW	Demand Line Loss	Gross Peak Gen kW	Customer kWh	Energy Line Loss	Gross Gen kWh	Gross Dth	Installation Rate	Demand (kW) Realization Rate	Energy (kWh) Realization Rate	Energy (Dth) Realization Rate	Verified Gross Gen kW	Verified Gross Gen kWh	Verified Gross Dth	Elec Demand NTG	Elec Energy NTG	Gas NTG	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Business Program																						
Commercial Refrigeration	Prescriptive and Custom	281	272	7.71%	295	2,336,000	5.33%	2,467,576	1,912	100.0%	100.0%	100.0%	100.0%	295	2,467,576	1,912	100.0%	100.0%	100.0%	295	2,467,576	1,912
Compressed Air Efficiency	Prescriptive	66	56	7.71%	60	311,610	5.33%	329,161	N/A	100.0%	100.0%	100.0%	N/A	60	329,161	N/A	74.00%	74.00%	N/A	45	243,580	N/A
	Studies & Custom	104	64	7.71%	69	568,265	5.33%	600,273	N/A	100.0%	100.0%	100.0%	N/A	69	600,273	N/A	87.00%	87.00%	N/A	60	522,237	N/A
Cooling	Prescriptive	1,100	990	7.71%	1,072	2,149,923	5.33%	2,271,018	N/A	100.0%	100.0%	100.0%	N/A	1,072	2,271,018	N/A	89.00%	89.00%	N/A	954	2,021,206	N/A
	Screw, Scroll, Centrifugal	50	45	7.71%	49	707,506	5.33%	747,356	N/A	100.0%	100.0%	100.0%	N/A	49	747,356	N/A	71.00%	71.00%	N/A	35	530,623	N/A
	Custom	18	18	7.71%	20	19,754	5.33%	20,867	N/A	100.0%	100.0%	100.0%	N/A	20	20,867	N/A	87.00%	87.00%	N/A	17	18,154	N/A
	ECM, Studies	0	0	7.71%	0	1,873	5.33%	1,978	N/A	100.0%	100.0%	100.0%	N/A	0	1,978	N/A	100.00%	100.00%	N/A	0	1,978	N/A
Custom Efficiency	Custom	154	65	7.71%	71	727,204	5.33%	768,164	6,005	100.0%	100.0%	100.0%	100.0%	71	768,164	6,005	87.0%	87.0%	87.0%	61	668,303	5,224
Data Center Efficiency	Customer-Identified			7.71%	0		5.33%	0	N/A	100.0%	100.0%	100.0%	N/A	0	0	N/A	45.0%	45.0%	N/A	0	0	N/A
	Site-Visit-Identified	334	179	7.71%	194	1,772,150	5.33%	1,871,967	N/A	100.0%	100.0%	100.0%	N/A	194	1,871,967	N/A	80.0%	80.0%	N/A	155	1,497,573	N/A
	Study-Identified			7.71%	0		5.33%	0	N/A	100.0%	100.0%	100.0%	N/A	0	0	N/A	100.0%	100.0%	N/A	0	0	N/A
Energy Management Systems	EMS	176	10	7.71%	10	1,417,607	5.33%	1,497,454	1,952	100.0%	100.0%	100.0%	100.0%	10	1,497,454	1,952	87.0%	87.0%	90.0%	9	1,302,785	1,756
Heating Efficiency	Prescriptive	5	2	7.71%	2	17,315	5.33%	18,290	9,108	100.0%	100.0%	100.0%	99.7%	2	18,290	9,080	86.0%	86.0%	86.0%	2	15,730	7,809
LED Street Lights		2,742	0	7.71%	0	11,392,744	5.33%	12,034,442	N/A	100.0%	100.0%	100.0%	N/A	0	12,034,442	N/A	90.0%	90.0%	N/A	0	10,830,998	N/A
Lighting Efficiency	Prescriptive & Custom	10,857	7,182	7.71%	7,782	53,107,280	5.33%	56,098,558	N/A	100.0%	100.0%	100.0%	N/A	7,782	56,098,558	N/A	74.0%	74.0%	N/A	5,759	41,512,933	N/A
	Other Prescriptive	2,438	1,830	7.71%	1,983	11,138,182	5.33%	11,765,542	N/A	99.0%	100.0%	100.0%	N/A	1,963	11,647,887	N/A	92.0%	92.0%	N/A	1,806	10,716,056	N/A
	Midstream	137	91	7.71%	98	490,431	5.33%	518,055	N/A	100.0%	100.0%	100.0%	N/A	98	518,055	N/A	100.0%	100.0%	N/A	98	518,055	N/A
Lighting - Small Business	General Prescriptive	1,320	638	7.71%	1,431	5,263,416	5.33%	5,559,879	0	100.0%	99.5%	99.5%	100.0%	1,423	5,532,080	0	89.0%	89.0%	100.0%	612	4,923,552	0
	Custom	170	117	7.71%	127	559,620	5.33%	591,141	0	100.0%	100.0%	100.0%	100.0%	127	591,141	0	89.0%	89.0%	100.0%	113	526,115	0
	Midstream	2,747	2,066	7.71%	2,238	12,577,127	5.33%	13,285,536	0	99.0%	99.5%	99.5%	100.0%	2,205	13,086,917	0	92.0%	92.0%	100.0%	2,029	12,039,966	0
	Aerators	0	0	7.71%	0	586	5.33%	619	67	100.0%	99.5%	99.5%	100.0%	0	616	67	90.0%	90.0%	90.0%	0	554	60
	Network Lighting Controls	5	4	7.71%	4	16,968	5.33%	17,924	0	100.0%	100.0%	100.0%	100.0%	4	17,924	0	100.0%	100.0%	100.0%	4	17,924	0
Motor & Drive Efficiency		1,331	1,035	7.71%	1,122	6,159,743	5.33%	6,506,692	N/A	100.0%	99.7%	99.7%	N/A	1,118	6,487,172	N/A	65.0%	65.0%	N/A	727	4,216,662	N/A
Mutifamily Buildings	Business Measures	381	283	7.71%	307	1,983,601	5.33%	2,095,328	129	100.0%	100.0%	100.0%	100.0%	307	2,095,328	129	100.0%	100.0%	100.0%	307	2,095,328	129
	Residential Measures	1,104	139	9.13%	153	1,088,464	6.38%	1,162,635	5,343	100.0%	100.0%	100.0%	100.0%	153	1,162,635	5,343	100.0%	100.0%	100.0%	153	1,162,635	5,343
New Construction	Energy Efficient Buildings	1,627	1,338	7.71%	1,449	4,966,300	5.33%	5,246,028	5,668	100.0%	100.0%	100.0%	100.0%	1,449	5,246,028	5,668	95.0%	95.0%	97.0%	1,377	4,983,726	5,498
	Energy Design Assistance	7,749	7,749	7.71%	8,397	23,169,832	5.33%	24,474,877	53,623	100.0%	100.0%	100.0%	100.0%	8,397	24,474,877	53,623	95.0%	95.0%	99.0%	7,977	23,251,133	53,086
Recommissioning	Custom	64	0	7.71%	0	731,120	5.33%	772,300	3,226	100.0%	100.0%	100.0%	100.0%	0	772,300	3,226	90.0%	90.0%	90.0%	0	695,070	2,903
Self Direct	Custom	1,178	426	7.71%	461	2,766,118	5.33%	2,921,920	N/A	100.0%	100.0%	100.0%	N/A	461	2,921,920	N/A	90.6%	90.6%	N/A	418	2,647,260	N/A
Strategic Energy Management	Process	3,566	1,068	7.71%	1,157	9,227,184	5.33%	9,746,907	0	100.0%	100.0%	100.0%	100.0%	1,157	9,746,907	0	93.0%	93.0%	93.0%	1,076	9,064,623	0
Business Program Total		**36,140**	**24,598**	**7.71%**	**27,394**	**145,440,739**	**5.33%**	**153,645,579**	**87,032**	**100.0%**	**99.9%**	**99.9%**	**100.0%**	**27,331**	**153,281,982**	**87,004**	**88.1%**	**84.4%**	**96.2%**	**24,088**	**129,427,711**	**83,722**

Table 23a: Residential and Low-Income Programs Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (Full Year)

2019 Products	Gross Customer kW	Peak Coincident Customer kW	Customer kWh	Gross Dth	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Residential Program							
Energy Efficient Showerheads	79	61	699,813	53,008	38	464,634	32,438
Energy Feedback Residential	5,876	6,603	17,566,700	88,743	7,266	18,763,744	88,743
ENERGY STAR New Homes	1,547	977	4,785,097	111,136	981	4,734,206	102,245
Evaporative Cooling	13,968	9,778	7,705,543	N/A	7,746	5,993,754	N/A
High Efficiency Air Conditioning	4,104	3,653	3,723,097	27,220	2,743	2,788,315	18,401
Home Energy Squad	1,354	163	1,290,973	3,624	178	1,389,518	3,624
Home Lighting & Recycling	155,095	21,389	180,070,659	N/A	14,093	116,719,772	N/A
Home Performance w/ ENERGY STAR	174	121	111,118	6,863	153	138,975	7,952
Insulation & Air Sealing	372	337	175,650	21,862	317	163,358	19,457
Refrigerator & Freezer Recycling	1,056	682	5,745,834	N/A	431	3,570,691	N/A
Residential Heating	1,282	958	5,273,725	81,360	982	5,335,684	69,970
School Education Kits	10,038	1,169	11,004,480	97,130	1,095	9,985,776	45,946
Thermostat Optimization	1,394	1,059	799,433	25,082	1,151	863,064	25,082
Water Heating	15	15	107,745	5,139	17	116,034	4,625
Residential Program Total	**196,355**	**46,966**	**239,059,867**	**521,165**	**37,191**	**171,027,524**	**418,481**
Low-Income Program							
Energy Savings Kits	2,201	272	2,580,564	20,138	229	2,125,765	13,949
Multifamily Weatherization	532	177	1,968,857	9,574	195	2,105,751	9,574
Non-Profit	580	390	1,634,965	1,779	420	1,736,753	1,779
Single-Family Weatherization	1,233	209	1,448,289	52,774	229	1,550,777	52,774
Low-Income Program Total	**4,547**	**1,048**	**7,632,675**	**84,265**	**1,073**	**7,519,046**	**78,077**

Table 23b: Residential and Low-Income Programs Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (January – June 2019)

2019 Products January 1 - June 30, 2019	End-Use/Measure Type	Gross Customer kW	Peak Coincident Customer kW	LL	Gross Peak Gen kW	Customer kWh	Gross Gen kWh	Gross Dth	Installation Rate	Demand (kW) Realization Rate	Energy (kWh) Realization Rate	Energy (Dth) Realization Rate	Verified Gross Gen kW	Verified Gross Gen kWh	Verified Gross Dth	Elec Demand NTG	Elec Energy NTG	Gas NTG	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Residential Program																					
Energy Efficient Showerhead	Showerhead	0.516	0.258	7.69%	0.279	4,257	4,612	241	71.9%	100.0%	100.0%	100.0%	0.201	3,315	173	99.0%	99.0%	99.0%	0.199	3,282	172
	Second Showerhead	0.156	0.104	7.69%	0.113	1,404	1,521	78	61.6%	100.0%	100.0%	100.0%	0.069	937	48	99.0%	99.0%	99.0%	0.069	928	48
	Kitchen Aerator	0.000	0.019	7.69%	0.021	76	82	4	27.3%	100.0%	100.0%	100.0%	0.006	22	1	99.0%	99.0%	99.0%	0.000	22	1
	Bath Aerator	0.000	0.084	7.69%	0.091	336	364	17	37.0%	100.0%	100.0%	100.0%	0.034	134	6	99.0%	99.0%	99.0%	0.000	133	6
	Second Bath Aerator	0.000	0.045	7.69%	0.049	180	195	9	33.9%	100.0%	100.0%	100.0%	0.017	66	3	99.0%	99.0%	99.0%	0.000	66	3
Energy Feedback Residential		0	0	7.69%	0	0	0	0	100.0%	100.0%	100.0%	100.0%	0	0	0	100.0%	100.0%	100.0%	0	0	0
ENERGY STAR New Homes		987	499	7.69%	541	2,288,990	2,479,677	55,130	100.0%	100.0%	100.0%	100.0%	541	2,479,677	55,130	92.0%	92.0%	92.0%	498	2,281,303	50,720
Evaporative Cooling	Prescriptive	4,507	3,155	7.69%	3,418	2,488,105	2,695,380	N/A	100.0%	100.0%	100.0%	N/A	3,418	2,695,380	N/A	70.0%	70.0%	N/A	2,392	1,886,766	N/A
	Multi-ducted	964	675	7.69%	731	524,212	567,882	N/A	100.0%	100.0%	100.0%	N/A	731	567,882	N/A	90.0%	90.0%	N/A	658	511,094	N/A
High Efficiency Air Conditioning	AC, ASHP	1,429	1,287	7.69%	1,394	1,105,302	1,197,381	8,191	100.0%	98.2%	98.7%	100.0%	1,369	1,181,934	8,191	67.6%	67.6%	67.6%	925	798,988	5,537
	GSHP, Mini-Split	160	123	7.69%	133	182,893	198,129	0	100.0%	100.0%	100.0%	100.0%	133	198,129	0	100.0%	100.0%	100.0%	133	198,129	0
Home Energy Squad		756	80	7.69%	87	697,353	755,447	2,176	100.0%	100.0%	100.0%	100.0%	87	755,447	2,176	100.0%	100.0%	100.0%	87	755,447	2,176
Home Lighting & Recycling	Residential Std LEDs	50,232	4,019	7.69%	4,353	45,660,509	49,464,315	N/A	99.0%	100.0%	100.0%	N/A	4,310	48,969,672	N/A	61.0%	61.0%	N/A	2,629	29,871,500	N/A
	Small Business Std LEDs	3,171	2,017	6.51%	2,157	16,449,693	17,595,136	N/A	99.0%	100.0%	100.0%	N/A	2,136	17,419,185	N/A	61.0%	61.0%	N/A	1,303	10,625,703	N/A
	Residential Specialty LEDs	16,345	1,308	7.69%	1,416	14,857,229	16,094,929	N/A	99.0%	100.0%	100.0%	N/A	1,402	15,933,980	N/A	61.0%	61.0%	N/A	855	9,719,728	N/A
	Small Business Specialty LEDs	1,043	664	6.51%	710	5,411,449	5,788,265	N/A	99.0%	100.0%	100.0%	N/A	703	5,730,383	N/A	61.0%	61.0%	N/A	429	3,495,533	N/A
	Residential TLEDs	0	0	7.69%	0	0	0	N/A	99.0%	100.0%	100.0%	N/A	0	0	N/A	61.0%	61.0%	N/A	0	0	N/A
	Small Business TLEDs	0	0	6.51%	0	0	0	N/A	99.0%	100.0%	100.0%	N/A	0	0	N/A	61.0%	61.0%	N/A	0	0	N/A
Home Performance w/ ENERGY STAR	Prescriptive	123	84	7.69%	91	75,224	81,491	4,194	100.0%	100.0%	100.0%	100.0%	91	81,491	4,194	116.0%	116.0%	116.0%	106	94,529	4,865
	Tankless	0	0	7.69%	0	0	0	42	100.0%	100.0%	100.0%	100.0%	0	0	42	100.0%	100.0%	100.0%	0	0	42
Insulation & Air Sealing	Prescriptive	258	224	7.69%	243	121,448	131,565	12,600	100.0%	100.0%	100.0%	100.0%	243	131,565	12,600	85.0%	85.0%	89.0%	207	111,831	11,214
Refrigerator & Freezer Recycling	Remove Second Refrigerator	211	135	7.69%	146	1,182,102	1,280,578	N/A	100.0%	100.0%	100.0%	N/A	146	1,280,578	N/A	64.0%	64.0%	N/A	94	819,570	N/A
	Remove Primary Refrigerator	249	159	7.69%	172	1,394,299	1,510,453	N/A	100.0%	100.0%	100.0%	N/A	172	1,510,453	N/A	52.5%	52.5%	N/A	91	792,988	N/A
	Room AC Recycling	18	16	7.69%	18	6,876	7,449	N/A	100.0%	100.0%	100.0%	N/A	18	7,449	N/A	57.0%	57.0%	N/A	10	4,246	N/A
Residential Heating		696	513	7.69%	556	2,846,844	3,084,004	53,399	100.0%	100.0%	100.0%	100.0%	556	3,084,004	53,399	94.0%	94.0%	86.0%	523	2,898,964	45,923
School Education Kits	11 Watt LED	1,777	142	7.69%	154	1,615,692	1,750,289	N/A	90.3%	100.0%	100.0%	N/A	139	1,580,511	N/A	100.0%	100.0%	N/A	139	1,580,511	N/A
	9 Watt LED	2,878	230	7.69%	249	2,615,884	2,833,803	N/A	91.3%	100.0%	100.0%	N/A	228	2,587,263	N/A	100.0%	100.0%	N/A	228	2,587,263	N/A
	Showerhead	78	50	7.69%	54	681,943	738,753	38,641	48.2%	100.0%	100.0%	100.0%	26	356,079	18,625	100.0%	100.0%	100.0%	26	356,079	18,625
	Kitchen Aerator	9	11	7.69%	12	76,654	83,040	4,344	42.9%	100.0%	100.0%	100.0%	5	35,624	1,863	100.0%	100.0%	100.0%	5	35,624	1,863
	Bathroom Aerator 1.0gpm	10	13	7.69%	14	89,552	97,012	5,074	44.3%	100.0%	100.0%	100.0%	6	42,976	2,248	100.0%	100.0%	100.0%	6	42,976	2,248
	Bathroom Aerator 0.5pgm	0	0	7.69%	0	0	0	0	44.3%	100.0%	100.0%	100.0%	0	0	0	100.0%	100.0%	100.0%	0	0	0
Thermostat Optimization		1,053	800	7.69%	866	603,763	654,060	18,919	100.0%	100.0%	100.0%	100.0%	866	654,060	18,919	100.0%	100.0%	100.0%	866	654,060	18,919
Water Heating		9	9	7.69%	9	62,460	67,663	3,245	100.0%	100.0%	100.0%	100.0%	9	67,663	3,245	100.0%	100.0%	90.0%	9	67,663	2,920
Residential Program Total		**86,964**	**16,211**	**7.69%**	**17,525**	**101,044,729**	**109,163,477**	**206,305**	**99.1%**	**99.9%**	**100.0%**	**100.0%**	**17,334**	**107,355,861**	**180,865**	**70.5%**	**65.4%**	**91.4%**	**12,217**	**70,194,925**	**165,283**
Low-Income Program																					
Energy Savings Kits	LED	888	70	7.69%	76	876,211	949,205	N/A	78.3%	100.0%	100.0%	N/A	60	743,227	N/A	100.0%	100.0%	N/A	60	743,227	N/A
	Showerhead	13	6	7.69%	7	102,644	111,195	6,340	70.2%	100.0%	100.0%	100.0%	5	78,059	4,451	100.0%	100.0%	100.0%	5	78,059	4,451
	Kitchen Aerator	0	3	7.69%	3	12,748	13,810	703	62.8%	100.0%	100.0%	100.0%	2	8,673	441	100.0%	100.0%	100.0%	2	8,673	441
	Bathroom Aerator 1.0gpm	0	3	7.69%	3	12,868	13,940	710	68.1%	100.0%	100.0%	100.0%	2	9,493	483	100.0%	100.0%	100.0%	2	9,493	483
Multifamily Weatherization		35	21	7.69%	23	180,081	195,083	2,857	100.0%	100.0%	100.0%	100.0%	23	195,083	2,857	100.0%	100.0%	100.0%	23	195,083	2,857
Non-Profit		281	150	6.51%	160	728,794	779,542	623	100.0%	100.0%	100.0%	100.0%	160	779,542	623	100.0%	100.0%	100.0%	160	779,542	623
Single-Family Weatherization		250	22	7.69%	24	250,418	271,279	20,620	100.0%	100.0%	100.0%	100.0%	24	271,279	20,620	100.0%	100.0%	100.0%	24	271,279	20,620
Low-Income Program Total		**1,468**	**276**	**7.69%**	**297**	**2,163,764**	**2,334,054**	**31,853**		**100.0%**	**100.0%**	**100.0%**	**276**	**2,085,356**	**29,476**	**100.0%**	**100.0%**	**100.0%**	**276**	**2,085,356**	**29,476**

Table 23c: Residential and Low-Income Programs Installation Rates, Realization Rates, and Final Net, Verified Savings by Product Component (July – December 2019)

2019 Products July 1 - December 31, 2019	End-Use/Measure Type	Gross Customer kW	Peak Coincident Customer kW	Demand Line Loss	Gross Peak Gen kW	Customer kWh	Energy Line Loss	Gross Gen kWh	Gross Dth	Installation Rate	Demand (kW) Realization Rate	Energy (kWh) Realization Rate	Energy (Dth) Realization Rate	Verified Gross Gen kW	Verified Gross Gen kWh	Verified Gross Dth	Elec Demand NTG	Elec Energy NTG	Gas NTG	Verified Net Gen kW	Verified Net Gen kWh	Verified Net Dth
Residential Program																						
Energy Efficient Showerhead	Showerhead	51	33	9.13%	36	447,046	6.38%	477,509	32,421	71.9%	100.0%	100.0%	100.0%	26	343,281	23,308	99.0%	99.0%	99.0%	26	339,848	23,075
	Second Showerhead	13	8	9.13%	9	116,036	6.38%	123,943	9,145	61.6%	100.0%	100.0%	100.0%	6	76,349	5,633	99.0%	99.0%	99.0%	6	75,585	5,577
	Kitchen Aerator	6	8	9.13%	9	55,217	6.38%	58,980	4,751	27.3%	100.0%	100.0%	100.0%	2	16,101	1,297	99.0%	99.0%	99.0%	2	15,940	1,284
	Bath Aerator 1.0gpm	6	8	9.13%	9	57,111	6.38%	61,003	4,537	37.0%	100.0%	100.0%	100.0%	3	22,540	1,676	99.0%	99.0%	99.0%	3	22,315	1,660
	Bath Aerator 0.5gpm	0	1	9.13%	1	0	6.38%	0	222	37.0%	100.0%	100.0%	100.0%	0	0	82	99.0%	99.0%	99.0%	0	0	81
	Second Bath Aerator 1.0gpm	2	3	9.13%	3	18,150	6.38%	19,387	1,484	33.9%	100.0%	100.0%	100.0%	1	6,580	504	99.0%	99.0%	99.0%	1	6,514	499
	Second Bath Aerator 0.5gpm	0	0	9.13%	0	0	6.38%	0	99	33.9%	100.0%	100.0%	100.0%	0	0	34	99.0%	99.0%	99.0%	0	0	33
Energy Feedback Residential		5,876	6,603	9.13%	7,266	17,566,700	6.38%	18,763,744	88,743	100.0%	100.0%	100.0%	100.0%	7,266	18,763,744	88,743	100.0%	100.0%	100.0%	7,266	18,763,744	88,743
ENERGY STAR New Homes		560	477	9.13%	525	2,496,107	6.38%	2,666,199	56,006	100.0%	100.0%	100.0%	100.0%	525	2,666,199	56,006	92.0%	92.0%	92.0%	483	2,452,903	51,525
Evaporative Cooling	Standard, Premium	7,759	5,431	9.13%	5,977	4,287,055	6.38%	4,579,187	N/A	100.0%	100.0%	100.0%	N/A	5,977	4,579,187	N/A	70.0%	70.0%	N/A	4,184	3,205,431	N/A
	Premium Multi-Duct New Install	739	517	9.13%	569	406,171	6.38%	433,849	N/A	100.0%	100.0%	100.0%	N/A	569	433,849	N/A	90.0%	90.0%	N/A	512	390,464	N/A
High Efficiency Air Conditioning	AC, ASHP	2,359	2,123	9.13%	2,337	2,278,112	6.38%	2,433,349	19,029	100.0%	98.2%	98.7%	100.0%	2,295	2,401,959	19,029	67.6%	67.6%	67.6%	1,552	1,623,724	12,864
	GSHP, Mini-Split	155	121	9.13%	133	156,790	6.38%	167,474	0	100.0%	100.0%	100.0%	100.0%	133	167,474	0	100.0%	100.0%	100.0%	133	167,474	0
Home Energy Squad		598	83	9.13%	92	593,620	6.38%	634,071	1,448	100.0%	100.0%	100.0%	100.0%	92	634,071	1,448	100.0%	100.0%	100.0%	92	634,071	1,448
Home Lighting & Recycling	Residential Std LEDs	64,732	8,162	9.13%	8,982	63,825,592	6.38%	68,174,847	N/A	99.0%	100.0%	100.0%	N/A	8,892	67,493,098	N/A	61.0%	61.0%	N/A	5,424	41,170,790	N/A
	Small Business Std LEDs	4,132	2,769	7.71%	3,001	15,973,614	5.33%	16,873,331	N/A	99.0%	100.0%	100.0%	N/A	2,971	16,704,598	N/A	61.0%	61.0%	N/A	1,812	10,189,805	N/A
	Residential Specialty LEDs	14,257	1,798	9.13%	1,978	14,057,034	6.38%	15,014,920	N/A	99.0%	100.0%	100.0%	N/A	1,958	14,864,770	N/A	61.0%	61.0%	N/A	1,195	9,067,510	N/A
	Small Business Specialty LEDs	910	610	7.71%	661	3,518,050	5.33%	3,716,205	N/A	99.0%	100.0%	100.0%	N/A	654	3,679,043	N/A	61.0%	61.0%	N/A	399	2,244,216	N/A
	Residential TLEDs	258	32	9.13%	36	253,936	6.38%	271,240	N/A	99.0%	100.0%	100.0%	N/A	35	268,527	N/A	100.0%	100.0%	N/A	35	268,527	N/A
	Small Business TLEDs	16	11	7.71%	12	63,552	5.33%	67,132	N/A	99.0%	100.0%	100.0%	N/A	12	66,461	N/A	100.0%	100.0%	N/A	12	66,461	N/A
Home Performance w/ ENERGY STAR		51	37	9.13%	40	35,727	6.38%	38,162	2,613	100.0%	100.0%	100.0%	100.0%	40	38,162	2,613	116.0%	116.0%	116.0%	47	44,267	3,031
		0	0	9.13%	0	167	6.38%	178	14	100.0%	100.0%	100.0%	100.0%	0	178	14	100.0%	100.0%	100.0%	0	178	14
Insulation & Air Sealing		114	113	9.13%	124	54,202	6.38%	57,895	9,262	100.0%	100.0%	100.0%	100.0%	124	57,895	9,262	89.0%	89.0%	89.0%	111	51,527	8,243
Refrigerator & Freezer Recycling		262	167	9.13%	184	1,466,779	6.38%	1,566,729	N/A	100.0%	100.0%	100.0%	N/A	184	1,566,729	N/A	64.0%	64.0%	N/A	118	1,002,707	N/A
		302	193	9.13%	212	1,690,986	6.38%	1,806,215	N/A	100.0%	100.0%	100.0%	N/A	212	1,806,215	N/A	52.5%	52.5%	N/A	112	948,263	N/A
		13	11	9.13%	13	4,792	6.38%	5,119	N/A	100.0%	100.0%	100.0%	N/A	13	5,119	N/A	57.0%	57.0%	N/A	7	2,918	N/A
Residential Heating		586	444	9.13%	489	2,426,881	6.38%	2,592,255	27,961	100.0%	100.0%	100.0%	100.0%	489	2,592,255	27,961	94.0%	94.0%	86.0%	460	2,436,720	24,046
School Education Kits	11 Watt LED	1,177	148	9.13%	163	1,160,672	6.38%	1,239,763	N/A	90.3%	100.0%	100.0%	N/A	147	1,119,506	N/A	100.0%	100.0%	N/A	147	1,119,506	N/A
	9 Watt LED	2,501	315	9.13%	347	2,466,427	6.38%	2,634,496	N/A	91.3%	100.0%	100.0%	N/A	317	2,405,295	N/A	100.0%	100.0%	N/A	317	2,405,295	N/A
	Specialty LEDs	1,516	191	9.13%	210	1,494,663	6.38%	1,596,514	N/A	91.0%	100.0%	100.0%	N/A	191	1,452,827	N/A	100.0%	100.0%	N/A	191	1,452,827	N/A
	Showerhead	74	47	9.13%	52	644,777	6.38%	688,714	39,388	48.2%	100.0%	100.0%	100.0%	25	331,960	18,985	100.0%	100.0%	100.0%	25	331,960	18,985
	Kitchen Aerator	9	11	9.13%	12	75,686	6.38%	80,843	4,642	42.9%	100.0%	100.0%	100.0%	5	34,682	1,991	100.0%	100.0%	100.0%	5	34,682	1,991
	Bathroom Aerator 1.0gpm	9	12	9.13%	13	82,530	6.38%	88,154	5,042	44.3%	100.0%	100.0%	100.0%	6	39,052	2,233	100.0%	100.0%	100.0%	6	39,052	2,233
	Bathroom Aerator 0.5pgm	0	0	9.13%	0	0	6.38%	0	0	44.3%	100.0%	100.0%	100.0%	0	0	0	100.0%	100.0%	100.0%	0	0	0
Thermostat Optimization		341	259	9.13%	285	195,670	6.38%	209,004	6,163	100.0%	100.0%	100.0%	100.0%	285	209,004	6,163	100.0%	100.0%	100.0%	285	209,004	6,163
Water Heating		7	7	9.13%	7	45,285	6.38%	48,371	1,894	100.0%	100.0%	100.0%	100.0%	7	48,371	1,894	100.0%	100.0%	90.0%	7	48,371	1,704
Residential Program Total		**109,391**	**30,755**		**33,787**	**138,015,138**		**147,188,779**	**314,861**	**99.2%**	**99.9%**	**100.0%**	**100.0%**	**33,465**	**144,895,082**	**268,874**	**74.6%**	**69.6%**	**94.2%**	**24,974**	**100,832,600**	**253,198**
Low-Income Program																						
Energy Savings Kits	LED	1,264	159	9.13%	175	1,246,154	6.38%	1,331,070	N/A	78.3%	100.0%	100.0%	N/A	137	1,042,228	N/A	100.0%	100.0%	N/A	137	1,042,228	N/A
	Showerhead	31	19	9.13%	20	264,048	6.38%	282,041	9,851	70.2%	100.0%	100.0%	100.0%	14	197,993	6,916	100.0%	100.0%	100.0%	14	197,993	6,916
	Kitchen Aerator	3	5	9.13%	6	32,458	6.38%	34,670	1,264	62.8%	100.0%	100.0%	100.0%	4	21,773	794	100.0%	100.0%	100.0%	4	21,773	794
	Bathroom Aerator 1.0gpm	3	6	9.13%	6	33,433	6.38%	35,711	1,270	68.1%	100.0%	100.0%	100.0%	4	24,319	865	100.0%	100.0%	100.0%	4	24,319	865
Multifamily Weatherization		497	156	9.13%	172	1,788,776	6.38%	1,910,668	6,717	100.0%	100.0%	100.0%	100.0%	172	1,910,668	6,717	100.0%	100.0%	100.0%	172	1,910,668	6,717
Non-Profit		299	240	7.71%	260	906,171	5.33%	957,211	1,156	100.0%	100.0%	100.0%	100.0%	260	957,211	1,156	100.0%	100.0%	100.0%	260	957,211	1,156
Single-Family Weatherization		983	187	9.13%	205	1,197,871	6.38%	1,279,497	32,155	100.0%	100.0%	100.0%	100.0%	205	1,279,497	32,155	100.0%	100.0%	100.0%	205	1,279,497	32,155
Low-Income Program Total		**3,079**	**772**	**7.69%**	**845**	**5,468,911**		**5,830,869**	**52,412**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**797**	**5,433,690**	**48,601**	**100.0%**	**100.0%**	**100.0%**	**797**	**5,433,690**	**48,601**

Cost-Effectiveness

Cost-effectiveness ("cost-benefit") analyses represent the ratio of a product's benefits to its costs. By varying which benefits and costs are included in the calculation, the ratio can show how beneficial a DSM portfolio, program, product, or measure might be from a number of different perspectives (the Participant, Utility, Rate Impact, or Total Resource Cost). In Colorado, the Commission calls for utilities to use the MTRC test for evaluating the cost-effectiveness of DSM programs. The MTRC test takes into account system and other benefits, utility and participant costs, as well as environmental adders. These analyses are performed in a multi-step process that takes into account, among other factors, the:

- Savings achieved by the program;
- Participant and utility expenditures on the product, by budget category;
- Avoided costs for the product (discussed in more detail in the next section of this report);
- Incremental O&M, and capital spending and savings, of the product; and
- Lifetime, operating hours, coincidence of savings with summer peak, net-to-gross, transmission loss factors, and realization rates for the product.

The cost-benefit analysis is first determined at the measure level; individual measures are then combined to produce the product-level MTRC, and further the program-level MTRC. All products in the portfolio (electric and natural gas) are then combined to create the portfolio-level cost-benefit analysis, as provided in Tables 24 and 25 below.

The Company is reporting 2019 electric and natural gas portfolio MTRC test ratio results of 1.71 and 1.78, respectively. These results are shown in Table 24 and Table 25. The portfolio results are based upon electric net economic benefits of $147.3 million and natural gas net economic benefits $26.3 million. The Company has provided the cost-effectiveness results (MTRC test ratios) for electric and natural gas products in the following tables within this report:[23]

- Business Program: Tables 15a (electric) and 15b (gas)
- Residential Program: Tables 16a (electric) and 16b (gas)
- Low-Income Program: Tables 17a (electric) and 17b (gas)
- Indirect Program: Tables 18a (electric) and 18b (gas)
- Demand Response Program: Table 20 (electric)

[23] Sections 40-3.2-104(6)(d) and (e), C.R.S. require that the Company submit an annual report to the Commission that estimates the cost-effectiveness and net economic benefits of DSM programs, among other documentation.

Table 24: 2019 Electric DSM Portfolio Cost-Benefit Analysis (CBA)

PORTFOLIO TOTAL					2019 ELECTRIC		ACTUAL
2019 Net Present Cost Benefit Summary Analysis For All Participants					Input Summary and Totals		
			Rate	Modified	Program Inputs per Customer kW		
	Participant Test ($Total)	Utility Test ($Total)	Impact Test ($Total)	TRC Test ($Total)	Lifetime (Weighted on Generator kWh)	A	12.7 years
					Annual Hours	B	8760
					Gross Customer kW	C	1 kW
Benefits					Generator Peak Coincidence Factor	D	37.04%
					Gross Load Factor at Customer	E	23.22%
Avoided Revenue Requirements					Net-to-Gross (Energy)	F	78.2%
Generation Capacity	N/A	$89,582,203	$89,582,203	$89,582,203	Net-to-Gross (Demand)	G	81.1%
Transmission & Distribution Capacity	N/A	$9,806,328	$9,806,328	$9,806,328	Transmission Loss Factor (Energy)	H	6.309%
Marginal Energy	N/A	$141,748,709	$141,748,709	$141,748,709	Transmission Loss Factor (Demand)	I	8.027%
Avoided Emissions (CO2)	N/A	N/A	N/A	$0	**Installation Rate (Energy)**	**J**	**99.1%**
Subtotal				$241,137,240	**Installation Rate (Demand)**	**K**	**99.4%**
Non-Energy Benefits Adder (20.6%)				$49,680,889	MTRC Net Benefit (Cost)	**L**	$488
Subtotal	N/A	$241,137,240	$241,137,240	$290,818,129	MTRC Non-Energy Benefit Adder	**M**	$166
					Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.3247 kW
Other Benefits					Gross Annual kWh Saved at Customer	(B x E x C)	2,034 kWh
Bill Reduction - Electric	$799,754,467	N/A	N/A	N/A	Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,576 kWh
Participant Rebates and Incentives	$62,938,639	N/A	N/A	$62,938,639	Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,682 kWh
Incremental Capital Savings	$0	N/A	N/A	$0			
Incremental O&M Savings	$0	N/A	N/A	$0	**Program Summary All Participants**		
Subtotal	$862,693,105	N/A	N/A	$62,938,639	**Total Budget**	N	**$94,687,636**
					Gross kW Saved at Customer	O	299,789 kW
Total Benefits	$862,693,105	$241,137,240	$241,137,240	$353,756,768	**Net coincident kW Saved at Generator**	**(G x O x K) x D / (1 - I)**	**97,330 kW**
Costs					Gross Annual kWh Saved at Customer	(B x E x O)	609,816,993 kWh
					Gross Installed Annual kWh Saved at Customer	**(B x E x O x J)**	604,288,152 kWh
Utility Project Costs					Net Annual kWh Saved at Customer	(F x (B x E x O x J))	472,348,689 kWh
Program Planning & Design	N/A	$0	$0	$0	**Net Annual kWh Saved at Generator**	**((F x (B x E x O x J)) / (1 - H))**	**504,156,414 kWh**
Administration & Program Delivery	N/A	$25,297,967	$25,297,967	$25,297,967	**TRC Net Benefits with Adder**	(O x L)	**$146,392,306**
Advertising/Promotion/Customer Ed	N/A	$4,563,079	$4,563,079	$4,563,079	**TRC Net Benefits without Adder**	(O x (L - M))	**$96,711,417**
Participant Rebates and Incentives	N/A	$62,938,639	$62,938,639	$62,938,639			
Equipment & Installation	N/A	$179,766	$179,766	$179,766	**Utility Program Cost per kWh Lifetime**		**$0.0148**
Measurement and Verification	N/A	$1,708,186	$1,708,186	$1,708,186	**Utility Program Cost per kW at Gen**		**$973**
Subtotal	N/A	$94,687,636	$94,687,636	$94,687,636			
Utility Revenue Reduction							
Revenue Reduction - Electric	N/A	N/A	$636,212,208	N/A			
Subtotal	N/A	N/A	$636,212,208	N/A			
Participant Costs							
Incremental Capital Costs	$131,479,655	N/A	N/A	$112,026,048			
Incremental O&M Costs	$3,224,614	N/A	N/A	$650,777			
Subtotal	$134,704,269	N/A	N/A	$112,676,825			
Total Costs	$134,704,269	$94,687,636	$730,899,845	$207,364,462			
Net Benefit (Cost)	$727,988,837	$146,449,604	($489,762,604)	$146,392,306			
Benefit/Cost Ratio	6.40	2.55	0.33	1.71			

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Table 25: 2019 Natural Gas DSM Portfolio Cost-Benefit Analysis (CBA)

PORTFOLIO TOTAL						2019 GAS		ACTUAL
2019 Net Present Cost Benefit Summary Analysis For All Participants						**Input Summary and Totals**		
			Rate	Modified		**Program Assumptions:**		
	Participant Test	Utility Test	Impact Test	TRC Test		Lifetime (Weighted on Dth)	A	14.46 years
	($Total)	($Total)	($Total)	($Total)		Net-to-Gross (Weighted on Dth)	B	93.51%
Benefits						Install Rate (Weighted on Dth)	C	92.4%
Avoided Revenue Requirements						**Program Totals:**		
Commodity Cost Reduction	N/A	$21,885,373	$21,885,373	$21,885,373		**Total Dth/Yr Saved**	F	**649,298**
Variable O&M Savings	N/A	$288,836	$288,836	$288,836		Utility Costs per Net Dth/Yr	G	$22.29
Demand Savings	N/A	$2,329,842	$2,329,842	$2,329,842		Net Benefit (Cost) per Gross Dth/Yr	H	$40.44
Subtotal				$24,504,052		Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.94
Emissions Non-Energy Benefits Adder (23.7%)				$5,802,981		**Annual Dth/$M**	($1M / G)	**44,866**
Subtotal	N/A	$24,504,052	$24,504,052	$30,307,033		**Total Utility Budget**	(G x F)	**$14,471,991**
						Total MTRC Net Benefits with Adder	(F x H)	**$26,254,810**
Other Benefits						**Total MTRC Net Benefits without Adder**	(H - I) x F	**$20,451,829**
Bill Reduction - Gas	$46,488,012	N/A	N/A	N/A				
Participant Rebates and Incentives	$9,818,024	N/A	N/A	$9,818,024		**Utility Program Cost per Net Dth Lifetime**	(G / A)	**$1.54**
Incremental Capital Savings	$0	N/A	N/A	$0				
Incremental O&M Savings	$46,514,006	N/A	N/A	$19,898,972				
Subtotal	$102,820,042	N/A	N/A	$29,716,995				
Total Benefits	$102,820,042	$24,504,052	$24,504,052	$60,024,028				
Costs								
Utility Project Costs								
Program Planning & Design	N/A	$0	$0	$0				
Administration & Program Delivery	N/A	$3,420,569	$3,420,569	$3,420,569				
Advertising/Promotion/Customer Ed	N/A	$458,788	$458,788	$458,788				
Participant Rebates and Incentives	N/A	$9,818,024	$9,818,024	$9,818,024				
Equipment & Installation	N/A	$60,006	$60,006	$60,006				
Measurement and Verification	N/A	$714,605	$714,605	$714,605				
Subtotal	N/A	$14,471,991	$14,471,991	$14,471,991				
Utility Revenue Reduction								
Revenue Reduction - Gas	N/A	N/A	$41,883,426	N/A				
Subtotal	N/A	N/A	$41,883,426	N/A				
Participant Costs								
Incremental Capital Costs	$20,724,284	N/A	N/A	$19,297,227				
Incremental O&M Costs	$0	N/A	N/A	$0				
Subtotal	$20,724,284	N/A	N/A	$19,297,227				
Total Costs	$20,724,284	$14,471,991	$56,355,417	$33,769,218				
Net Benefit (Cost)	$82,095,757	$10,032,060	($31,851,366)	$26,254,810				
Benefit/Cost Ratio	4.96	1.69	0.43	1.78				

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Appendix A: Avoided Cost Assumptions

The following sections summarize the avoided cost assumptions Public Service has made in order to perform the cost-effectiveness tests for electric and gas programs, and for which the Company asked approval of and received for use in the status report and incentives calculations for 2019 calendar year achievements.

A. <u>2019 Electric Programs (January 1, 2019 through June 30, 2019)</u>

In order to determine the cost-effectiveness of its electric energy efficiency and load management programs from January 1, 2019 through June 30, 2019, Public Service must first calculate the avoided generation, transmission, distribution, and marginal energy costs these programs avoid. Below are tables showing the avoided cost assumptions used in this plan.

1. **Estimated Annual Avoided Generation Capacity Costs (*Source:* Public Service Resource Planning)**
   Capacity costs reflect current generic capacity cost estimates used in Phase I of the Public Service Company of Colorado's 2016 Electric Resource Plan (Proceeding No. 16A-0396E) for a gas-fired combustion turbine ("CT") referred to as a "Large CT" in compliance with paragraph 96 in Decision No. C14-0731 (Proceeding No. 13A-0686EG). These values exclude the ancillary services adjustments per paragraph 97 in this same decision.

	CT		CT
Year	**Gen Capacity $/kw-yr**	**Year**	**Gen Capacity $/kW-yr**
2019	$105.24	**2029**	$132.24
2020	$107.64	**2030**	$135.24
2021	$110.16	**2031**	$138.36
2022	$112.68	**2032**	$141.60
2023	$115.32	**2033**	$144.84
2024	$117.96	**2034**	$148.20
2025	$120.72	**2035**	$151.68
2026	$123.48	**2036**	$155.16
2027	$123.48	**2037**	$158.73
2028	$129.24	**2038**	$162.40

2. **Estimated Annual Avoided Transmission and Distribution ("T&D") Capacity Costs (*Source:* Public Service Resource Planning)**
   Decision No. C14-0731 within Proceeding No. 13A-0686EG required the Company to "…study the avoided transmission and distribution capacity costs and propose values in its DSM Biennial Plan for 2015 through 2016."[24] Additionally, consistent with Decision No. C15-0735, the Company undertook a study, specific to its own territory, utilizing the system planning approach to estimate T&D costs. The study is included as Attachment SMW-6 to the Direct Testimony of

[24] *See* Decision No. C14-0731 at ¶97.

Shawn M. White accompanying the Plan within Proceeding No. 13A-0686EG. The table below documents the annual values of avoided T&D costs from this study:

	Avoided Capacity $/kW-yr				Avoided Capacity $/kW-yr		
Year	**Transmission**	**Distribution**	**T&D**	**Year**	**Transmission**	**Distribution**	**T&D**
2019	$8.54	$2.32	$10.86	**2019**	$10.41	$2.83	$13.24
2020	$8.71	$2.37	$11.08	**2020**	$10.62	$2.89	$13.51
2021	$8.88	$2.42	$11.30	**2021**	$10.83	$2.95	$13.78
2022	$9.06	$2.47	$11.53	**2022**	$11.05	$3.01	$14.05
2023	$9.24	$2.51	$11.76	**2023**	$11.27	$3.07	$14.33
2024	$9.43	$2.57	$11.99	**2024**	$11.49	$3.13	$14.62
2025	$9.62	$2.62	$12.23	**2025**	$11.72	$3.19	$14.91
2026	$9.81	$2.67	$12.48	**2026**	$11.96	$3.25	$15.21
2027	$10.01	$2.72	$12.73	**2027**	$12.20	$3.32	$15.51
2028	$10.21	$2.78	$12.98	**2028**	$12.44	$3.38	$15.82

3. Estimated Annual Avoided Energy Costs (*Source:* Public Service Resource Planning Analytics)

In order to determine avoided energy costs, the Company's Resource Planning Analytics group produced two Strategist runs, one with and one without the current approved goal level of DSM of 400 GWh/yr expected to be acquired from January 1, 2017 through 2037. These runs simulated the economic dispatch of the Company's generation fleet using assumptions regarding must-run plants, must-take resources, minimum and maximum generator output capability, unit heat rates, and unit fuel prices. Consistent with the method proposed by the Company in Proceeding No. 13A-0686EG, the avoided energy costs attributable to future DSM were determined using a comparison of the annual total system variable costs (with and without future DSM), to the annual total energy served (MWh) with and without future DSM. Including variable O&M, fuel (including a gas price volatility mitigation adder ("GPVM"), and dump energy.

Simple-Average Hourly DSM Avoided Energy			
Year	**$/MWh**	**Year**	**$/MWh**
2019	$28.86	**2029**	$48.87
2020	$30.52	**2030**	$40.79
2021	$36.43	**2031**	$40.82
2022	$39.09	**2032**	$41.69
2023	$41.10	**2033**	$41.60
2024	$42.41	**2034**	$45.88
2025	$43.92	**2035**	$49.34
2026	$45.86	**2036**	$50.22
2027	$48.15	**2037**	$51.98
2028	$47.46	**2038**	$52.06

4. Estimated Annual Avoided Emissions Costs (includes CO_2) (*Source:* Public Service Resource Planning)

In the Public Services Company of Colorado's 2016 Electric Resource Plan within Proceeding No. 16A-0396E, the base-case assumed zero cost for CO2 emissions. This value is set to $0 for all years.

B. <u>2019 Electric Programs (July 1, 2019 through December 31, 2019)</u>

In order to determine the cost-effectiveness of its electric energy efficiency and load management programs from July 1, 2019 through December 31, 2019, Public Service must first calculate the avoided generation, transmission, distribution, and marginal energy costs these programs avoid. Below are tables showing the avoided cost assumptions used in this plan.

1. Estimated Annual Avoided Generation Capacity Costs (*Source:* Public Service Resource Planning)

Capacity costs reflect the generic capacity cost estimates used in Phase I and Phase II of the Public Service Company of Colorado's 2016 Electric Resource Plan in Proceeding No. 16A-0396E for a gas-fired CT referred to as a "Large or Generic CT" in compliance with the Non-Unanimous Settlement Agreement[25] within Proceeding No. 17A-0462EG.

	CT		CT
Year	**Gen Capacity $/kw-yr**	**Year**	**Gen Capacity $/kW-yr**
2019	$88.47	**2029**	$107.85
2020	$90.24	**2030**	$110.00
2021	$92.05	**2031**	$112.20
2022	$93.89	**2032**	$114.44
2023	$95.76	**2033**	$116.73
2024	$97.68	**2034**	$119.07
2025	$99.63	**2035**	$121.45
2026	$101.62	**2036**	$123.88
2027	$103.66	**2037**	$126.36
2028	$105.73	**2038**	$128.88

2. Estimated Annual Avoided Transmission and Distribution ("T&D") Capacity Costs (*Source:* Public Service Resource Planning)

Decision No. C14-0731 within Proceeding No. 13A-0686EG required the Company to "…study the avoided transmission and distribution capacity costs and propose values in its DSM Biennial Plan for 2015 through 2016."[26] Consistent with the Commission's decision in C15-0735, the Company undertook a study, specific to its own territory, utilizing the system planning approach to estimate T&D costs. The study is included as Attachment SMW-6 to the Direct Testimony of

[25] Approved by Decision No. C18-0417 at ¶104.
[26] *See* Decision No. C14-0731 at ¶97.

Shawn M. White in Proceeding No. 16A-0512EG and affirmed in Proceeding No. 17A-0462EG.[27] The table below documents the annual values of avoided T&D costs from this study:

	Avoided Capacity $/kW-yr				Avoided Capacity $/kW-yr		
Year	**Transmission**	**Distribution**	**T&D**	**Year**	**Transmission**	**Distribution**	**T&D**
2019	$8.71	$2.37	$11.08	**2019**	$10.62	$2.89	$13.51
2020	$8.88	$2.42	$11.30	**2020**	$10.83	$2.95	$13.78
2021	$9.06	$2.47	$11.53	**2021**	$11.05	$3.01	$14.05
2022	$9.24	$2.51	$11.76	**2022**	$11.27	$3.07	$14.33
2023	$9.43	$2.57	$11.99	**2023**	$11.49	$3.13	$14.62
2024	$9.62	$2.62	$12.23	**2024**	$11.72	$3.19	$14.91
2025	$9.81	$2.67	$12.48	**2025**	$11.96	$3.25	$15.21
2026	$10.01	$2.72	$12.73	**2026**	$12.20	$3.32	$15.51
2027	$10.21	$2.78	$12.98	**2027**	$12.44	$3.38	$15.82
2028	$10.41	$2.83	$13.24	**2028**	$12.69	$3.45	$16.14

4. Estimated Annual Avoided Energy Costs (*Source:* Public Service Generation Modelling Services)

In order to determine avoided energy costs, the Company's Generation Modelling Services group produced a PLEXOS run to produce hourly marginal energy estimates. These runs follow the provisions stated in the settlement agreement in Proceeding No. 17A-0462EG. For each individual measure in the Plan, an hourly load shape is assigned, as documented in Appendix G of the 2019/2020 DSM Plan. The estimated annual avoided energy resulting from the product of hourly marginal energy estimates and the hourly load shape is used to determine the estimate annual avoided energy costs for each measure.

Simple-Average Hourly DSM Avoided Energy			
Year	**$/MWh**	**Year**	**$/MWh**
2019	$18.06	**2029**	$34.49
2020	$17.91	**2030**	$36.22
2021	$17.93	**2031**	$39.18
2022	$19.56	**2032**	$41.84
2023	$21.53	**2033**	$45.09
2024	$24.96	**2034**	$48.49
2025	$25.92	**2035**	$52.34
2026	$29.17	**2036**	$56.55
2027	$30.81	**2037**	$61.25
2028	$32.45	**2038**	$66.47

[27] *See* Decision No. C18-0417 at Ordering ¶104.

4. **Estimated Annual Avoided Emissions Costs (includes CO_2) (*Source:* Public Service Resource Planning)**
   In Public Services 2016 Electric Resource Plan within Proceeding No. 16A-0396E, the base-case assumed zero cost for CO2 emissions. This value is set to $0 for all years.

C. <u>2019 Natural Gas Programs (January 1, 2019 through June 30, 2019)</u>

In order to determine the cost-effectiveness of its gas programs from January 1, 2019 through June 30, 2019, Public Service must calculate the avoided commodity cost of gas, avoided capacity costs, and any avoided variable O&M costs associated with gas energy efficiency savings. Below are the avoided cost assumptions used for this time period.

1. **Estimated Commodity Cost of Gas (*Source:* Public Service Gas Resource Planning)**
   The following table outlines the gas price forecast as approved in Proceeding No. 16A-0512EG.

	$/Dth			$/Dth	
Year	**Residential**	**Business**	**Year**	**Residential**	**Business**
2019	$2.75	$2.74	**2029**	$5.29	$5.28
2020	$2.98	$2.96	**2030**	$5.52	$5.51
2021	$3.57	$3.55	**2031**	$5.68	$5.66
2022	$4.03	$4.01	**2032**	$5.93	$5.92
2023	$4.21	$4.19	**2033**	$6.19	$6.18
2024	$4.38	$4.37	**2034**	$6.38	$6.37
2025	$4.50	$4.49	**2035**	$6.55	$6.53
2026	$4.65	$4.64	**2036**	$6.70	$6.69
2027	$4.81	$4.80	**2037**	$6.84	$6.83
2028	$5.04	$5.03	**2038**	$6.97	$6.96

2. **Estimated Avoided Variable O&M Costs (*Source:* Public Service Pricing and Planning)**
   The following table outlines the gas price forecast as approved in Proceeding No. 16A-0512EG.

Year	$/Dth
2019-2038	$0.05

3. **Estimated Annual Avoided Reservation Costs (used to estimate capacity savings – Peak Day Dth savings estimated as 1 percent of annual Dth savings) (*Source:* Public Service Gas Resource Planning)**
   The following table outlines the gas price forecast as approved in Proceeding No. 16A-0512EG.

Year	$/Dth
2019-2038	$46.67

D. 2019 Natural Gas Programs (July 1, 2019 through December 31, 2019)

In order to determine the cost-effectiveness of its gas programs from July 1, 2019 through December 31, 2019, Public Service must calculate the avoided commodity cost of gas, avoided capacity costs, and any avoided variable O&M costs associated with gas energy efficiency savings. Below are the avoided cost assumptions used for this time period.

1. Estimated Commodity Cost of Gas (*Source:* Public Service Gas Resource Planning)
The following table outlines the gas price forecast as approved in Proceeding No. 18A-0606EG.

	$/Dth			$/Dth	
Year	**Residential**	**Business**	**Year**	**Residential**	**Business**
2019	$2.17	$2.15	**2029**	$4.28	$4.26
2020	$2.57	$2.56	**2030**	$4.44	$4.43
2021	$2.79	$2.77	**2031**	$4.58	$4.57
2022	$2.99	$2.98	**2032**	$4.79	$4.78
2023	$3.21	$3.20	**2033**	$4.96	$4.95
2024	$3.45	$3.44	**2034**	$5.10	$5.09
2025	$3.59	$3.58	**2035**	$5.28	$5.26
2026	$3.73	$3.72	**2036**	$5.48	$5.46
2027	$3.89	$3.88	**2037**	$5.58	$5.56
2028	$4.10	$4.09	**2038**	$5.75	$5.73

2. Estimated Avoided Variable O&M Costs (*Source:* Public Service Pricing and Planning)
The following table outlines the gas price forecast as approved in Proceeding No. 18A-0606EG.

Year	$/Dth
2019-2038	$0.05

3. Estimated Annual Avoided Reservation Costs (used to estimate capacity savings – Peak Day Dth savings estimated as 1 percent of annual Dth savings) (*Source:* Public Service Gas Resource Planning)
The following table outlines the gas price forecast as approved in Proceeding No. 18A-0606EG.

Year	$/Dth
2019-2038	$35.02

Appendix B: Cost-Benefit Analyses

The following section provides the cost-effectiveness analyses for all products and programs included in the Company's 2019 DSM Plan.

PORTFOLIO TOTAL **2019 ELECTRIC** **ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$89,582,203	$89,582,203	$89,582,203
Transmission & Distribution Capac	N/A	$9,806,328	$9,806,328	$9,806,328
Marginal Energy	N/A	$141,748,709	$141,748,709	$141,748,709
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$241,137,240
Non-Energy Benefits Adder (20.6%)				$49,680,889
Subtotal	N/A	$241,137,240	$241,137,240	$290,818,129
Other Benefits				
Bill Reduction - Electric	$799,754,467	N/A	N/A	N/A
Participant Rebates and Incentives	$62,938,639	N/A	N/A	$62,938,639
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$862,693,105	N/A	N/A	$62,938,639
Total Benefits	$862,693,105	$241,137,240	$241,137,240	$353,756,768
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$25,297,967	$25,297,967	$25,297,967
Advertising/Promotion/Customer Ed	N/A	$4,563,079	$4,563,079	$4,563,079
Participant Rebates and Incentives	N/A	$62,938,639	$62,938,639	$62,938,639
Equipment & Installation	N/A	$179,766	$179,766	$179,766
Measurement and Verification	N/A	$1,708,186	$1,708,186	$1,708,186
Subtotal	N/A	$94,687,636	$94,687,636	$94,687,636
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$636,212,208	N/A
Subtotal	N/A	N/A	$636,212,208	N/A
Participant Costs				
Incremental Capital Costs	$131,479,655	N/A	N/A	$112,026,048
Incremental O&M Costs	$3,224,614	N/A	N/A	$650,777
Subtotal	$134,704,269	N/A	N/A	$112,676,825
Total Costs	$134,704,269	$94,687,636	$730,899,845	$207,364,462
Net Benefit (Cost)	$727,988,837	$146,449,604	($489,762,604)	$146,392,306
Benefit/Cost Ratio	6.40	2.55	0.33	1.71

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	12.7 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	37.04%
Gross Load Factor at Customer	E	23.22%
Net-to-Gross (Energy)	F	78.2%
Net-to-Gross (Demand)	G	81.1%
Transmission Loss Factor (Energy)	H	6.309%
Transmission Loss Factor (Demand)	I	8.027%
Installation Rate (Energy)	**J**	**99.1%**
Installation Rate (Demand)	**K**	**99.4%**
MTRC Net Benefit (Cost)	**L**	$488
MTRC Non-Energy Benefit Adder	**M**	$166
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.3247 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,034 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,576 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,682 kWh

Program Summary All Participants		
Total Budget	N	**$94,687,636**
Gross kW Saved at Customer	O	299,789 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**97,330 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	609,816,993 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	604,288,152 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	472,348,689 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**504,156,414 kWh**
TRC Net Benefits with Adder	(O x L)	**$146,392,306**
TRC Net Benefits without Adder	(O x (L - M))	**$96,711,417**
Utility Program Cost per kWh Lifetime		**$0.0148**
Utility Program Cost per kW at Gen		**$973**

EE PORTFOLIO TOTAL — 2019 ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$86,024,308	$86,024,308	$86,024,308
Transmission & Distribution Capaci	N/A	$9,411,752	$9,411,752	$9,411,752
Marginal Energy	N/A	$141,744,120	$141,744,120	$141,744,120
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$237,180,179
Non-Energy Benefits Adder (20.6%)				$48,889,457
Subtotal	N/A	$237,180,179	$237,180,179	$286,069,637
Other Benefits				
Bill Reduction - Electric	$799,715,939	N/A	N/A	N/A
Participant Rebates and Incentives	$54,618,619	N/A	N/A	$54,618,619
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$854,334,558	N/A	N/A	$54,618,619
Total Benefits	$854,334,558	$237,180,179	$237,180,179	$340,688,256
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$22,398,302	$22,398,302	$22,398,302
Advertising/Promotion/Customer Ed	N/A	$3,591,051	$3,591,051	$3,591,051
Participant Rebates and Incentives	N/A	$54,618,619	$54,618,619	$54,618,619
Equipment & Installation	N/A	$179,766	$179,766	$179,766
Measurement and Verification	N/A	$1,482,063	$1,482,063	$1,482,063
Subtotal	N/A	$82,269,801	$82,269,801	$82,269,801
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$636,173,680	N/A
Subtotal	N/A	N/A	$636,173,680	N/A
Participant Costs				
Incremental Capital Costs	$131,461,880	N/A	N/A	$112,008,273
Incremental O&M Costs	$3,224,614	N/A	N/A	$650,777
Subtotal	$134,686,494	N/A	N/A	$112,659,050
Total Costs	$134,686,494	$82,269,801	$718,443,481	$194,928,851
Net Benefit (Cost)	$719,648,064	$154,910,378	($481,263,302)	$145,759,405
Benefit/Cost Ratio	6.34	2.88	0.33	1.75

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	12.7 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	37.04%
Gross Load Factor at Customer	E	23.95%
Net-to-Gross (Energy)	F	78.2%
Net-to-Gross (Demand)	G	80.5%
Transmission Loss Factor (Energy)	H	6.309%
Transmission Loss Factor (Demand)	I	8.018%
Installation Rate (Energy)	**J**	**99.1%**
Installation Rate (Demand)	**K**	**99.4%**
MTRC Net Benefit (Cost)	**L**	$502
MTRC Non-Energy Benefit Adder	**M**	$168
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.3222 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,098 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,625 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,735 kWh

Program Summary All Participants		
Total Budget	N	**$82,269,801**
Gross kW Saved at Customer	O	290,615 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**93,641 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	609,803,477 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	604,274,600 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	472,335,146 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**504,141,862 kWh**
TRC Net Benefits with Adder	(O x L)	**$145,759,405**
TRC Net Benefits without Adder	(O x (L - M))	**$96,869,947**
Utility Program Cost per kWh Lifetime		**$0.0129**
Utility Program Cost per kW at Gen		**$879**

BUSINESS PROGRAM TOTAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$60,926,671	$60,926,671	$60,926,671
Transmission & Distribution Capac	N/A	$6,518,645	$6,518,645	$6,518,645
Marginal Energy	N/A	$113,099,910	$113,099,910	$113,099,910
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$180,545,226
Non-Energy Benefits Adder (20.2%)				$36,542,563
Subtotal	N/A	$180,545,226	$180,545,226	$217,087,790
Other Benefits				
Bill Reduction - Electric	$629,866,486	N/A	N/A	N/A
Participant Rebates and Incentives	$36,842,646	N/A	N/A	$36,842,646
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$209,001
Subtotal	$666,709,131	N/A	N/A	$37,051,647
Total Benefits	$666,709,131	$180,545,226	$180,545,226	$254,139,437
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$11,756,624	$11,756,624	$11,756,624
Advertising/Promotion/Customer Ed	N/A	$705,523	$705,523	$705,523
Participant Rebates and Incentives	N/A	$36,842,646	$36,842,646	$36,842,646
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$664,728	$664,728	$664,728
Subtotal	N/A	$49,969,520	$49,969,520	$49,969,520
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$518,193,139	N/A
Subtotal	N/A	N/A	$518,193,139	N/A
Participant Costs				
Incremental Capital Costs	$121,444,205	N/A	N/A	$102,990,980
Incremental O&M Costs	$2,584,016	N/A	N/A	$0
Subtotal	$124,028,221	N/A	N/A	$102,990,980
Total Costs	$124,028,221	$49,969,520	$568,162,659	$152,960,500
Net Benefit (Cost)	$542,680,910	$130,575,706	($387,617,432)	$101,178,936
Benefit/Cost Ratio	5.38	3.61	0.32	1.66

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	66.90%
Gross Load Factor at Customer	E	46.20%
Net-to-Gross (Energy)	F	84.4%
Net-to-Gross (Demand)	G	85.9%
Transmission Loss Factor (Energy)	H	6.015%
Transmission Loss Factor (Demand)	I	7.063%
Installation Rate (Energy)	**J**	**99.8%**
Installation Rate (Demand)	**K**	**99.8%**
MTRC Net Benefit (Cost)	**L**	$1,128
MTRC Non-Energy Benefit Adder	**M**	$407
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6173 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,047 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,411 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,629 kWh

Program Summary All Participants

Total Budget	N	**$49,969,520**
Gross kW Saved at Customer	O	89,713 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**55,377 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	363,110,935 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	362,404,054 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	306,010,613 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**325,595,292 kWh**
TRC Net Benefits with Adder	(O x L)	**$101,178,936**
TRC Net Benefits without Adder	(O x (L - M))	**$64,636,373**
Utility Program Cost per kWh Lifetime		**$0.0092**
Utility Program Cost per kW at Gen		**$902**

RESIDENTIAL PROGRAM TOTAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$24,127,083	$24,127,083	$24,127,083
Transmission & Distribution Capac	N/A	$2,778,769	$2,778,769	$2,778,769
Marginal Energy	N/A	$26,768,665	$26,768,665	$26,768,665
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$53,674,517
Non-Energy Benefits Adder (20.2%)				$10,846,298
Subtotal	N/A	$53,674,517	$53,674,517	$64,520,815
Other Benefits				
Bill Reduction - Electric	$162,351,742	N/A	N/A	N/A
Participant Rebates and Incentives	$14,361,194	N/A	N/A	$14,361,194
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$176,712,937	N/A	N/A	$14,361,194
Total Benefits	$176,712,937	$53,674,517	$53,674,517	$78,882,010
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$7,126,489	$7,126,489	$7,126,489
Advertising/Promotion/Customer Ed	N/A	$2,176,257	$2,176,257	$2,176,257
Participant Rebates and Incentives	N/A	$14,361,194	$14,361,194	$14,361,194
Equipment & Installation	N/A	$179,766	$179,766	$179,766
Measurement and Verification	N/A	$195,774	$195,774	$195,774
Subtotal	N/A	$24,039,481	$24,039,481	$24,039,481
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$110,882,891	N/A
Subtotal	N/A	N/A	$110,882,891	N/A
Participant Costs				
Incremental Capital Costs	$6,687,511	N/A	N/A	$5,687,129
Incremental O&M Costs	$833,861	N/A	N/A	$992,152
Subtotal	$7,521,372	N/A	N/A	$6,679,281
Total Costs	$7,521,372	$24,039,481	$134,922,372	$30,718,761
Net Benefit (Cost)	$169,191,565	$29,635,036	($81,247,855)	$48,163,248
Benefit/Cost Ratio	23.49	2.23	0.40	2.57

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	6.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	23.93%
Gross Load Factor at Customer	E	13.90%
Net-to-Gross (Energy)	F	68.0%
Net-to-Gross (Demand)	G	73.3%
Transmission Loss Factor (Energy)	H	6.746%
Transmission Loss Factor (Demand)	I	8.436%
Installation Rate (Energy)	**J**	**98.1%**
Installation Rate (Demand)	**K**	**98.9%**
MTRC Net Benefit (Cost)	**L**	$245
MTRC Non-Energy Benefit Adder	**M**	$55
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.1894 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,217 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	812 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	871 kWh

Program Summary All Participants

Total Budget	N	**$24,039,481**
Gross kW Saved at Customer	O	196,355 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**37,191 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	239,059,867 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	234,491,797 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	159,490,764 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**171,027,524 kWh**
TRC Net Benefits with Adder	(O x L)	**$48,163,248**
TRC Net Benefits without Adder	(O x (L - M))	**$37,316,950**
Utility Program Cost per kWh Lifetime		**$0.0208**
Utility Program Cost per kW at Gen		**$646**

LOW-INCOME PROGRAM TOTAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$970,553	$970,553	$970,553
Transmission & Distribution Capac	N/A	$114,338	$114,338	$114,338
Marginal Energy	N/A	$1,875,545	$1,875,545	$1,875,545
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$2,960,436
Non-Energy Benefits Adder (50.7%)				$1,500,596
Subtotal	N/A	$2,960,436	$2,960,436	$4,461,032
Other Benefits				
Bill Reduction - Electric	$7,497,711	N/A	N/A	N/A
Participant Rebates and Incentives	$3,004,440	N/A	N/A	$3,004,440
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$193,263	N/A	N/A	$132,373
Subtotal	$10,695,414	N/A	N/A	$3,136,813
Total Benefits	$10,695,414	$2,960,436	$2,960,436	$7,597,845
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$529,935	$529,935	$529,935
Advertising/Promotion/Customer Ed	N/A	$225,075	$225,075	$225,075
Participant Rebates and Incentives	N/A	$3,004,440	$3,004,440	$3,004,440
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$95,698	$95,698	$95,698
Subtotal	N/A	$3,855,148	$3,855,148	$3,855,148
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$7,097,650	N/A
Subtotal	N/A	N/A	$7,097,650	N/A
Participant Costs				
Incremental Capital Costs	$3,330,164	N/A	N/A	$3,330,164
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,330,164	N/A	N/A	$3,330,164
Total Costs	$3,330,164	$3,855,148	$10,952,798	$7,185,313
Net Benefit (Cost)	$7,365,250	($894,713)	($7,992,363)	$412,532
Benefit/Cost Ratio	3.21	0.77	0.27	1.06

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	12.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	22.99%
Gross Load Factor at Customer	E	19.16%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.519%
Transmission Loss Factor (Demand)	I	8.506%
Installation Rate (Energy)	**J**	**92.1%**
Installation Rate (Demand)	**K**	**93.9%**
MTRC Net Benefit (Cost)	**L**	$91
MTRC Non-Energy Benefit Adder	**M**	$330
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.2360 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,679 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,546 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,654 kWh

Program Summary All Participants

Total Budget	N	**$3,855,148**
Gross kW Saved at Customer	O	4,547 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**1,073 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	7,632,675 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	7,028,901 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	7,028,901 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**7,519,046 kWh**
TRC Net Benefits with Adder	(O x L)	**$412,532**
TRC Net Benefits without Adder	(O x (L - M))	**($1,088,063)**
Utility Program Cost per kWh Lifetime		**$0.0408**
Utility Program Cost per kW at Gen		**$3,593**

DR PORTFOLIO TOTAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$3,557,895	$3,557,895	$3,557,895
Transmission & Distribution Capaci	N/A	$394,576	$394,576	$394,576
Marginal Energy	N/A	$4,589	$4,589	$4,589
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,957,061
Non-Energy Benefits Adder (20%)				$791,431
Subtotal	N/A	$3,957,061	$3,957,061	$4,748,492
Other Benefits				
Bill Reduction - Electric	$38,528	N/A	N/A	N/A
Participant Rebates and Incentives	$8,320,019	N/A	N/A	$8,320,019
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,358,548	N/A	N/A	$8,320,019
Total Benefits	$8,358,548	$3,957,061	$3,957,061	$13,068,512
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,899,665	$2,899,665	$2,899,665
Advertising/Promotion/Customer Ed	N/A	$972,028	$972,028	$972,028
Participant Rebates and Incentives	N/A	$8,320,019	$8,320,019	$8,320,019
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$226,123	$226,123	$226,123
Subtotal	N/A	$12,417,836	$12,417,836	$12,417,836
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$38,528	N/A
Subtotal	N/A	N/A	$38,528	N/A
Participant Costs				
Incremental Capital Costs	$17,775	N/A	N/A	$17,775
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$17,775	N/A	N/A	$17,775
Total Costs	$17,775	$12,417,836	$12,456,364	$12,435,611
Net Benefit (Cost)	$8,340,773	($8,460,774)	($8,499,303)	$632,901
Benefit/Cost Ratio	470.24	0.32	0.32	1.05

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	13.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	36.86%
Gross Load Factor at Customer	E	0.02%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.118%
Transmission Loss Factor (Demand)	I	8.328%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$69
MTRC Non-Energy Benefit Adder	**M**	$86
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4021 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2 kWh

Program Summary All Participants

Total Budget	N	**$12,417,836**
Gross kW Saved at Customer	O	9,174 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**3,689 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	13,516 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	13,516 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	13,516 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**14,552 kWh**
TRC Net Benefits with Adder	(O x L)	**$632,901**
TRC Net Benefits without Adder	(O x (L - M))	**($158,530)**
Utility Program Cost per kWh Lifetime		**$63.2765**
Utility Program Cost per kW at Gen		**$3,367**

DR PROGRAM TOTAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$3,557,895	$3,557,895	$3,557,895
Transmission & Distribution Capaci	N/A	$394,576	$394,576	$394,576
Marginal Energy	N/A	$4,589	$4,589	$4,589
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,957,061
Non-Energy Benefits Adder (20%)				$791,431
Subtotal	N/A	$3,957,061	$3,957,061	$4,748,492
Other Benefits				
Bill Reduction - Electric	$38,528	N/A	N/A	N/A
Participant Rebates and Incentives	$8,320,019	N/A	N/A	$8,320,019
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,358,548	N/A	N/A	$8,320,019
Total Benefits	$8,358,548	$3,957,061	$3,957,061	$13,068,512
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,460,434	$2,460,434	$2,460,434
Advertising/Promotion/Customer Ed	N/A	$972,028	$972,028	$972,028
Participant Rebates and Incentives	N/A	$8,320,019	$8,320,019	$8,320,019
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$29,103	$29,103	$29,103
Subtotal	N/A	$11,781,584	$11,781,584	$11,781,584
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$38,528	N/A
Subtotal	N/A	N/A	$38,528	N/A
Participant Costs				
Incremental Capital Costs	$17,775	N/A	N/A	$17,775
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$17,775	N/A	N/A	$17,775
Total Costs	$17,775	$11,781,584	$11,820,113	$11,799,359
Net Benefit (Cost)	$8,340,773	($7,824,523)	($7,863,051)	$1,269,152
Benefit/Cost Ratio	470.24	0.34	0.33	1.11

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	13.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	36.86%
Gross Load Factor at Customer	E	0.02%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.118%
Transmission Loss Factor (Demand)	I	8.328%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$138
MTRC Non-Energy Benefit Adder	**M**	$86
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4021 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2 kWh

Program Summary All Participants		
Total Budget	N	**$11,781,584**
Gross kW Saved at Customer	O	9,174 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**3,689 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	13,516 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	13,516 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	13,516 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**14,552 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,269,152**
TRC Net Benefits without Adder	(O x (L - M))	**$477,721**
Utility Program Cost per kWh Lifetime		**$60.0344**
Utility Program Cost per kW at Gen		**$3,194**

COMMERCIAL REFRIGERATION EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$943,516	$943,516	$943,516
Transmission & Distribution Capac	N/A	$101,604	$101,604	$101,604
Marginal Energy	N/A	$2,401,261	$2,401,261	$2,401,261
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,446,381
Non-Energy Benefits Adder (20.3%)				$698,022
Subtotal	N/A	$3,446,381	$3,446,381	$4,144,403
Other Benefits				
Bill Reduction - Electric	$5,157,214	N/A	N/A	N/A
Participant Rebates and Incentives	$610,950	N/A	N/A	$610,950
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$14,852	N/A	N/A	$14,852
Subtotal	$5,783,016	N/A	N/A	$625,802
Total Benefits	$5,783,016	$3,446,381	$3,446,381	$4,770,205
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$759,733	$759,733	$759,733
Advertising/Promotion/Customer Ed	N/A	$374	$374	$374
Participant Rebates and Incentives	N/A	$610,950	$610,950	$610,950
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$14,550	$14,550	$14,550
Subtotal	N/A	$1,385,606	$1,385,606	$1,385,606
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$5,157,214	N/A
Subtotal	N/A	N/A	$5,157,214	N/A
Participant Costs				
Incremental Capital Costs	$3,245,047	N/A	N/A	$3,245,047
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,245,047	N/A	N/A	$3,245,047
Total Costs	$3,245,047	$1,385,606	$6,542,820	$4,630,653
Net Benefit (Cost)	$2,537,969	$2,060,775	($3,096,439)	$139,551
Benefit/Cost Ratio	1.78	2.49	0.53	1.03

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	12.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	77.68%
Gross Load Factor at Customer	E	74.90%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.152%
Transmission Loss Factor (Demand)	I	6.804%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$120
MTRC Non-Energy Benefit Adder	**M**	$601
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.8335 kW
Gross Annual kWh Saved at Customer	(B x E x C)	6,561 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	6,561 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	6,991 kWh

Program Summary All Participants		
Total Budget	N	**$1,385,606**
Gross kW Saved at Customer	O	1,161 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**968 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	7,620,363 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	7,620,363 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	7,620,363 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**8,119,905 kWh**
TRC Net Benefits with Adder	(O x L)	**$139,551**
TRC Net Benefits without Adder	(O x (L - M))	**($558,470)**
Utility Program Cost per kWh Lifetime		**$0.0137**
Utility Program Cost per kW at Gen		**$1,431**

COMPRESSED AIR EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$355,772	$355,772	$355,772
Transmission & Distribution Capac	N/A	$38,698	$38,698	$38,698
Marginal Energy	N/A	$631,574	$631,574	$631,574
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$1,026,044
Non-Energy Benefits Adder (20.2%)				$207,667
Subtotal	N/A	$1,026,044	$1,026,044	$1,233,711
Other Benefits				
Bill Reduction - Electric	$1,820,899	N/A	N/A	N/A
Participant Rebates and Incentives	$285,087	N/A	N/A	$285,087
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$2,657	N/A	N/A	$1,940
Subtotal	$2,108,642	N/A	N/A	$287,026
Total Benefits	$2,108,642	$1,026,044	$1,026,044	$1,520,737
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$170,575	$170,575	$170,575
Advertising/Promotion/Customer Ed	N/A	$36	$36	$36
Participant Rebates and Incentives	N/A	$285,087	$285,087	$285,087
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$4,071	$4,071	$4,071
Subtotal	N/A	$459,769	$459,769	$459,769
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$1,461,877	N/A
Subtotal	N/A	N/A	$1,461,877	N/A
Participant Costs				
Incremental Capital Costs	$772,846	N/A	N/A	$606,969
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$772,846	N/A	N/A	$606,969
Total Costs	$772,846	$459,769	$1,921,647	$1,066,738
Net Benefit (Cost)	$1,335,797	$566,275	($895,603)	$453,999
Benefit/Cost Ratio	2.73	2.23	0.53	1.43

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.7 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	81.61%
Gross Load Factor at Customer	E	55.59%
Net-to-Gross (Energy)	F	81.2%
Net-to-Gross (Demand)	G	78.9%
Transmission Loss Factor (Energy)	H	6.033%
Transmission Loss Factor (Demand)	I	6.974%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,024
MTRC Non-Energy Benefit Adder	**M**	$469
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6926 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,870 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,952 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	4,206 kWh

Program Summary All Participants

Total Budget	N	**$459,769**
Gross kW Saved at Customer	O	443 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**307 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	2,158,082 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	2,158,082 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,751,353 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**1,863,803 kWh**
TRC Net Benefits with Adder	(O x L)	**$453,999**
TRC Net Benefits without Adder	(O x (L - M))	**$246,332**
Utility Program Cost per kWh Lifetime		**$0.0148**
Utility Program Cost per kW at Gen		**$1,498**

COOLING **2019 ELECTRIC ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$2,774,362	$2,774,362	$2,774,362
Transmission & Distribution Capac	N/A	$307,088	$307,088	$307,088
Marginal Energy	N/A	$1,982,612	$1,982,612	$1,982,612
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$5,064,062
Non-Energy Benefits Adder (20.2%)				$1,020,439
Subtotal	N/A	$5,064,062	$5,064,062	$6,084,501
Other Benefits				
Bill Reduction - Electric	$7,348,346	N/A	N/A	N/A
Participant Rebates and Incentives	$1,304,956	N/A	N/A	$1,304,956
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,653,302	N/A	N/A	$1,304,956
Total Benefits	$8,653,302	$5,064,062	$5,064,062	$7,389,457
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$1,260,767	$1,260,767	$1,260,767
Advertising/Promotion/Customer Ed	N/A	$108	$108	$108
Participant Rebates and Incentives	N/A	$1,304,956	$1,304,956	$1,304,956
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$15,750	$15,750	$15,750
Subtotal	N/A	$2,581,581	$2,581,581	$2,581,581
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$6,330,601	N/A
Subtotal	N/A	N/A	$6,330,601	N/A
Participant Costs				
Incremental Capital Costs	$4,653,390	N/A	N/A	$4,006,012
Incremental O&M Costs	$144,782	N/A	N/A	$125,960
Subtotal	$4,798,171	N/A	N/A	$4,131,972
Total Costs	$4,798,171	$2,581,581	$8,912,181	$6,713,552
Net Benefit (Cost)	$3,855,131	$2,482,481	($3,848,119)	$675,904
Benefit/Cost Ratio	1.80	1.96	0.57	1.10

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.7 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	94.15%
Gross Load Factor at Customer	E	24.46%
Net-to-Gross (Energy)	F	85.9%
Net-to-Gross (Demand)	G	88.2%
Transmission Loss Factor (Energy)	H	5.914%
Transmission Loss Factor (Demand)	I	7.046%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$256
MTRC Non-Energy Benefit Adder	**M**	$387
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.8933 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,142 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,840 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,955 kWh

Program Summary All Participants

Total Budget	N	**$2,581,581**
Gross kW Saved at Customer	O	2,638 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**2,357 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	5,651,408 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	5,651,408 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	4,853,311 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**5,158,359 kWh**
TRC Net Benefits with Adder	(O x L)	**$675,904**
TRC Net Benefits without Adder	(O x (L - M))	**($344,535)**
Utility Program Cost per kWh Lifetime		**$0.0268**
Utility Program Cost per kW at Gen		**$1,095**

CUSTOM EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$238,810	$238,810	$238,810
Transmission & Distribution Capac	N/A	$13,673	$13,673	$13,673
Marginal Energy	N/A	$608,680	$608,680	$608,680
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$861,162
Non-Energy Benefits Adder (20.3%)				$174,647
Subtotal	N/A	$861,162	$861,162	$1,035,810
Other Benefits				
Bill Reduction - Electric	$1,865,426	N/A	N/A	N/A
Participant Rebates and Incentives	$106,869	N/A	N/A	$106,869
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$4,970,761	N/A	N/A	$4,324,562
Subtotal	$6,943,056	N/A	N/A	$4,431,431
Total Benefits	$6,943,056	$861,162	$861,162	$5,467,241
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$426,415	$426,415	$426,415
Advertising/Promotion/Customer Ed	N/A	$476	$476	$476
Participant Rebates and Incentives	N/A	$106,869	$106,869	$106,869
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$1,258	$1,258	$1,258
Subtotal	N/A	$535,018	$535,018	$535,018
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$1,601,875	N/A
Subtotal	N/A	N/A	$1,601,875	N/A
Participant Costs				
Incremental Capital Costs	$2,060,883	N/A	N/A	$1,792,968
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$2,060,883	N/A	N/A	$1,792,968
Total Costs	$2,060,883	$535,018	$2,136,893	$2,327,986
Net Benefit (Cost)	$4,882,173	$326,145	($1,275,730)	$3,139,255
Benefit/Cost Ratio	3.37	1.61	0.40	2.35

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	20.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	63.73%
Gross Load Factor at Customer	E	62.23%
Net-to-Gross (Energy)	F	87.0%
Net-to-Gross (Demand)	G	87.0%
Transmission Loss Factor (Energy)	H	6.006%
Transmission Loss Factor (Demand)	I	7.111%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$10,145
MTRC Non-Energy Benefit Adder	**M**	$564
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.5969 kW
Gross Annual kWh Saved at Customer	(B x E x C)	5,452 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	4,743 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	5,046 kWh

Program Summary All Participants

Total Budget	N	**$535,018**
Gross kW Saved at Customer	O	309 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**185 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	1,686,859 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,686,859 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,467,567 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**1,561,339 kWh**
TRC Net Benefits with Adder	(O x L)	**$3,139,255**
TRC Net Benefits without Adder	(O x (L - M))	**$2,964,607**
Utility Program Cost per kWh Lifetime		**$0.0171**
Utility Program Cost per kW at Gen		**$2,897**

DATA CENTER EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$1,001,406	$1,001,406	$1,001,406
Transmission & Distribution Capac	N/A	$105,126	$105,126	$105,126
Marginal Energy	N/A	$3,464,745	$3,464,745	$3,464,745
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$4,571,277
Non-Energy Benefits Adder (20.3%)				$927,013
Subtotal	N/A	$4,571,277	$4,571,277	$5,498,290
Other Benefits				
Bill Reduction - Electric	$8,339,405	N/A	N/A	N/A
Participant Rebates and Incentives	$699,056	N/A	N/A	$699,056
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$9,038,462	N/A	N/A	$699,056
Total Benefits	$9,038,462	$4,571,277	$4,571,277	$6,197,347
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$246,692	$246,692	$246,692
Advertising/Promotion/Customer Ed	N/A	$72	$72	$72
Participant Rebates and Incentives	N/A	$699,056	$699,056	$699,056
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$3,795	$3,795	$3,795
Subtotal	N/A	$949,616	$949,616	$949,616
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$7,176,033	N/A
Subtotal	N/A	N/A	$7,176,033	N/A
Participant Costs				
Incremental Capital Costs	$3,115,701	N/A	N/A	$2,584,153
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,115,701	N/A	N/A	$2,584,153
Total Costs	$3,115,701	$949,616	$8,125,649	$3,533,769
Net Benefit (Cost)	$5,922,761	$3,621,661	($3,554,372)	$2,663,577
Benefit/Cost Ratio	2.90	4.81	0.56	1.75

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	77.73%
Gross Load Factor at Customer	E	97.18%
Net-to-Gross (Energy)	F	84.9%
Net-to-Gross (Demand)	G	83.5%
Transmission Loss Factor (Energy)	H	6.319%
Transmission Loss Factor (Demand)	I	6.830%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$2,099
MTRC Non-Energy Benefit Adder	**M**	$730
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6968 kW
Gross Annual kWh Saved at Customer	(B x E x C)	8,513 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	7,231 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	7,719 kWh

Program Summary All Participants		
Total Budget	N	**$949,616**
Gross kW Saved at Customer	O	1,269 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**884 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	10,803,634 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	10,803,634 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	9,176,606 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**9,795,570 kWh**
TRC Net Benefits with Adder	(O x L)	**$2,663,577**
TRC Net Benefits without Adder	(O x (L - M))	**$1,736,564**
Utility Program Cost per kWh Lifetime		**$0.0061**
Utility Program Cost per kW at Gen		**$1,074**

ENERGY MANAGEMENT SYSTEMS — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$29,812	$29,812	$29,812
Transmission & Distribution Capac	N/A	($65,612)	($65,612)	($65,612)
Marginal Energy	N/A	$1,555,405	$1,555,405	$1,555,405
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$1,519,604
Non-Energy Benefits Adder (20.4%)				$310,506
Subtotal	N/A	$1,519,604	$1,519,604	$1,830,110
Other Benefits				
Bill Reduction - Electric	$5,774,549	N/A	N/A	N/A
Participant Rebates and Incentives	$368,616	N/A	N/A	$368,616
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$968,053	N/A	N/A	$842,206
Subtotal	$7,111,218	N/A	N/A	$1,210,822
Total Benefits	$7,111,218	$1,519,604	$1,519,604	$3,040,932
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$190,812	$190,812	$190,812
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$368,616	$368,616	$368,616
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$16,039	$16,039	$16,039
Subtotal	N/A	$575,466	$575,466	$575,466
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$4,816,731	N/A
Subtotal	N/A	N/A	$4,816,731	N/A
Participant Costs				
Incremental Capital Costs	$2,313,198	N/A	N/A	$2,012,482
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$2,313,198	N/A	N/A	$2,012,482
Total Costs	$2,313,198	$575,466	$5,392,198	$2,587,949
Net Benefit (Cost)	$4,798,020	$944,138	($3,872,593)	$452,984
Benefit/Cost Ratio	3.07	2.64	0.28	1.18

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	5.61%
Gross Load Factor at Customer	E	94.38%
Net-to-Gross (Energy)	F	87.0%
Net-to-Gross (Demand)	G	87.0%
Transmission Loss Factor (Energy)	H	6.211%
Transmission Loss Factor (Demand)	I	6.828%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$677
MTRC Non-Energy Benefit Adder	**M**	$464
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.0524 kW
Gross Annual kWh Saved at Customer	(B x E x C)	8,267 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	7,193 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	7,669 kWh

Program Summary All Participants		
Total Budget	N	**$575,466**
Gross kW Saved at Customer	O	669 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**35 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	5,532,390 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	5,532,390 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	4,813,179 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**5,131,923 kWh**
TRC Net Benefits with Adder	(O x L)	**$452,984**
TRC Net Benefits without Adder	(O x (L - M))	**$142,478**
Utility Program Cost per kWh Lifetime		**$0.0075**
Utility Program Cost per kW at Gen		**$16,423**

HEATING EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$11,107	$11,107	$11,107
Transmission & Distribution Capac	N/A	$1,174	$1,174	$1,174
Marginal Energy	N/A	$17,842	$17,842	$17,842
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$30,122
Non-Energy Benefits Adder (20.2%)				$6,090
Subtotal	N/A	$30,122	$30,122	$36,212
Other Benefits				
Bill Reduction - Electric	$61,821	N/A	N/A	N/A
Participant Rebates and Incentives	$3,196	N/A	N/A	$3,196
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$65,017	N/A	N/A	$3,196
Total Benefits	$65,017	$30,122	$30,122	$39,408
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$8,534	$8,534	$8,534
Advertising/Promotion/Customer Ed	N/A	$61	$61	$61
Participant Rebates and Incentives	N/A	$3,196	$3,196	$3,196
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$11,791	$11,791	$11,791
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$60,170	N/A
Subtotal	N/A	N/A	$60,170	N/A
Participant Costs				
Incremental Capital Costs	$4,603	N/A	N/A	$4,553
Incremental O&M Costs	$1,587	N/A	N/A	$1,587
Subtotal	$6,191	N/A	N/A	$6,140
Total Costs	$6,191	$11,791	$71,961	$17,931
Net Benefit (Cost)	$58,827	$18,331	($41,839)	$21,477
Benefit/Cost Ratio	10.50	2.55	0.42	2.20

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	65.05%
Gross Load Factor at Customer	E	39.38%
Net-to-Gross (Energy)	F	95.3%
Net-to-Gross (Demand)	G	96.6%
Transmission Loss Factor (Energy)	H	6.114%
Transmission Loss Factor (Demand)	I	6.951%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,450
MTRC Non-Energy Benefit Adder	**M**	$411
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6756 kW
Gross Annual kWh Saved at Customer	(B x E x C)	3,450 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,287 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,502 kWh

Program Summary All Participants

Total Budget	N	**$11,791**
Gross kW Saved at Customer	O	15 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**10 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	51,094 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	51,094 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	48,690 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**51,861 kWh**
TRC Net Benefits with Adder	(O x L)	**$21,477**
TRC Net Benefits without Adder	(O x (L - M))	**$15,387**
Utility Program Cost per kWh Lifetime		**$0.0152**
Utility Program Cost per kW at Gen		**$1,178**

LED STREET LIGHTING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$0	$0	$0
Transmission & Distribution Capac	N/A	$0	$0	$0
Marginal Energy	N/A	$3,248,754	$3,248,754	$3,248,754
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,248,754
Non-Energy Benefits Adder (20.5%)				$665,352
Subtotal	N/A	$3,248,754	$3,248,754	$3,914,105
Other Benefits				
Bill Reduction - Electric	$10,020,367	N/A	N/A	N/A
Participant Rebates and Incentives	$0	N/A	N/A	$0
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$10,020,367	N/A	N/A	$0
Total Benefits	$10,020,367	$3,248,754	$3,248,754	$3,914,105
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$0	$0	$0
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$0	$0	$0
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$0	$0	$0
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$9,018,331	N/A
Subtotal	N/A	N/A	$9,018,331	N/A
Participant Costs				
Incremental Capital Costs	$3,212,191	N/A	N/A	$2,890,972
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,212,191	N/A	N/A	$2,890,972
Total Costs	$3,212,191	$0	$9,018,331	$2,890,972
Net Benefit (Cost)	$6,808,176	$3,248,754	($5,769,577)	$1,023,133
Benefit/Cost Ratio	3.12	INF	0.36	1.35

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	0.00%
Gross Load Factor at Customer	E	47.43%
Net-to-Gross (Energy)	F	90.0%
Net-to-Gross (Demand)	G	0.0%
Transmission Loss Factor (Energy)	H	5.465%
Transmission Loss Factor (Demand)	I	7.579%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**0.0%**
MTRC Net Benefit (Cost)	**L**	$332
MTRC Non-Energy Benefit Adder	**M**	$216
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	- kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,155 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,739 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,956 kWh

Program Summary All Participants

Total Budget	N	**$0**
Gross kW Saved at Customer	O	3,085 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**0 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	12,818,626 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	12,818,626 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	11,536,763 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**12,203,652 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,023,133**
TRC Net Benefits without Adder	(O x (L - M))	**$357,782**
Utility Program Cost per kWh Lifetime		**$0.0000**
Utility Program Cost per kW at Gen		**#DIV/0!**

LIGHTING EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$16,991,920	$16,991,920	$16,991,920
Transmission & Distribution Capac	N/A	$1,777,273	$1,777,273	$1,777,273
Marginal Energy	N/A	$40,442,027	$40,442,027	$40,442,027
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$59,211,220
Non-Energy Benefits Adder (20.3%)				$11,998,086
Subtotal	N/A	$59,211,220	$59,211,220	$71,209,306
Other Benefits				
Bill Reduction - Electric	$376,880,317	N/A	N/A	N/A
Participant Rebates and Incentives	$12,535,451	N/A	N/A	$12,535,451
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$389,415,768	N/A	N/A	$12,535,451
Total Benefits	$389,415,768	$59,211,220	$59,211,220	$83,744,757
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,277,229	$2,277,229	$2,277,229
Advertising/Promotion/Customer Ed	N/A	$60,756	$60,756	$60,756
Participant Rebates and Incentives	N/A	$12,535,451	$12,535,451	$12,535,451
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$30,585	$30,585	$30,585
Subtotal	N/A	$14,904,021	$14,904,021	$14,904,021
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$290,965,913	N/A
Subtotal	N/A	N/A	$290,965,913	N/A
Participant Costs				
Incremental Capital Costs	$43,427,429	N/A	N/A	$32,513,833
Incremental O&M Costs	$6,114,176	N/A	N/A	$3,132,698
Subtotal	$49,541,605	N/A	N/A	$35,646,531
Total Costs	$49,541,605	$14,904,021	$305,869,934	$50,550,553
Net Benefit (Cost)	$339,874,163	$44,307,199	($246,658,714)	$33,194,205
Benefit/Cost Ratio	7.86	3.97	0.19	1.66

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	66.33%
Gross Load Factor at Customer	E	52.55%
Net-to-Gross (Energy)	F	76.3%
Net-to-Gross (Demand)	G	76.7%
Transmission Loss Factor (Energy)	H	5.988%
Transmission Loss Factor (Demand)	I	7.026%
Installation Rate (Energy)	**J**	**99.7%**
Installation Rate (Demand)	**K**	**99.7%**
MTRC Net Benefit (Cost)	**L**	$1,054
MTRC Non-Energy Benefit Adder	**M**	$381
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.5453 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,604 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,504 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,727 kWh

Program Summary All Participants		
Total Budget	N	**$14,904,021**
Gross kW Saved at Customer	O	31,485 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**17,167 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	144,945,944 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	144,572,914 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	110,323,435 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**117,349,881 kWh**
TRC Net Benefits with Adder	(O x L)	**$33,194,205**
TRC Net Benefits without Adder	(O x (L - M))	**$21,196,119**
Utility Program Cost per kWh Lifetime		**$0.0076**
Utility Program Cost per kW at Gen		**$868**

LIGHTING - SMALL BUSINESS — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$4,562,704	$4,562,704	$4,562,704
Transmission & Distribution Capac	N/A	$488,555	$488,555	$488,555
Marginal Energy	N/A	$10,295,028	$10,295,028	$10,295,028
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$15,346,287
Non-Energy Benefits Adder (20.3%)				$3,108,926
Subtotal	N/A	$15,346,287	$15,346,287	$18,455,213
Other Benefits				
Bill Reduction - Electric	$85,106,923	N/A	N/A	N/A
Participant Rebates and Incentives	$2,895,504	N/A	N/A	$2,895,504
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$88,002,427	N/A	N/A	$2,895,504
Total Benefits	$88,002,427	$15,346,287	$15,346,287	$21,350,717
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,039,425	$2,039,425	$2,039,425
Advertising/Promotion/Customer Ed	N/A	$498	$498	$498
Participant Rebates and Incentives	N/A	$2,895,504	$2,895,504	$2,895,504
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$17,241	$17,241	$17,241
Subtotal	N/A	$4,952,668	$4,952,668	$4,952,668
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$77,053,399	N/A
Subtotal	N/A	N/A	$77,053,399	N/A
Participant Costs				
Incremental Capital Costs	$7,981,596	N/A	N/A	$7,106,415
Incremental O&M Costs	$2,330,800	N/A	N/A	$1,712,881
Subtotal	$10,312,396	N/A	N/A	$8,819,296
Total Costs	$10,312,396	$4,952,668	$82,006,067	$13,771,964
Net Benefit (Cost)	$77,690,031	$10,393,619	($66,659,780)	$7,578,753
Benefit/Cost Ratio	8.53	3.10	0.19	1.55

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	13.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	63.64%
Gross Load Factor at Customer	E	50.53%
Net-to-Gross (Energy)	F	90.5%
Net-to-Gross (Demand)	G	90.7%
Transmission Loss Factor (Energy)	H	5.955%
Transmission Loss Factor (Demand)	I	7.095%
Installation Rate (Energy)	**J**	**99.2%**
Installation Rate (Demand)	**K**	**99.2%**
MTRC Net Benefit (Cost)	**L**	$864
MTRC Non-Energy Benefit Adder	**M**	$354
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6161 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,426 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,974 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	4,225 kWh

Program Summary All Participants

Total Budget	N	**$4,952,668**
Gross kW Saved at Customer	O	8,771 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**5,404 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	38,824,824 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	38,516,648 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	34,851,847 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**37,058,670 kWh**
TRC Net Benefits with Adder	(O x L)	**$7,578,753**
TRC Net Benefits without Adder	(O x (L - M))	**$4,469,826**
Utility Program Cost per kWh Lifetime		**$0.0102**
Utility Program Cost per kW at Gen		**$916**

MOTOR & DRIVE EFFICIENCY — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$2,064,765	$2,064,765	$2,064,765
Transmission & Distribution Capac	N/A	$225,672	$225,672	$225,672
Marginal Energy	N/A	$4,059,246	$4,059,246	$4,059,246
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$6,349,684
Non-Energy Benefits Adder (20.2%)				$1,284,944
Subtotal	N/A	$6,349,684	$6,349,684	$7,634,628
Other Benefits				
Bill Reduction - Electric	$15,887,976	N/A	N/A	N/A
Participant Rebates and Incentives	$1,765,729	N/A	N/A	$1,765,729
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$4,987	N/A	N/A	$3,232
Subtotal	$17,658,691	N/A	N/A	$1,768,961
Total Benefits	$17,658,691	$6,349,684	$6,349,684	$9,403,589
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$436,633	$436,633	$436,633
Advertising/Promotion/Customer Ed	N/A	$108	$108	$108
Participant Rebates and Incentives	N/A	$1,765,729	$1,765,729	$1,765,729
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$15,180	$15,180	$15,180
Subtotal	N/A	$2,217,650	$2,217,650	$2,217,650
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$10,296,203	N/A
Subtotal	N/A	N/A	$10,296,203	N/A
Participant Costs				
Incremental Capital Costs	$4,512,354	N/A	N/A	$2,924,231
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$4,512,354	N/A	N/A	$2,924,231
Total Costs	$4,512,354	$2,217,650	$12,513,852	$5,141,881
Net Benefit (Cost)	$13,146,337	$4,132,034	($6,164,168)	$4,261,708
Benefit/Cost Ratio	3.91	2.86	0.51	1.83

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	76.75%
Gross Load Factor at Customer	E	54.87%
Net-to-Gross (Energy)	F	65.0%
Net-to-Gross (Demand)	G	65.0%
Transmission Loss Factor (Energy)	H	6.092%
Transmission Loss Factor (Demand)	I	6.960%
Installation Rate (Energy)	**J**	**99.7%**
Installation Rate (Demand)	**K**	**99.7%**
MTRC Net Benefit (Cost)	**L**	$1,189
MTRC Non-Energy Benefit Adder	**M**	$358
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.5346 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,807 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,115 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,317 kWh

Program Summary All Participants

Total Budget	N	**$2,217,650**
Gross kW Saved at Customer	O	3,585 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**1,917 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	17,233,250 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	17,181,550 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	11,168,008 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**11,892,548 kWh**
TRC Net Benefits with Adder	(O x L)	**$4,261,708**
TRC Net Benefits without Adder	(O x (L - M))	**$2,976,764**
Utility Program Cost per kWh Lifetime		**$0.0124**
Utility Program Cost per kW at Gen		**$1,157**

MULTIFAMILY BUILDINGS — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$1,078,427	$1,078,427	$1,078,427
Transmission & Distribution Capaci	N/A	$118,702	$118,702	$118,702
Marginal Energy	N/A	$3,015,882	$3,015,882	$3,015,882
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$4,213,011
Non-Energy Benefits Adder (20.3%)				$854,034
Subtotal	N/A	$4,213,011	$4,213,011	$5,067,045
Other Benefits				
Bill Reduction - Electric	$5,743,608	N/A	N/A	N/A
Participant Rebates and Incentives	$1,055,564	N/A	N/A	$1,055,564
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$6,799,172	N/A	N/A	$1,055,564
Total Benefits	$6,799,172	$4,213,011	$4,213,011	$6,122,609
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$325,079	$325,079	$325,079
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$1,055,564	$1,055,564	$1,055,564
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$1,380,644	$1,380,644	$1,380,644
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$5,743,608	N/A
Subtotal	N/A	N/A	$5,743,608	N/A
Participant Costs				
Incremental Capital Costs	$1,983,982	N/A	N/A	$1,983,982
Incremental O&M Costs	$91,197	N/A	N/A	$91,197
Subtotal	$2,075,180	N/A	N/A	$2,075,180
Total Costs	$2,075,180	$1,380,644	$7,124,251	$3,455,823
Net Benefit (Cost)	$4,723,993	$2,832,367	($2,911,240)	$2,666,786
Benefit/Cost Ratio	3.28	3.05	0.59	1.77

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	14.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	23.54%
Gross Load Factor at Customer	E	24.24%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.234%
Transmission Loss Factor (Demand)	I	7.322%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$636
MTRC Non-Energy Benefit Adder	**M**	$204
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.2540 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,123 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,123 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2,264 kWh

Program Summary All Participants

Total Budget	N	**$1,380,644**
Gross kW Saved at Customer	O	4,195 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**1,066 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	8,905,929 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	8,905,929 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	8,905,929 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**9,498,057 kWh**
TRC Net Benefits with Adder	(O x L)	**$2,666,786**
TRC Net Benefits without Adder	(O x (L - M))	**$1,812,752**
Utility Program Cost per kWh Lifetime		**$0.0098**
Utility Program Cost per kW at Gen		**$1,296**

NEW CONSTRUCTION — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$22,840,920	$22,840,920	$22,840,920
Transmission & Distribution Capac	N/A	$2,557,758	$2,557,758	$2,557,758
Marginal Energy	N/A	$23,342,107	$23,342,107	$23,342,107
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$48,740,786
Non-Energy Benefits Adder (20.2%)				$9,838,702
Subtotal	N/A	$48,740,786	$48,740,786	$58,579,488
Other Benefits				
Bill Reduction - Electric	$57,221,091	N/A	N/A	N/A
Participant Rebates and Incentives	$9,306,108	N/A	N/A	$9,306,108
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$66,527,199	N/A	N/A	$9,306,108
Total Benefits	$66,527,199	$48,740,786	$48,740,786	$67,885,596
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,429,010	$2,429,010	$2,429,010
Advertising/Promotion/Customer Ed	N/A	$144	$144	$144
Participant Rebates and Incentives	N/A	$9,306,108	$9,306,108	$9,306,108
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$487,602	$487,602	$487,602
Subtotal	N/A	$12,222,865	$12,222,865	$12,222,865
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$54,360,037	N/A
Subtotal	N/A	N/A	$54,360,037	N/A
Participant Costs				
Incremental Capital Costs	$29,011,677	N/A	N/A	$27,561,093
Incremental O&M Costs	$748,098	N/A	N/A	$710,693
Subtotal	$29,759,775	N/A	N/A	$28,271,786
Total Costs	$29,759,775	$12,222,865	$66,582,901	$40,494,651
Net Benefit (Cost)	$36,767,425	$36,517,921	($17,842,115)	$27,390,945
Benefit/Cost Ratio	2.24	3.99	0.73	1.68

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	20.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	95.50%
Gross Load Factor at Customer	E	35.10%
Net-to-Gross (Energy)	F	95.0%
Net-to-Gross (Demand)	G	95.0%
Transmission Loss Factor (Energy)	H	5.937%
Transmission Loss Factor (Demand)	I	7.117%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,466
MTRC Non-Energy Benefit Adder	**M**	$527
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.9767 kW
Gross Annual kWh Saved at Customer	(B x E x C)	3,075 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,921 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,106 kWh

Program Summary All Participants

Total Budget	N	**$12,222,865**
Gross kW Saved at Customer	O	18,679 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**18,245 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	57,439,659 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	57,439,659 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	54,567,676 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**58,011,681 kWh**
TRC Net Benefits with Adder	(O x L)	**$27,390,945**
TRC Net Benefits without Adder	(O x (L - M))	**$17,552,244**
Utility Program Cost per kWh Lifetime		**$0.0105**
Utility Program Cost per kW at Gen		**$670**

RECOMMISSIONING **2019** **ELECTRIC** **ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$97,958	$97,958	$97,958
Transmission & Distribution Capac	N/A	$10,026	$10,026	$10,026
Marginal Energy	N/A	$104,804	$104,804	$104,804
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$212,787
Non-Energy Benefits Adder (20.3%)				$43,101
Subtotal	N/A	$212,787	$212,787	$255,889
Other Benefits				
Bill Reduction - Electric	$322,751	N/A	N/A	N/A
Participant Rebates and Incentives	$79,657	N/A	N/A	$79,657
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$15,555	N/A	N/A	$14,000
Subtotal	$417,964	N/A	N/A	$93,657
Total Benefits	$417,964	$212,787	$212,787	$349,546
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$153,916	$153,916	$153,916
Advertising/Promotion/Customer Ed	N/A	$54	$54	$54
Participant Rebates and Incentives	N/A	$79,657	$79,657	$79,657
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$233,628	$233,628	$233,628
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$290,476	N/A
Subtotal	N/A	N/A	$290,476	N/A
Participant Costs				
Incremental Capital Costs	$66,850	N/A	N/A	$60,165
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$66,850	N/A	N/A	$60,165
Total Costs	$66,850	$233,628	$524,103	$293,793
Net Benefit (Cost)	$351,114	($20,840)	($311,316)	$55,753
Benefit/Cost Ratio	6.25	0.91	0.41	1.19

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	7.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	67.97%
Gross Load Factor at Customer	E	41.88%
Net-to-Gross (Energy)	F	90.0%
Net-to-Gross (Demand)	G	90.0%
Transmission Loss Factor (Energy)	H	5.502%
Transmission Loss Factor (Demand)	I	6.844%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$240
MTRC Non-Energy Benefit Adder	**M**	$185
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6567 kW
Gross Annual kWh Saved at Customer	(B x E x C)	3,669 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,302 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,494 kWh

Program Summary All Participants

Total Budget	N	**$233,628**
Gross kW Saved at Customer	O	232 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**153 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	852,613 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	852,613 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	767,352 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**812,028 kWh**
TRC Net Benefits with Adder	(O x L)	**$55,753**
TRC Net Benefits without Adder	(O x (L - M))	**$12,652**
Utility Program Cost per kWh Lifetime		**$0.0411**
Utility Program Cost per kW at Gen		**$1,531**

SELF DIRECT **2019 ELECTRIC ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$2,607,328	$2,607,328	$2,607,328
Transmission & Distribution Capac	N/A	$273,987	$273,987	$273,987
Marginal Energy	N/A	$5,226,911	$5,226,911	$5,226,911
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$8,108,227
Non-Energy Benefits Adder (20.2%)				$1,640,122
Subtotal	N/A	$8,108,227	$8,108,227	$9,748,349
Other Benefits				
Bill Reduction - Electric	$14,113,104	N/A	N/A	N/A
Participant Rebates and Incentives	$2,458,037	N/A	N/A	$2,458,037
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$16,571,141	N/A	N/A	$2,458,037
Total Benefits	$16,571,141	$8,108,227	$8,108,227	$12,206,386
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$141,554	$141,554	$141,554
Advertising/Promotion/Customer Ed	N/A	$36	$36	$36
Participant Rebates and Incentives	N/A	$2,458,037	$2,458,037	$2,458,037
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$2,599,627	$2,599,627	$2,599,627
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$12,832,562	N/A
Subtotal	N/A	N/A	$12,832,562	N/A
Participant Costs				
Incremental Capital Costs	$6,578,723	N/A	N/A	$5,981,488
Incremental O&M Costs	$446,131	N/A	N/A	$405,596
Subtotal	$7,024,854	N/A	N/A	$6,387,084
Total Costs	$7,024,854	$2,599,627	$15,432,188	$8,986,711
Net Benefit (Cost)	$9,546,287	$5,508,600	($7,323,961)	$3,219,676
Benefit/Cost Ratio	2.36	3.12	0.53	1.36

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	45.92%
Gross Load Factor at Customer	E	32.65%
Net-to-Gross (Energy)	F	90.9%
Net-to-Gross (Demand)	G	90.9%
Transmission Loss Factor (Energy)	H	6.267%
Transmission Loss Factor (Demand)	I	6.818%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$694
MTRC Non-Energy Benefit Adder	**M**	$353
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4481 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,860 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,600 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2,774 kWh

Program Summary All Participants

Total Budget	N	**$2,599,627**
Gross kW Saved at Customer	O	4,640 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**2,079 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	13,270,741 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	13,270,741 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	12,065,419 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**12,872,104 kWh**
TRC Net Benefits with Adder	(O x L)	**$3,219,676**
TRC Net Benefits without Adder	(O x (L - M))	**$1,579,553**
Utility Program Cost per kWh Lifetime		**$0.0112**
Utility Program Cost per kW at Gen		**$1,250**

STRATEGIC ENERGY MANAGEMENT — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$5,327,866	$5,327,866	$5,327,866
Transmission & Distribution Capac	N/A	$564,920	$564,920	$564,920
Marginal Energy	N/A	$12,703,031	$12,703,031	$12,703,031
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$18,595,816
Non-Energy Benefits Adder (20.2%)				$3,764,912
Subtotal	N/A	$18,595,816	$18,595,816	$22,360,728
Other Benefits				
Bill Reduction - Electric	$34,202,688	N/A	N/A	N/A
Participant Rebates and Incentives	$3,367,866	N/A	N/A	$3,367,866
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$1,315,890	N/A	N/A	$1,188,822
Subtotal	$38,886,444	N/A	N/A	$4,556,688
Total Benefits	$38,886,444	$18,595,816	$18,595,816	$26,917,417
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$873,028	$873,028	$873,028
Advertising/Promotion/Customer Ed	N/A	$72	$72	$72
Participant Rebates and Incentives	N/A	$3,367,866	$3,367,866	$3,367,866
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$58,657	$58,657	$58,657
Subtotal	N/A	$4,299,623	$4,299,623	$4,299,623
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$31,028,110	N/A
Subtotal	N/A	N/A	$31,028,110	N/A
Participant Costs				
Incremental Capital Costs	$8,503,735	N/A	N/A	$7,716,617
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$8,503,735	N/A	N/A	$7,716,617
Total Costs	$8,503,735	$4,299,623	$35,327,733	$12,016,239
Net Benefit (Cost)	$30,382,710	$14,296,194	($16,731,917)	$14,901,177
Benefit/Cost Ratio	4.57	4.32	0.53	2.24

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	55.24%
Gross Load Factor at Customer	E	47.24%
Net-to-Gross (Energy)	F	90.9%
Net-to-Gross (Demand)	G	90.7%
Transmission Loss Factor (Energy)	H	6.205%
Transmission Loss Factor (Demand)	I	7.016%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,746
MTRC Non-Energy Benefit Adder	**M**	$441
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.5391 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,138 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,760 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	4,009 kWh

Program Summary All Participants

Total Budget	N	**$4,299,623**
Gross kW Saved at Customer	O	8,535 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**4,601 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	35,315,519 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	35,315,519 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	32,090,904 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**34,213,911 kWh**
TRC Net Benefits with Adder	(O x L)	**$14,901,177**
TRC Net Benefits without Adder	(O x (L - M))	**$11,136,265**
Utility Program Cost per kWh Lifetime		**$0.0077**
Utility Program Cost per kW at Gen		**$934**

ENERGY EFFICIENT SHOWERHEAD — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$27,075	$27,075	$27,075
Transmission & Distribution Capac	N/A	$3,384	$3,384	$3,384
Marginal Energy	N/A	$84,654	$84,654	$84,654
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$115,114
Non-Energy Benefits Adder (20.4%)				$23,445
Subtotal	N/A	$115,114	$115,114	$138,559
Other Benefits				
Bill Reduction - Electric	$638,951	N/A	N/A	N/A
Participant Rebates and Incentives	$9,103	N/A	N/A	$9,103
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$313,250	N/A	N/A	$195,438
Subtotal	$961,304	N/A	N/A	$204,541
Total Benefits	$961,304	$115,114	$115,114	$343,100
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$21,671	$21,671	$21,671
Advertising/Promotion/Customer Ed	N/A	$31	$31	$31
Participant Rebates and Incentives	N/A	$9,103	$9,103	$9,103
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$30,805	$30,805	$30,805
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$397,136	N/A
Subtotal	N/A	N/A	$397,136	N/A
Participant Costs				
Incremental Capital Costs	$6,488	N/A	N/A	$6,423
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$6,488	N/A	N/A	$6,423
Total Costs	$6,488	$30,805	$427,942	$37,228
Net Benefit (Cost)	$954,816	$84,309	($312,828)	$305,872
Benefit/Cost Ratio	148.16	3.74	0.27	9.22

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	10.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	76.80%
Gross Load Factor at Customer	E	101.01%
Net-to-Gross (Energy)	F	99.0%
Net-to-Gross (Demand)	G	99.0%
Transmission Loss Factor (Energy)	H	6.391%
Transmission Loss Factor (Demand)	I	9.117%
Installation Rate (Energy)	**J**	**62.8%**
Installation Rate (Demand)	**K**	**57.9%**
MTRC Net Benefit (Cost)	**L**	$3,867
MTRC Non-Energy Benefit Adder	**M**	$296
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4843 kW
Gross Annual kWh Saved at Customer	(B x E x C)	8,849 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	5,499 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	5,875 kWh

Program Summary All Participants

Total Budget	N	**$30,805**
Gross kW Saved at Customer	O	79 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**38 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	699,813 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	439,331 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	434,937 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**464,634 kWh**
TRC Net Benefits with Adder	(O x L)	**$305,872**
TRC Net Benefits without Adder	(O x (L - M))	**$282,427**
Utility Program Cost per kWh Lifetime		**$0.0066**
Utility Program Cost per kW at Gen		**$804**

ENERGY FEEDBACK RESIDENTIAL — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$1,716,232	$1,716,232	$1,716,232
Transmission & Distribution Capac	N/A	$214,890	$214,890	$214,890
Marginal Energy	N/A	$1,311,979	$1,311,979	$1,311,979
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,243,101
Non-Energy Benefits Adder (20.2%)				$655,848
Subtotal	N/A	$3,243,101	$3,243,101	$3,898,949
Other Benefits				
Bill Reduction - Electric	$7,404,239	N/A	N/A	N/A
Participant Rebates and Incentives	$0	N/A	N/A	$0
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$7,404,239	N/A	N/A	$0
Total Benefits	$7,404,239	$3,243,101	$3,243,101	$3,898,949
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$3,188,644	$3,188,644	$3,188,644
Advertising/Promotion/Customer Ed	N/A	$250	$250	$250
Participant Rebates and Incentives	N/A	$0	$0	$0
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$3,188,894	$3,188,894	$3,188,894
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$7,404,239	N/A
Subtotal	N/A	N/A	$7,404,239	N/A
Participant Costs				
Incremental Capital Costs	$0	N/A	N/A	$0
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$0	N/A	N/A	$0
Total Costs	$0	$3,188,894	$10,593,133	$3,188,894
Net Benefit (Cost)	$7,404,239	$54,207	($7,350,032)	$710,055
Benefit/Cost Ratio	INF	1.02	0.31	1.22

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	3.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	112.37%
Gross Load Factor at Customer	E	34.13%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.380%
Transmission Loss Factor (Demand)	I	9.129%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$121
MTRC Non-Energy Benefit Adder	**M**	$112
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	1.2366 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,990 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,990 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,193 kWh

Program Summary All Participants

Total Budget	N	**$3,188,894**
Gross kW Saved at Customer	O	5,876 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**7,266 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	17,566,700 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	17,566,700 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	17,566,700 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**18,763,744 kWh**
TRC Net Benefits with Adder	(O x L)	**$710,055**
TRC Net Benefits without Adder	(O x (L - M))	**$54,207**
Utility Program Cost per kWh Lifetime		**$0.0566**
Utility Program Cost per kW at Gen		**$439**

ENERGY STAR NEW HOMES — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$1,202,673	$1,202,673	$1,202,673
Transmission & Distribution Capaci	N/A	$134,398	$134,398	$134,398
Marginal Energy	N/A	$1,930,295	$1,930,295	$1,930,295
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,267,366
Non-Energy Benefits Adder (20.2%)				$660,777
Subtotal	N/A	$3,267,366	$3,267,366	$3,928,144
Other Benefits				
Bill Reduction - Electric	$8,329,063	N/A	N/A	N/A
Participant Rebates and Incentives	$777,346	N/A	N/A	$777,346
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$4,783	N/A	N/A	$4,400
Subtotal	$9,111,192	N/A	N/A	$781,746
Total Benefits	$9,111,192	$3,267,366	$3,267,366	$4,709,890
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$200,848	$200,848	$200,848
Advertising/Promotion/Customer Ed	N/A	$1,893	$1,893	$1,893
Participant Rebates and Incentives	N/A	$777,346	$777,346	$777,346
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$122,535	$122,535	$122,535
Subtotal	N/A	$1,102,622	$1,102,622	$1,102,622
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$7,662,738	N/A
Subtotal	N/A	N/A	$7,662,738	N/A
Participant Costs				
Incremental Capital Costs	$2,497,145	N/A	N/A	$2,297,373
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$2,497,145	N/A	N/A	$2,297,373
Total Costs	$2,497,145	$1,102,622	$8,765,360	$3,399,995
Net Benefit (Cost)	$6,614,047	$2,164,745	($5,497,993)	$1,309,895
Benefit/Cost Ratio	3.65	2.96	0.37	1.39

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	63.25%
Gross Load Factor at Customer	E	35.30%
Net-to-Gross (Energy)	F	92.0%
Net-to-Gross (Demand)	G	92.0%
Transmission Loss Factor (Energy)	H	7.011%
Transmission Loss Factor (Demand)	I	8.216%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$847
MTRC Non-Energy Benefit Adder	**M**	$427
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6340 kW
Gross Annual kWh Saved at Customer	(B x E x C)	3,093 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,845 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,060 kWh

Program Summary All Participants

Total Budget	N	**$1,102,622**
Gross kW Saved at Customer	O	1,547 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**981 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	4,785,097 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	4,785,097 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	4,402,289 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**4,734,206 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,309,895**
TRC Net Benefits without Adder	(O x (L - M))	**$649,117**
Utility Program Cost per kWh Lifetime		**$0.0124**
Utility Program Cost per kW at Gen		**$1,124**

EVAPORATIVE COOLING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$7,936,668	$7,936,668	$7,936,668
Transmission & Distribution Capac	N/A	$909,626	$909,626	$909,626
Marginal Energy	N/A	$1,965,657	$1,965,657	$1,965,657
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$10,811,951
Non-Energy Benefits Adder (20.1%)				$2,170,244
Subtotal	N/A	$10,811,951	$10,811,951	$12,982,195
Other Benefits				
Bill Reduction - Electric	$11,504,135	N/A	N/A	N/A
Participant Rebates and Incentives	$2,494,778	N/A	N/A	$2,494,778
Incremental Capital Savings	$11,059,090	N/A	N/A	$7,699,090
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$25,058,003	N/A	N/A	$10,193,868
Total Benefits	$25,058,003	$10,811,951	$10,811,951	$23,176,064
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$765,441	$765,441	$765,441
Advertising/Promotion/Customer Ed	N/A	$461,938	$461,938	$461,938
Participant Rebates and Incentives	N/A	$2,494,778	$2,494,778	$2,494,778
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$3,300	$3,300	$3,300
Subtotal	N/A	$3,725,456	$3,725,456	$3,725,456
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$8,340,012	N/A
Subtotal	N/A	N/A	$8,340,012	N/A
Participant Costs				
Incremental Capital Costs	$0	N/A	N/A	$0
Incremental O&M Costs	$949,738	N/A	N/A	$677,313
Subtotal	$949,738	N/A	N/A	$677,313
Total Costs	$949,738	$3,725,456	$12,065,468	$4,402,769
Net Benefit (Cost)	$24,108,266	$7,086,495	($1,253,517)	$18,773,295
Benefit/Cost Ratio	26.38	2.90	0.90	5.26

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	70.00%
Gross Load Factor at Customer	E	6.30%
Net-to-Gross (Energy)	F	72.4%
Net-to-Gross (Demand)	G	72.4%
Transmission Loss Factor (Energy)	H	6.896%
Transmission Loss Factor (Demand)	I	8.571%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,344
MTRC Non-Energy Benefit Adder	**M**	$155
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.5545 kW
Gross Annual kWh Saved at Customer	(B x E x C)	552 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	400 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	429 kWh

Program Summary All Participants

Total Budget	N	**$3,725,456**
Gross kW Saved at Customer	O	13,968 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**7,746 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	7,705,543 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	7,705,543 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	5,580,410 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**5,993,754 kWh**
TRC Net Benefits with Adder	(O x L)	**$18,773,295**
TRC Net Benefits without Adder	(O x (L - M))	**$16,603,051**
Utility Program Cost per kWh Lifetime		**$0.0414**
Utility Program Cost per kW at Gen		**$481**

HIGH EFFICIENCY AIR CONDITIONING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$2,993,045	$2,993,045	$2,993,045
Transmission & Distribution Capac	N/A	$344,899	$344,899	$344,899
Marginal Energy	N/A	$1,054,299	$1,054,299	$1,054,299
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$4,392,244
Non-Energy Benefits Adder (20.1%)				$882,622
Subtotal	N/A	$4,392,244	$4,392,244	$5,274,866
Other Benefits				
Bill Reduction - Electric	$5,850,822	N/A	N/A	N/A
Participant Rebates and Incentives	$2,737,008	N/A	N/A	$2,737,008
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,587,831	N/A	N/A	$2,737,008
Total Benefits	$8,587,831	$4,392,244	$4,392,244	$8,011,874
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$478,001	$478,001	$478,001
Advertising/Promotion/Customer Ed	N/A	$21,768	$21,768	$21,768
Participant Rebates and Incentives	N/A	$2,737,008	$2,737,008	$2,737,008
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$43,898	$43,898	$43,898
Subtotal	N/A	$3,280,675	$3,280,675	$3,280,675
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$4,046,533	N/A
Subtotal	N/A	N/A	$4,046,533	N/A
Participant Costs				
Incremental Capital Costs	$4,047,344	N/A	N/A	$2,772,396
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$4,047,344	N/A	N/A	$2,772,396
Total Costs	$4,047,344	$3,280,675	$7,327,208	$6,053,071
Net Benefit (Cost)	$4,540,487	$1,111,569	($2,934,964)	$1,958,803
Benefit/Cost Ratio	2.12	1.34	0.60	1.32

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	17.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	89.03%
Gross Load Factor at Customer	E	10.36%
Net-to-Gross (Energy)	F	70.6%
Net-to-Gross (Demand)	G	69.8%
Transmission Loss Factor (Energy)	H	6.837%
Transmission Loss Factor (Demand)	I	8.577%
Installation Rate (Energy)	**J**	**98.9%**
Installation Rate (Demand)	**K**	**98.4%**
MTRC Net Benefit (Cost)	**L**	$477
MTRC Non-Energy Benefit Adder	**M**	$215
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.6683 kW
Gross Annual kWh Saved at Customer	(B x E x C)	907 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	633 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	679 kWh

Program Summary All Participants

Total Budget	N	**$3,280,675**
Gross kW Saved at Customer	O	4,104 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**2,743 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	3,723,097 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	3,681,296 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	2,597,673 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**2,788,315 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,958,803**
TRC Net Benefits without Adder	(O x (L - M))	**$1,076,181**
Utility Program Cost per kWh Lifetime		**$0.0672**
Utility Program Cost per kW at Gen		**$1,196**

HOME ENERGY SQUAD — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$90,415	$90,415	$90,415
Transmission & Distribution Capac	N/A	$10,160	$10,160	$10,160
Marginal Energy	N/A	$201,085	$201,085	$201,085
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$301,661
Non-Energy Benefits Adder (20.3%)				$61,117
Subtotal	N/A	$301,661	$301,661	$362,778
Other Benefits				
Bill Reduction - Electric	$785,666	N/A	N/A	N/A
Participant Rebates and Incentives	$79,282	N/A	N/A	$79,282
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$8,794	N/A	N/A	$8,794
Subtotal	$873,741	N/A	N/A	$88,076
Total Benefits	$873,741	$301,661	$301,661	$450,854
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$122,718	$122,718	$122,718
Advertising/Promotion/Customer Ed	N/A	$67,916	$67,916	$67,916
Participant Rebates and Incentives	N/A	$79,282	$79,282	$79,282
Equipment & Installation	N/A	$179,766	$179,766	$179,766
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$449,682	$449,682	$449,682
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$785,666	N/A
Subtotal	N/A	N/A	$785,666	N/A
Participant Costs				
Incremental Capital Costs	$33,132	N/A	N/A	$33,132
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$33,132	N/A	N/A	$33,132
Total Costs	$33,132	$449,682	$1,235,347	$482,814
Net Benefit (Cost)	$840,609	($148,021)	($933,687)	($31,961)
Benefit/Cost Ratio	26.37	0.67	0.24	0.93

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	5.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	12.06%
Gross Load Factor at Customer	E	10.89%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.092%
Transmission Loss Factor (Demand)	I	8.331%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	-$24
MTRC Non-Energy Benefit Adder	**M**	$45
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.1316 kW
Gross Annual kWh Saved at Customer	(B x E x C)	954 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	954 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,026 kWh

Program Summary All Participants

Total Budget	N	**$449,682**
Gross kW Saved at Customer	O	1,354 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**178 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	1,290,973 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,290,973 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,290,973 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**1,389,518 kWh**
TRC Net Benefits with Adder	(O x L)	**($31,961)**
TRC Net Benefits without Adder	(O x (L - M))	**($93,078)**
Utility Program Cost per kWh Lifetime		**$0.0558**
Utility Program Cost per kW at Gen		**$2,524**

HOME LIGHTING & RECYCLING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$6,733,960	$6,733,960	$6,733,960
Transmission & Distribution Capac	N/A	$783,092	$783,092	$783,092
Marginal Energy	N/A	$15,937,264	$15,937,264	$15,937,264
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$23,454,316
Non-Energy Benefits Adder (20.3%)				$4,757,289
Subtotal	N/A	$23,454,316	$23,454,316	$28,211,605
Other Benefits				
Bill Reduction - Electric	$106,114,522	N/A	N/A	N/A
Participant Rebates and Incentives	$5,511,318	N/A	N/A	$5,511,318
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$111,625,840	N/A	N/A	$5,511,318
Total Benefits	$111,625,840	$23,454,316	$23,454,316	$33,722,923
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$844,778	$844,778	$844,778
Advertising/Promotion/Customer Ed	N/A	$879,137	$879,137	$879,137
Participant Rebates and Incentives	N/A	$5,511,318	$5,511,318	$5,511,318
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$3,000	$3,000	$3,000
Subtotal	N/A	$7,238,233	$7,238,233	$7,238,233
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$64,256,995	N/A
Subtotal	N/A	N/A	$64,256,995	N/A
Participant Costs				
Incremental Capital Costs	$7,127,582	N/A	N/A	$4,378,482
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$7,127,582	N/A	N/A	$4,378,482
Total Costs	$7,127,582	$7,238,233	$71,495,228	$11,616,715
Net Benefit (Cost)	$104,498,259	$16,216,083	($48,040,912)	$22,106,208
Benefit/Cost Ratio	15.66	3.24	0.33	2.90

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	5.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	13.77%
Gross Load Factor at Customer	E	13.25%
Net-to-Gross (Energy)	F	61.1%
Net-to-Gross (Demand)	G	61.1%
Transmission Loss Factor (Energy)	H	6.728%
Transmission Loss Factor (Demand)	I	8.400%
Installation Rate (Energy)	**J**	**99.0%**
Installation Rate (Demand)	**K**	**99.0%**
MTRC Net Benefit (Cost)	**L**	$143
MTRC Non-Energy Benefit Adder	**M**	$31
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.0909 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,161 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	702 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	753 kWh

Program Summary All Participants

Total Budget	N	**$7,238,233**
Gross kW Saved at Customer	O	155,095 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**14,093 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	180,070,659 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	178,269,953 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	108,866,526 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**116,719,772 kWh**
TRC Net Benefits with Adder	(O x L)	**$22,106,208**
TRC Net Benefits without Adder	(O x (L - M))	**$17,348,919**
Utility Program Cost per kWh Lifetime		**$0.0105**
Utility Program Cost per kW at Gen		**$514**

HOME PERFORMANCE WITH ENERGY STAR — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$171,003	$171,003	$171,003
Transmission & Distribution Capac	N/A	$18,393	$18,393	$18,393
Marginal Energy	N/A	$45,347	$45,347	$45,347
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$234,743
Non-Energy Benefits Adder (20.1%)				$47,115
Subtotal	N/A	$234,743	$234,743	$281,858
Other Benefits				
Bill Reduction - Electric	$146,557	N/A	N/A	N/A
Participant Rebates and Incentives	$68,706	N/A	N/A	$68,706
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$215,263	N/A	N/A	$68,706
Total Benefits	$215,263	$234,743	$234,743	$350,564
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$70,075	$70,075	$70,075
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$68,706	$68,706	$68,706
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$16,741	$16,741	$16,741
Subtotal	N/A	$155,521	$155,521	$155,521
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$169,981	N/A
Subtotal	N/A	N/A	$169,981	N/A
Participant Costs				
Incremental Capital Costs	$212,511	N/A	N/A	$246,490
Incremental O&M Costs	$618	N/A	N/A	$717
Subtotal	$213,128	N/A	N/A	$247,207
Total Costs	$213,128	$155,521	$325,503	$402,728
Net Benefit (Cost)	$2,134	$79,222	($90,759)	($52,164)
Benefit/Cost Ratio	1.01	1.51	0.72	0.87

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	14.2 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	69.33%
Gross Load Factor at Customer	E	7.28%
Net-to-Gross (Energy)	F	116.0%
Net-to-Gross (Demand)	G	116.0%
Transmission Loss Factor (Energy)	H	7.271%
Transmission Loss Factor (Demand)	I	8.121%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	-$299
MTRC Non-Energy Benefit Adder	**M**	$270
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.8751 kW
Gross Annual kWh Saved at Customer	(B x E x C)	637 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	739 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	797 kWh

Program Summary All Participants

Total Budget	N	**$155,521**
Gross kW Saved at Customer	O	174 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**153 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	111,118 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	111,118 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	128,870 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**138,975 kWh**
TRC Net Benefits with Adder	(O x L)	**($52,164)**
TRC Net Benefits without Adder	(O x (L - M))	**($99,279)**
Utility Program Cost per kWh Lifetime		**$0.0790**
Utility Program Cost per kW at Gen		**$1,019**

INSULATION & AIR SEALING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$354,537	$354,537	$354,537
Transmission & Distribution Capac	N/A	$38,440	$38,440	$38,440
Marginal Energy	N/A	$61,356	$61,356	$61,356
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$454,332
Non-Energy Benefits Adder (20%)				$91,086
Subtotal	N/A	$454,332	$454,332	$545,419
Other Benefits				
Bill Reduction - Electric	$272,260	N/A	N/A	N/A
Participant Rebates and Incentives	$179,934	N/A	N/A	$179,934
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$452,194	N/A	N/A	$179,934
Total Benefits	$452,194	$454,332	$454,332	$725,353
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$26,221	$26,221	$26,221
Advertising/Promotion/Customer Ed	N/A	$250	$250	$250
Participant Rebates and Incentives	N/A	$179,934	$179,934	$179,934
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$1,200	$1,200	$1,200
Subtotal	N/A	$207,605	$207,605	$207,605
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$234,896	N/A
Subtotal	N/A	N/A	$234,896	N/A
Participant Costs				
Incremental Capital Costs	$626,930	N/A	N/A	$543,577
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$626,930	N/A	N/A	$543,577
Total Costs	$626,930	$207,605	$442,500	$751,182
Net Benefit (Cost)	($174,737)	$246,728	$11,832	($25,829)
Benefit/Cost Ratio	0.72	2.19	1.03	0.97

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	16.2 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	90.77%
Gross Load Factor at Customer	E	5.39%
Net-to-Gross (Energy)	F	86.2%
Net-to-Gross (Demand)	G	86.4%
Transmission Loss Factor (Energy)	H	7.290%
Transmission Loss Factor (Demand)	I	8.134%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	-$69
MTRC Non-Energy Benefit Adder	**M**	$245
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.8532 kW
Gross Annual kWh Saved at Customer	(B x E x C)	472 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	407 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	439 kWh

Program Summary All Participants

Total Budget	N	**$207,605**
Gross kW Saved at Customer	O	372 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**317 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	175,650 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	175,650 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	151,450 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**163,358 kWh**
TRC Net Benefits with Adder	(O x L)	**($25,829)**
TRC Net Benefits without Adder	(O x (L - M))	**($116,915)**
Utility Program Cost per kWh Lifetime		**$0.0787**
Utility Program Cost per kW at Gen		**$654**

REFRIGERATOR & FREEZER RECYCLING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$263,818	$263,818	$263,818
Transmission & Distribution Capac	N/A	$29,885	$29,885	$29,885
Marginal Energy	N/A	$628,998	$628,998	$628,998
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$922,701
Non-Energy Benefits Adder (20.3%)				$187,103
Subtotal	N/A	$922,701	$922,701	$1,109,804
Other Benefits				
Bill Reduction - Electric	$4,352,400	N/A	N/A	N/A
Participant Rebates and Incentives	$414,125	N/A	N/A	$414,125
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$4,766,525	N/A	N/A	$414,125
Total Benefits	$4,766,525	$922,701	$922,701	$1,523,929
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$684,325	$684,325	$684,325
Advertising/Promotion/Customer Ed	N/A	$17,257	$17,257	$17,257
Participant Rebates and Incentives	N/A	$414,125	$414,125	$414,125
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$3,000	$3,000	$3,000
Subtotal	N/A	$1,118,707	$1,118,707	$1,118,707
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$2,533,787	N/A
Subtotal	N/A	N/A	$2,533,787	N/A
Participant Costs				
Incremental Capital Costs	$0	N/A	N/A	$0
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$0	N/A	N/A	$0
Total Costs	$0	$1,118,707	$3,652,494	$1,118,707
Net Benefit (Cost)	$4,766,525	($196,007)	($2,729,793)	$405,222
Benefit/Cost Ratio	INF	0.82	0.25	1.36

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	7.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	64.62%
Gross Load Factor at Customer	E	62.11%
Net-to-Gross (Energy)	F	57.8%
Net-to-Gross (Demand)	G	57.8%
Transmission Loss Factor (Energy)	H	6.973%
Transmission Loss Factor (Demand)	I	8.482%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$384
MTRC Non-Energy Benefit Adder	**M**	$177
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4080 kW
Gross Annual kWh Saved at Customer	(B x E x C)	5,441 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,145 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,381 kWh

Program Summary All Participants

Total Budget	N	**$1,118,707**
Gross kW Saved at Customer	O	1,056 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**431 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	5,745,834 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	5,745,834 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	3,321,696 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**3,570,691 kWh**
TRC Net Benefits with Adder	(O x L)	**$405,222**
TRC Net Benefits without Adder	(O x (L - M))	**$218,118**
Utility Program Cost per kWh Lifetime		**$0.0411**
Utility Program Cost per kW at Gen		**$2,596**

RESIDENTIAL HEATING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$1,164,881	$1,164,881	$1,164,881
Transmission & Distribution Capac	N/A	$129,373	$129,373	$129,373
Marginal Energy	N/A	$1,981,061	$1,981,061	$1,981,061
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,275,315
Non-Energy Benefits Adder (20.2%)				$662,848
Subtotal	N/A	$3,275,315	$3,275,315	$3,938,163
Other Benefits				
Bill Reduction - Electric	$8,284,842	N/A	N/A	N/A
Participant Rebates and Incentives	$654,080	N/A	N/A	$654,080
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,938,922	N/A	N/A	$654,080
Total Benefits	$8,938,922	$3,275,315	$3,275,315	$4,592,243
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$72,676	$72,676	$72,676
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$654,080	$654,080	$654,080
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$2,100	$2,100	$2,100
Subtotal	N/A	$728,856	$728,856	$728,856
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$7,787,751	N/A
Subtotal	N/A	N/A	$7,787,751	N/A
Participant Costs				
Incremental Capital Costs	$1,452,071	N/A	N/A	$1,364,947
Incremental O&M Costs	$903,196	N/A	N/A	$849,005
Subtotal	$2,355,267	N/A	N/A	$2,213,951
Total Costs	$2,355,267	$728,856	$8,516,608	$2,942,808
Net Benefit (Cost)	$6,583,655	$2,546,459	($5,241,292)	$1,649,436
Benefit/Cost Ratio	3.80	4.49	0.38	1.56

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	74.72%
Gross Load Factor at Customer	E	46.96%
Net-to-Gross (Energy)	F	94.0%
Net-to-Gross (Demand)	G	94.0%
Transmission Loss Factor (Energy)	H	7.092%
Transmission Loss Factor (Demand)	I	8.354%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$1,287
MTRC Non-Energy Benefit Adder	**M**	$517
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.7664 kW
Gross Annual kWh Saved at Customer	(B x E x C)	4,114 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,867 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	4,162 kWh

Program Summary All Participants

Total Budget	N	**$728,856**
Gross kW Saved at Customer	O	1,282 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**982 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	5,273,725 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	5,273,725 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	4,957,302 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**5,335,684 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,649,436**
TRC Net Benefits without Adder	(O x (L - M))	**$986,588**
Utility Program Cost per kWh Lifetime		**$0.0076**
Utility Program Cost per kW at Gen		**$742**

SCHOOL EDUCATION KITS — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$514,720	$514,720	$514,720
Transmission & Distribution Capaci	N/A	$59,742	$59,742	$59,742
Marginal Energy	N/A	$1,311,154	$1,311,154	$1,311,154
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$1,885,617
Non-Energy Benefits Adder (20.3%)				$382,699
Subtotal	N/A	$1,885,617	$1,885,617	$2,268,316
Other Benefits				
Bill Reduction - Electric	$7,834,795	N/A	N/A	N/A
Participant Rebates and Incentives	$1,206,658	N/A	N/A	$1,206,658
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$696,139	N/A	N/A	$329,525
Subtotal	$9,737,592	N/A	N/A	$1,536,183
Total Benefits	$9,737,592	$1,885,617	$1,885,617	$3,804,499
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$565,959	$565,959	$565,959
Advertising/Promotion/Customer Ed	N/A	$488	$488	$488
Participant Rebates and Incentives	N/A	$1,206,658	$1,206,658	$1,206,658
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$1,773,105	$1,773,105	$1,773,105
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$6,429,667	N/A
Subtotal	N/A	N/A	$6,429,667	N/A
Participant Costs				
Incremental Capital Costs	$1,019,313	N/A	N/A	$1,019,313
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$1,019,313	N/A	N/A	$1,019,313
Total Costs	$1,019,313	$1,773,105	$8,202,772	$2,792,418
Net Benefit (Cost)	$8,718,279	$112,512	($6,317,155)	$1,012,081
Benefit/Cost Ratio	9.55	1.06	0.23	1.36

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	6.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	11.66%
Gross Load Factor at Customer	E	12.51%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.989%
Transmission Loss Factor (Demand)	I	8.453%
Installation Rate (Energy)	**J**	**84.4%**
Installation Rate (Demand)	**K**	**85.6%**
MTRC Net Benefit (Cost)	**L**	$101
MTRC Non-Energy Benefit Adder	**M**	$38
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.1090 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,096 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	925 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	995 kWh

Program Summary All Participants

Total Budget	N	**$1,773,105**
Gross kW Saved at Customer	O	10,038 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**1,095 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	11,004,480 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	9,287,864 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	9,287,864 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**9,985,776 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,012,081**
TRC Net Benefits without Adder	(O x (L - M))	**$629,382**
Utility Program Cost per kWh Lifetime		**$0.0295**
Utility Program Cost per kW at Gen		**$1,620**

THERMOSTAT OPTIMIZATION — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$944,164	$944,164	$944,164
Transmission & Distribution Capac	N/A	$100,933	$100,933	$100,933
Marginal Energy	N/A	$225,405	$225,405	$225,405
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$1,270,502
Non-Energy Benefits Adder (20.1%)				$254,881
Subtotal	N/A	$1,270,502	$1,270,502	$1,525,383
Other Benefits				
Bill Reduction - Electric	$743,477	N/A	N/A	N/A
Participant Rebates and Incentives	$216,349	N/A	N/A	$216,349
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$959,826	N/A	N/A	$216,349
Total Benefits	$959,826	$1,270,502	$1,270,502	$1,741,732
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$18,628	$18,628	$18,628
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$216,349	$216,349	$216,349
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$234,977	$234,977	$234,977
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$743,477	N/A
Subtotal	N/A	N/A	$743,477	N/A
Participant Costs				
Incremental Capital Costs	$706,965	N/A	N/A	$706,965
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$706,965	N/A	N/A	$706,965
Total Costs	$706,965	$234,977	$978,454	$941,942
Net Benefit (Cost)	$252,861	$1,035,525	$292,048	$799,790
Benefit/Cost Ratio	1.36	5.41	1.30	1.85

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	10.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	75.95%
Gross Load Factor at Customer	E	6.55%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.373%
Transmission Loss Factor (Demand)	I	8.046%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$574
MTRC Non-Energy Benefit Adder	**M**	$183
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.8260 kW
Gross Annual kWh Saved at Customer	(B x E x C)	574 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	574 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	619 kWh

Program Summary All Participants

Total Budget	N	**$234,977**
Gross kW Saved at Customer	O	1,394 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**1,151 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	799,433 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	799,433 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	799,433 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**863,064 kWh**
TRC Net Benefits with Adder	(O x L)	**$799,790**
TRC Net Benefits without Adder	(O x (L - M))	**$544,909**
Utility Program Cost per kWh Lifetime		**$0.0272**
Utility Program Cost per kW at Gen		**$204**

WATER HEATING — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$13,892	$13,892	$13,892
Transmission & Distribution Capac	N/A	$1,552	$1,552	$1,552
Marginal Energy	N/A	$30,109	$30,109	$30,109
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$45,553
Non-Energy Benefits Adder (20.2%)				$9,224
Subtotal	N/A	$45,553	$45,553	$54,777
Other Benefits				
Bill Reduction - Electric	$90,013	N/A	N/A	N/A
Participant Rebates and Incentives	$12,506	N/A	N/A	$12,506
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$102,520	N/A	N/A	$12,506
Total Benefits	$102,520	$45,553	$45,553	$67,283
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$38,195	$38,195	$38,195
Advertising/Promotion/Customer Ed	N/A	$225	$225	$225
Participant Rebates and Incentives	N/A	$12,506	$12,506	$12,506
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$50,927	$50,927	$50,927
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$90,013	N/A
Subtotal	N/A	N/A	$90,013	N/A
Participant Costs				
Incremental Capital Costs	$17,121	N/A	N/A	$17,121
Incremental O&M Costs	$3,274	N/A	N/A	$3,274
Subtotal	$20,395	N/A	N/A	$20,395
Total Costs	$20,395	$50,927	$140,940	$71,322
Net Benefit (Cost)	$82,125	($5,374)	($95,387)	($4,039)
Benefit/Cost Ratio	5.03	0.89	0.32	0.94

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	10.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	100.00%
Gross Load Factor at Customer	E	80.67%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.144%
Transmission Loss Factor (Demand)	I	8.315%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	-$265
MTRC Non-Energy Benefit Adder	**M**	$605
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	1.0907 kW
Gross Annual kWh Saved at Customer	(B x E x C)	7,067 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	7,067 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	7,610 kWh

Program Summary All Participants		
Total Budget	N	**$50,927**
Gross kW Saved at Customer	O	15 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**17 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	107,745 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	107,745 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	107,745 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**116,034 kWh**
TRC Net Benefits with Adder	(O x L)	**($4,039)**
TRC Net Benefits without Adder	(O x (L - M))	**($13,262)**
Utility Program Cost per kWh Lifetime		**$0.0405**
Utility Program Cost per kW at Gen		**$3,062**

ENERGY SAVINGS KIT **2019 ELECTRIC** **ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$112,569	$112,569	$112,569
Transmission & Distribution Capac	N/A	$13,136	$13,136	$13,136
Marginal Energy	N/A	$298,655	$298,655	$298,655
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$424,360
Non-Energy Benefits Adder (50.7%)				$215,352
Subtotal	N/A	$424,360	$424,360	$639,712
Other Benefits				
Bill Reduction - Electric	$1,662,092	N/A	N/A	N/A
Participant Rebates and Incentives	$228,546	N/A	N/A	$228,546
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$198,499	N/A	N/A	$137,609
Subtotal	$2,089,136	N/A	N/A	$366,155
Total Benefits	$2,089,136	$424,360	$424,360	$1,005,867
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$117,029	$117,029	$117,029
Advertising/Promotion/Customer Ed	N/A	$75	$75	$75
Participant Rebates and Incentives	N/A	$228,546	$228,546	$228,546
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$4,200	$4,200	$4,200
Subtotal	N/A	$349,850	$349,850	$349,850
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$1,262,031	N/A
Subtotal	N/A	N/A	$1,262,031	N/A
Participant Costs				
Incremental Capital Costs	$166,914	N/A	N/A	$166,914
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$166,914	N/A	N/A	$166,914
Total Costs	$166,914	$349,850	$1,611,881	$516,764
Net Benefit (Cost)	$1,922,222	$74,510	($1,187,521)	$489,102
Benefit/Cost Ratio	12.52	1.21	0.26	1.95

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	6.3 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	12.38%
Gross Load Factor at Customer	E	13.38%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.894%
Transmission Loss Factor (Demand)	I	8.545%
Installation Rate (Energy)	**J**	**76.7%**
Installation Rate (Demand)	**K**	**76.7%**
MTRC Net Benefit (Cost)	**L**	$222
MTRC Non-Energy Benefit Adder	**M**	$98
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.1039 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,172 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	899 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	966 kWh

Program Summary All Participants

Total Budget	N	**$349,850**
Gross kW Saved at Customer	O	2,201 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**229 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	2,580,564 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,979,214 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,979,214 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**2,125,765 kWh**
TRC Net Benefits with Adder	(O x L)	**$489,102**
TRC Net Benefits without Adder	(O x (L - M))	**$273,750**
Utility Program Cost per kWh Lifetime		**$0.0263**
Utility Program Cost per kW at Gen		**$1,530**

MULTIFAMILY WEATHERIZATION — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$214,654	$214,654	$214,654
Transmission & Distribution Capac	N/A	$26,138	$26,138	$26,138
Marginal Energy	N/A	$674,098	$674,098	$674,098
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$914,891
Non-Energy Benefits Adder (50.8%)				$465,175
Subtotal	N/A	$914,891	$914,891	$1,380,066
Other Benefits				
Bill Reduction - Electric	$2,726,446	N/A	N/A	N/A
Participant Rebates and Incentives	$885,524	N/A	N/A	$885,524
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$31,474	N/A	N/A	$31,474
Subtotal	$3,643,444	N/A	N/A	$916,998
Total Benefits	$3,643,444	$914,891	$914,891	$2,297,063
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$148,625	$148,625	$148,625
Advertising/Promotion/Customer Ed	N/A	$30,000	$30,000	$30,000
Participant Rebates and Incentives	N/A	$885,524	$885,524	$885,524
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$15,351	$15,351	$15,351
Subtotal	N/A	$1,079,499	$1,079,499	$1,079,499
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$2,726,446	N/A
Subtotal	N/A	N/A	$2,726,446	N/A
Participant Costs				
Incremental Capital Costs	$960,756	N/A	N/A	$960,756
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$960,756	N/A	N/A	$960,756
Total Costs	$960,756	$1,079,499	$3,805,945	$2,040,255
Net Benefit (Cost)	$2,682,688	($164,609)	($2,891,055)	$256,809
Benefit/Cost Ratio	3.79	0.85	0.24	1.13

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	33.25%
Gross Load Factor at Customer	E	42.22%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.501%
Transmission Loss Factor (Demand)	I	9.035%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$482
MTRC Non-Energy Benefit Adder	**M**	$874
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.3655 kW
Gross Annual kWh Saved at Customer	(B x E x C)	3,699 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	3,699 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	3,956 kWh

Program Summary All Participants

Total Budget	N	**$1,079,499**
Gross kW Saved at Customer	O	532 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**195 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	1,968,857 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,968,857 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,968,857 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**2,105,751 kWh**
TRC Net Benefits with Adder	(O x L)	**$256,809**
TRC Net Benefits without Adder	(O x (L - M))	**($208,367)**
Utility Program Cost per kWh Lifetime		**$0.0276**
Utility Program Cost per kW at Gen		**$5,548**

NON-PROFIT **2019 ELECTRIC** **ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$485,349	$485,349	$485,349
Transmission & Distribution Capac	N/A	$55,648	$55,648	$55,648
Marginal Energy	N/A	$625,485	$625,485	$625,485
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$1,166,482
Non-Energy Benefits Adder (50.5%)				$589,460
Subtotal	N/A	$1,166,482	$1,166,482	$1,755,943
Other Benefits				
Bill Reduction - Electric	$1,880,501	N/A	N/A	N/A
Participant Rebates and Incentives	$896,970	N/A	N/A	$896,970
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$2,777,471	N/A	N/A	$896,970
Total Benefits	$2,777,471	$1,166,482	$1,166,482	$2,652,912
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$169,099	$169,099	$169,099
Advertising/Promotion/Customer Ed	N/A	$30,000	$30,000	$30,000
Participant Rebates and Incentives	N/A	$896,970	$896,970	$896,970
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$26,291	$26,291	$26,291
Subtotal	N/A	$1,122,359	$1,122,359	$1,122,359
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$1,880,501	N/A
Subtotal	N/A	N/A	$1,880,501	N/A
Participant Costs				
Incremental Capital Costs	$1,340,125	N/A	N/A	$1,340,125
Incremental O&M Costs	$29,883	N/A	N/A	$29,883
Subtotal	$1,370,008	N/A	N/A	$1,370,008
Total Costs	$1,370,008	$1,122,359	$3,002,860	$2,492,367
Net Benefit (Cost)	$1,407,463	$44,124	($1,836,378)	$160,545
Benefit/Cost Ratio	2.03	1.04	0.39	1.06

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	18.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	67.30%
Gross Load Factor at Customer	E	32.17%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	5.861%
Transmission Loss Factor (Demand)	I	7.132%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$277
MTRC Non-Energy Benefit Adder	**M**	$1,016
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.7247 kW
Gross Annual kWh Saved at Customer	(B x E x C)	2,818 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	2,818 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2,994 kWh

Program Summary All Participants

Total Budget	N	**$1,122,359**
Gross kW Saved at Customer	O	580 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**420 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	1,634,965 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,634,965 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,634,965 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**1,736,753 kWh**
TRC Net Benefits with Adder	(O x L)	**$160,545**
TRC Net Benefits without Adder	(O x (L - M))	**($428,915)**
Utility Program Cost per kWh Lifetime		**$0.0359**
Utility Program Cost per kW at Gen		**$2,670**

SINGLE-FAMILY WEATHERIZATION — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$157,981	$157,981	$157,981
Transmission & Distribution Capaci	N/A	$19,415	$19,415	$19,415
Marginal Energy	N/A	$277,306	$277,306	$277,306
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$454,703
Non-Energy Benefits Adder (50.7%)				$230,608
Subtotal	N/A	$454,703	$454,703	$685,311
Other Benefits				
Bill Reduction - Electric	$1,228,671	N/A	N/A	N/A
Participant Rebates and Incentives	$993,401	N/A	N/A	$993,401
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$2,222,072	N/A	N/A	$993,401
Total Benefits	$2,222,072	$454,703	$454,703	$1,678,712
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$95,183	$95,183	$95,183
Advertising/Promotion/Customer Ed	N/A	$165,000	$165,000	$165,000
Participant Rebates and Incentives	N/A	$993,401	$993,401	$993,401
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$49,857	$49,857	$49,857
Subtotal	N/A	$1,303,440	$1,303,440	$1,303,440
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$1,228,671	N/A
Subtotal	N/A	N/A	$1,228,671	N/A
Participant Costs				
Incremental Capital Costs	$862,369	N/A	N/A	$862,369
Incremental O&M Costs	$6,826	N/A	N/A	$6,826
Subtotal	$869,195	N/A	N/A	$869,195
Total Costs	$869,195	$1,303,440	$2,532,111	$2,172,636
Net Benefit (Cost)	$1,352,877	($848,738)	($2,077,409)	($493,924)
Benefit/Cost Ratio	2.56	0.35	0.18	0.77

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	9.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	16.95%
Gross Load Factor at Customer	E	13.41%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	6.609%
Transmission Loss Factor (Demand)	I	8.841%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	-$400
MTRC Non-Energy Benefit Adder	**M**	$187
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.1860 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1,174 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1,174 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	1,257 kWh

Program Summary All Participants

Total Budget	N	**$1,303,440**
Gross kW Saved at Customer	O	1,233 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**229 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	1,448,289 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	1,448,289 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	1,448,289 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**1,550,777 kWh**
TRC Net Benefits with Adder	(O x L)	**($493,924)**
TRC Net Benefits without Adder	(O x (L - M))	**($724,532)**
Utility Program Cost per kWh Lifetime		**$0.0882**
Utility Program Cost per kW at Gen		**$5,682**

RESIDENTIAL DEMAND RESPONSE — 2019 — ELECTRIC — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	$3,557,895	$3,557,895	$3,557,895
Transmission & Distribution Capaci	N/A	$394,576	$394,576	$394,576
Marginal Energy	N/A	$4,589	$4,589	$4,589
Avoided Emissions (CO2)	N/A	N/A	N/A	$0
Subtotal				$3,957,061
Non-Energy Benefits Adder (20%)				$791,431
Subtotal	N/A	$3,957,061	$3,957,061	$4,748,492
Other Benefits				
Bill Reduction - Electric	$38,528	N/A	N/A	N/A
Participant Rebates and Incentives	$7,955,409	N/A	N/A	$7,955,409
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$7,993,937	N/A	N/A	$7,955,409
Total Benefits	$7,993,937	$3,957,061	$3,957,061	$12,703,901
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$2,135,957	$2,135,957	$2,135,957
Advertising/Promotion/Customer Ed	N/A	$892,028	$892,028	$892,028
Participant Rebates and Incentives	N/A	$7,955,409	$7,955,409	$7,955,409
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$29,103	$29,103	$29,103
Subtotal	N/A	$11,012,497	$11,012,497	$11,012,497
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	$38,528	N/A
Subtotal	N/A	N/A	$38,528	N/A
Participant Costs				
Incremental Capital Costs	$17,775	N/A	N/A	$17,775
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$17,775	N/A	N/A	$17,775
Total Costs	$17,775	$11,012,497	$11,051,025	$11,030,272
Net Benefit (Cost)	$7,976,162	($7,055,435)	($7,093,964)	$1,673,630
Benefit/Cost Ratio	449.73	0.36	0.36	1.15

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	13.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	36.86%
Gross Load Factor at Customer	E	0.02%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	7.118%
Transmission Loss Factor (Demand)	I	8.328%
Installation Rate (Energy)	**J**	**100.0%**
Installation Rate (Demand)	**K**	**100.0%**
MTRC Net Benefit (Cost)	**L**	$182
MTRC Non-Energy Benefit Adder	**M**	$86
Net coincident kW Saved at Generator	**(G x C x K) x D / (1 - I)**	0.4021 kW
Gross Annual kWh Saved at Customer	(B x E x C)	1 kWh
Net Annual kWh Saved at Customer	**(F x (B x E x C x J))**	1 kWh
Net Annual kWh Saved at Generator	**(F x (B x E x C x J)) / (1 - H)**	2 kWh

Program Summary All Participants

Total Budget	N	**$11,012,497**
Gross kW Saved at Customer	O	9,174 kW
Net coincident kW Saved at Generator	**(G x O x K) x D / (1 - I)**	**3,689 kW**
Gross Annual kWh Saved at Customer	(B x E x O)	13,516 kWh
Gross Installed Annual kWh Saved at Custome	**(B x E x O x J)**	13,516 kWh
Net Annual kWh Saved at Customer	(F x (B x E x O x J))	13,516 kWh
Net Annual kWh Saved at Generator	**((F x (B x E x O x J)) / (1 - H))**	**14,552 kWh**
TRC Net Benefits with Adder	(O x L)	**$1,673,630**
TRC Net Benefits without Adder	(O x (L - M))	**$882,199**
Utility Program Cost per kWh Lifetime		**$56.1154**
Utility Program Cost per kW at Gen		**$2,986**

PORTFOLIO TOTAL	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$21,885,373	$21,885,373	$21,885,373
Variable O&M Savings	N/A	$288,836	$288,836	$288,836
Demand Savings	N/A	$2,329,842	$2,329,842	$2,329,842
Subtotal				$24,504,052
Emissions Non-Energy Benefits Adder (23.7%)				$5,802,981
Subtotal	N/A	$24,504,052	$24,504,052	$30,307,033
Other Benefits				
Bill Reduction - Gas	$46,488,012	N/A	N/A	N/A
Participant Rebates and Incentives	$9,818,024	N/A	N/A	$9,818,024
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$46,514,006	N/A	N/A	$19,898,972
Subtotal	$102,820,042	N/A	N/A	$29,716,995
Total Benefits	$102,820,042	$24,504,052	$24,504,052	$60,024,028
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$3,420,569	$3,420,569	$3,420,569
Advertising/Promotion/Customer Ed	N/A	$458,788	$458,788	$458,788
Participant Rebates and Incentives	N/A	$9,818,024	$9,818,024	$9,818,024
Equipment & Installation	N/A	$60,006	$60,006	$60,006
Measurement and Verification	N/A	$714,605	$714,605	$714,605
Subtotal	N/A	$14,471,991	$14,471,991	$14,471,991
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$41,883,426	N/A
Subtotal	N/A	N/A	$41,883,426	N/A
Participant Costs				
Incremental Capital Costs	$20,724,284	N/A	N/A	$19,297,227
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$20,724,284	N/A	N/A	$19,297,227
Total Costs	$20,724,284	$14,471,991	$56,355,417	$33,769,218
Net Benefit (Cost)	$82,095,757	$10,032,060	($31,851,366)	$26,254,810
Benefit/Cost Ratio	4.96	1.69	0.43	1.78

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	14.46 years
Net-to-Gross (Weighted on Dth)	B	93.51%
Install Rate (Weighted on Dth)	C	92.4%

Program Totals:		
Total Dth/Yr Saved	F	**649,298**
Utility Costs per Net Dth/Yr	G	$22.29
Net Benefit (Cost) per Gross Dth/Yr	H	$40.44
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.94
Annual Dth/$M	($1M / G)	**44,866**
Total Utility Budget	(G x F)	**$14,471,991**
Total MTRC Net Benefits with Adder	(F x H)	**$26,254,810**
Total MTRC Net Benefits without Adder	(H - I) x F	**$20,451,829**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.54**

EE PORTFOLIO TOTAL	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$21,885,373	$21,885,373	$21,885,373
Variable O&M Savings	N/A	$288,836	$288,836	$288,836
Demand Savings	N/A	$2,329,842	$2,329,842	$2,329,842
Subtotal				$24,504,052
Emissions Non-Energy Benefits Adder (23.7%)				$5,802,981
Subtotal	N/A	$24,504,052	$24,504,052	$30,307,033
Other Benefits				
Bill Reduction - Gas	$46,488,012	N/A	N/A	N/A
Participant Rebates and Incentives	$9,818,024	N/A	N/A	$9,818,024
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$46,514,006	N/A	N/A	$19,898,972
Subtotal	$102,820,042	N/A	N/A	$29,716,995
Total Benefits	$102,820,042	$24,504,052	$24,504,052	$60,024,028
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$3,420,569	$3,420,569	$3,420,569
Advertising/Promotion/Customer Ed	N/A	$458,788	$458,788	$458,788
Participant Rebates and Incentives	N/A	$9,818,024	$9,818,024	$9,818,024
Equipment & Installation	N/A	$60,006	$60,006	$60,006
Measurement and Verification	N/A	$714,605	$714,605	$714,605
Subtotal	N/A	$14,471,991	$14,471,991	$14,471,991
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$41,883,426	N/A
Subtotal	N/A	N/A	$41,883,426	N/A
Participant Costs				
Incremental Capital Costs	$20,724,284	N/A	N/A	$19,297,227
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$20,724,284	N/A	N/A	$19,297,227
Total Costs	$20,724,284	$14,471,991	$56,355,417	$33,769,218
Net Benefit (Cost)	$82,095,757	$10,032,060	($31,851,366)	$26,254,810
Benefit/Cost Ratio	4.96	1.69	0.43	1.78

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	14.46 years
Net-to-Gross (Weighted on Dth)	B	93.51%
Install Rate (Weighted on Dth)	C	92.4%

Program Totals:		
Total Dth/Yr Saved	F	**649,298**
Utility Costs per Net Dth/Yr	G	$22.29
Net Benefit (Cost) per Gross Dth/Yr	H	$40.44
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.94
Annual Dth/$M	($1M / G)	**44,866**
Total Utility Budget	(G x F)	**$14,471,991**
Total MTRC Net Benefits with Adder	(F x H)	**$26,254,810**
Total MTRC Net Benefits without Adder	(H - I) x F	**$20,451,829**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.54**

BUSINESS PROGRAM TOTAL	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$6,273,804	$6,273,804	$6,273,804
Variable O&M Savings	N/A	$79,776	$79,776	$79,776
Demand Savings	N/A	$642,107	$642,107	$642,107
Subtotal				$6,995,686
Emissions Non-Energy Benefits Adder (20%)				$1,399,137
Subtotal	N/A	$6,995,686	$6,995,686	$8,394,824
Other Benefits				
Bill Reduction - Gas	$12,601,833	N/A	N/A	N/A
Participant Rebates and Incentives	$1,344,667	N/A	N/A	$1,344,667
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$16,478,094	N/A	N/A	$9,942,132
Subtotal	$30,424,594	N/A	N/A	$11,286,799
Total Benefits	$30,424,594	$6,995,686	$6,995,686	$19,681,622
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$719,026	$719,026	$719,026
Advertising/Promotion/Customer Ed	N/A	$48,683	$48,683	$48,683
Participant Rebates and Incentives	N/A	$1,344,667	$1,344,667	$1,344,667
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$93,568	$93,568	$93,568
Subtotal	N/A	$2,205,944	$2,205,944	$2,205,944
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$12,009,742	N/A
Subtotal	N/A	N/A	$12,009,742	N/A
Participant Costs				
Incremental Capital Costs	$5,394,860	N/A	N/A	$5,102,279
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$5,394,860	N/A	N/A	$5,102,279
Total Costs	$5,394,860	$2,205,944	$14,215,686	$7,308,224
Net Benefit (Cost)	$25,029,733	$4,789,742	($7,220,000)	$12,373,399
Benefit/Cost Ratio	5.64	3.17	0.49	2.69

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	18.01 years
Net-to-Gross (Weighted on Dth)	B	95.52%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**152,740**
Utility Costs per Net Dth/Yr	G	$14.44
Net Benefit (Cost) per Gross Dth/Yr	H	$81.01
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.16
Annual Dth/$M	($1M / G)	**69,240**
Total Utility Budget	(G x F)	**$2,205,944**
Total MTRC Net Benefits with Adder	(F x H)	**$12,373,399**
Total MTRC Net Benefits without Adder	(H - I) x F	**$10,974,261**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.80**

RESIDENTIAL PROGRAM TOTAL — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$12,925,659	$12,925,659	$12,925,659
Variable O&M Savings	N/A	$172,919	$172,919	$172,919
Demand Savings	N/A	$1,402,551	$1,402,551	$1,402,551
Subtotal				$14,501,129
Emissions Non-Energy Benefits Adder (20%)				$2,900,226
Subtotal	N/A	$14,501,129	$14,501,129	$17,401,355
Other Benefits				
Bill Reduction - Gas	$0	N/A	N/A	N/A
Participant Rebates and Incentives	$4,953,666	N/A	N/A	$4,953,666
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$8,153,364
Subtotal	$4,953,666	N/A	N/A	$13,107,029
Total Benefits	$4,953,666	$14,501,129	$14,501,129	$30,508,384
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$1,823,407	$1,823,407	$1,823,407
Advertising/Promotion/Customer Ed	N/A	$242,072	$242,072	$242,072
Participant Rebates and Incentives	N/A	$4,953,666	$4,953,666	$4,953,666
Equipment & Installation	N/A	$60,006	$60,006	$60,006
Measurement and Verification	N/A	$318,856	$318,856	$318,856
Subtotal	N/A	$7,398,006	$7,398,006	$7,398,006
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$24,508,027	N/A
Subtotal	N/A	N/A	$24,508,027	N/A
Participant Costs				
Incremental Capital Costs	$0	N/A	N/A	$10,639,151
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$0	N/A	N/A	$10,639,151
Total Costs	$0	$7,398,006	$31,906,033	$18,037,157
Net Benefit (Cost)	$4,953,666	$7,103,123	($17,404,904)	$12,471,227
Benefit/Cost Ratio	INF	1.96	0.45	1.69

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	13.10 years
Net-to-Gross (Weighted on Dth)	B	91.49%
Install Rate (Weighted on Dth)	C	88.5%

Program Totals:		
Total Dth/Yr Saved	F	**418,481**
Utility Costs per Net Dth/Yr	G	$17.68
Net Benefit (Cost) per Gross Dth/Yr	H	$29.80
Non-Energy Benefits Adder per Gross Dth/Yr	I	$6.93
Annual Dth/$M	($1M / G)	**56,567**
Total Utility Budget	(G x F)	**$7,398,006**
Total MTRC Net Benefits with Adder	(F x H)	**$12,471,227**
Total MTRC Net Benefits without Adder	(H - I) x F	**$9,571,001**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.35**

LOW-INCOME PROGRAM TOTAL — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$2,685,911	$2,685,911	$2,685,911
Variable O&M Savings	N/A	$36,142	$36,142	$36,142
Demand Savings	N/A	$285,184	$285,184	$285,184
Subtotal				$3,007,236
Emissions Non-Energy Benefits Adder (50%)				$1,503,618
Subtotal	N/A	$3,007,236	$3,007,236	$4,510,854
Other Benefits				
Bill Reduction - Gas	$5,495,088	N/A	N/A	N/A
Participant Rebates and Incentives	$3,198,670	N/A	N/A	$3,198,670
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$4,029,791	N/A	N/A	$1,803,477
Subtotal	$12,723,548	N/A	N/A	$5,002,147
Total Benefits	$12,723,548	$3,007,236	$3,007,236	$9,513,001
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$389,857	$389,857	$389,857
Advertising/Promotion/Customer Ed	N/A	$125,075	$125,075	$125,075
Participant Rebates and Incentives	N/A	$3,198,670	$3,198,670	$3,198,670
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$149,956	$149,956	$149,956
Subtotal	N/A	$3,863,558	$3,863,558	$3,863,558
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$5,365,657	N/A
Subtotal	N/A	N/A	$5,365,657	N/A
Participant Costs				
Incremental Capital Costs	$3,555,796	N/A	N/A	$3,555,796
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,555,796	N/A	N/A	$3,555,796
Total Costs	$3,555,796	$3,863,558	$9,229,214	$7,419,354
Net Benefit (Cost)	$9,167,752	($856,321)	($6,221,978)	$2,093,647
Benefit/Cost Ratio	3.58	0.78	0.33	1.28

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	14.75 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	94.9%

Program Totals:		
Total Dth/Yr Saved	F	**78,077**
Utility Costs per Net Dth/Yr	G	$49.48
Net Benefit (Cost) per Gross Dth/Yr	H	$26.82
Non-Energy Benefits Adder per Gross Dth/Yr	I	$19.26
Annual Dth/$M	($1M / G)	**20,209**
Total Utility Budget	(G x F)	**$3,863,558**
Total MTRC Net Benefits with Adder	(F x H)	**$2,093,647**
Total MTRC Net Benefits without Adder	(H - I) x F	**$590,029**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$3.35**

COMMERCIAL REFRIGERATION EFFICIENCY — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$73,947	$73,947	$73,947
Variable O&M Savings	N/A	$1,014	$1,014	$1,014
Demand Savings	N/A	$7,099	$7,099	$7,099
Subtotal				$82,059
Emissions Non-Energy Benefits Adder (20%)				$16,412
Subtotal	N/A	$82,059	$82,059	$98,471
Other Benefits				
Bill Reduction - Gas	$129,221	N/A	N/A	N/A
Participant Rebates and Incentives	$9,063	N/A	N/A	$9,063
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$50,556	N/A	N/A	$25,278
Subtotal	$188,840	N/A	N/A	$34,341
Total Benefits	$188,840	$82,059	$82,059	$132,812
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$7,708	$7,708	$7,708
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$9,063	$9,063	$9,063
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$16,771	$16,771	$16,771
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$129,221	N/A
Subtotal	N/A	N/A	$129,221	N/A
Participant Costs				
Incremental Capital Costs	$37,106	N/A	N/A	$37,106
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$37,106	N/A	N/A	$37,106
Total Costs	$37,106	$16,771	$145,992	$53,877
Net Benefit (Cost)	$151,734	$65,288	($63,933)	$78,935
Benefit/Cost Ratio	5.09	4.89	0.56	2.47

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	18.62 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**1,912**
Utility Costs per Net Dth/Yr	G	$8.77
Net Benefit (Cost) per Gross Dth/Yr	H	$41.29
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.58
Annual Dth/$M	($1M / G)	**114,000**
Total Utility Budget	(G x F)	**$16,771**
Total MTRC Net Benefits with Adder	(F x H)	**$78,935**
Total MTRC Net Benefits without Adder	(H - I) x F	**$62,523**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.47**

CUSTOM EFFICIENCY	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$214,474	$214,474	$214,474
Variable O&M Savings	N/A	$2,891	$2,891	$2,891
Demand Savings	N/A	$20,247	$20,247	$20,247
Subtotal				$237,611
Emissions Non-Energy Benefits Adder (20%)				$47,522
Subtotal	N/A	$237,611	$237,611	$285,134
Other Benefits				
Bill Reduction - Gas	$430,781	N/A	N/A	N/A
Participant Rebates and Incentives	$24,018	N/A	N/A	$24,018
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$454,799	N/A	N/A	$24,018
Total Benefits	$454,799	$237,611	$237,611	$309,152
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$30,993	$30,993	$30,993
Advertising/Promotion/Customer Ed	N/A	$36	$36	$36
Participant Rebates and Incentives	N/A	$24,018	$24,018	$24,018
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$55,047	$55,047	$55,047
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$374,780	N/A
Subtotal	N/A	N/A	$374,780	N/A
Participant Costs				
Incremental Capital Costs	$228,026	N/A	N/A	$198,383
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$228,026	N/A	N/A	$198,383
Total Costs	$228,026	$55,047	$429,826	$253,429
Net Benefit (Cost)	$226,773	$182,565	($192,215)	$55,722
Benefit/Cost Ratio	1.99	4.32	0.55	1.22

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	20.00 years
Net-to-Gross (Weighted on Dth)	B	87.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**5,224**
Utility Costs per Net Dth/Yr	G	$10.54
Net Benefit (Cost) per Gross Dth/Yr	H	$10.67
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.10
Annual Dth/$M	($1M / G)	**94,900**
Total Utility Budget	(G x F)	**$55,047**
Total MTRC Net Benefits with Adder	(F x H)	**$55,722**
Total MTRC Net Benefits without Adder	(H - I) x F	**$8,200**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.53**

ENERGY MANAGEMENT SYSTEMS — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$123,088	$123,088	$123,088
Variable O&M Savings	N/A	$1,638	$1,638	$1,638
Demand Savings	N/A	$13,329	$13,329	$13,329
Subtotal				$138,055
Emissions Non-Energy Benefits Adder (20%)				$27,611
Subtotal	N/A	$138,055	$138,055	$165,666
Other Benefits				
Bill Reduction - Gas	$263,784	N/A	N/A	N/A
Participant Rebates and Incentives	$23,104	N/A	N/A	$23,104
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$123,742	N/A	N/A	$83,521
Subtotal	$410,630	N/A	N/A	$106,625
Total Benefits	$410,630	$138,055	$138,055	$272,291
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$12,317	$12,317	$12,317
Advertising/Promotion/Customer Ed	N/A	$90	$90	$90
Participant Rebates and Incentives	N/A	$23,104	$23,104	$23,104
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$35,512	$35,512	$35,512
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$237,405	N/A
Subtotal	N/A	N/A	$237,405	N/A
Participant Costs				
Incremental Capital Costs	$226,653	N/A	N/A	$203,988
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$226,653	N/A	N/A	$203,988
Total Costs	$226,653	$35,512	$272,917	$239,499
Net Benefit (Cost)	$183,977	$102,544	($134,862)	$32,792
Benefit/Cost Ratio	1.81	3.89	0.51	1.14

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	15.00 years
Net-to-Gross (Weighted on Dth)	B	90.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**3,398**
Utility Costs per Net Dth/Yr	G	$10.45
Net Benefit (Cost) per Gross Dth/Yr	H	$9.65
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.12
Annual Dth/$M	($1M / G)	**95,698**
Total Utility Budget	(G x F)	**$35,512**
Total MTRC Net Benefits with Adder	(F x H)	**$32,792**
Total MTRC Net Benefits without Adder	(H - I) x F	**$5,181**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.70**

HEATING EFFICIENCY — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$671,113	$671,113	$671,113
Variable O&M Savings	N/A	$8,495	$8,495	$8,495
Demand Savings	N/A	$70,086	$70,086	$70,086
Subtotal				$749,693
Emissions Non-Energy Benefits Adder (20%)				$149,939
Subtotal	N/A	$749,693	$749,693	$899,632
Other Benefits				
Bill Reduction - Gas	$1,521,342	N/A	N/A	N/A
Participant Rebates and Incentives	$417,416	N/A	N/A	$417,416
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$1,938,757	N/A	N/A	$417,416
Total Benefits	$1,938,757	$749,693	$749,693	$1,317,047
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$214,030	$214,030	$214,030
Advertising/Promotion/Customer Ed	N/A	$36	$36	$36
Participant Rebates and Incentives	N/A	$417,416	$417,416	$417,416
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$14,100	$14,100	$14,100
Subtotal	N/A	$645,582	$645,582	$645,582
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,305,904	N/A
Subtotal	N/A	N/A	$1,305,904	N/A
Participant Costs				
Incremental Capital Costs	$850,922	N/A	N/A	$729,598
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$850,922	N/A	N/A	$729,598
Total Costs	$850,922	$645,582	$1,951,486	$1,375,180
Net Benefit (Cost)	$1,087,835	$104,111	($1,201,793)	($58,132)
Benefit/Cost Ratio	2.28	1.16	0.38	0.96

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	17.32 years
Net-to-Gross (Weighted on Dth)	B	86.00%
Install Rate (Weighted on Dth)	C	99.8%

Program Totals:		
Total Dth/Yr Saved	F	**16,422**
Utility Costs per Net Dth/Yr	G	$39.31
Net Benefit (Cost) per Gross Dth/Yr	H	($3.54)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.13
Annual Dth/$M	($1M / G)	**25,438**
Total Utility Budget	(G x F)	**$645,582**
Total MTRC Net Benefits with Adder	(F x H)	**-$58,132**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$208,071**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$2.27**

LIGHTING - SMALL BUSINESS | 2019 | GAS | ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$2,104	$2,104	$2,104
Variable O&M Savings	N/A	$32	$32	$32
Demand Savings	N/A	$247	$247	$247
Subtotal				$2,383
Emissions Non-Energy Benefits Adder (20%)				$477
Subtotal	N/A	$2,383	$2,383	$2,860
Other Benefits				
Bill Reduction - Gas	$4,194	N/A	N/A	N/A
Participant Rebates and Incentives	$98	N/A	N/A	$98
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$19,709	N/A	N/A	$10,343
Subtotal	$24,001	N/A	N/A	$10,441
Total Benefits	$24,001	$2,383	$2,383	$13,300
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$11,426	$11,426	$11,426
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$98	$98	$98
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$11,524	$11,524	$11,524
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$3,924	N/A
Subtotal	N/A	N/A	$3,924	N/A
Participant Costs				
Incremental Capital Costs	$31	N/A	N/A	$28
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$31	N/A	N/A	$28
Total Costs	$31	$11,524	$15,449	$11,552
Net Benefit (Cost)	$23,971	($9,141)	($13,065)	$1,748
Benefit/Cost Ratio	786.67	0.21	0.15	1.15

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.00 years
Net-to-Gross (Weighted on Dth)	B	92.80%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**86**
Utility Costs per Net Dth/Yr	G	$134.11
Net Benefit (Cost) per Gross Dth/Yr	H	$20.34
Non-Energy Benefits Adder per Gross Dth/Yr	I	$5.55
Annual Dth/$M	($1M / G)	**7,456**
Total Utility Budget	(G x F)	**$11,524**
Total MTRC Net Benefits with Adder	(F x H)	**$1,748**
Total MTRC Net Benefits without Adder	(H - I) x F	**$1,272**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$13.41**

MULTIFAMILY BUILDINGS	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$607,308	$607,308	$607,308
Variable O&M Savings	N/A	$8,408	$8,408	$8,408
Demand Savings	N/A	$73,699	$73,699	$73,699
Subtotal				$689,415
Emissions Non-Energy Benefits Adder (20%)				$137,883
Subtotal	N/A	$689,415	$689,415	$827,298
Other Benefits				
Bill Reduction - Gas	$1,225,280	N/A	N/A	N/A
Participant Rebates and Incentives	$349,840	N/A	N/A	$349,840
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$2,331,126	N/A	N/A	$1,764,593
Subtotal	$3,906,246	N/A	N/A	$2,114,433
Total Benefits	$3,906,246	$689,415	$689,415	$2,941,731
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$192,270	$192,270	$192,270
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$349,840	$349,840	$349,840
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$542,110	$542,110	$542,110
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,225,280	N/A
Subtotal	N/A	N/A	$1,225,280	N/A
Participant Costs				
Incremental Capital Costs	$311,300	N/A	N/A	$311,300
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$311,300	N/A	N/A	$311,300
Total Costs	$311,300	$542,110	$1,767,390	$853,410
Net Benefit (Cost)	$3,594,946	$147,305	($1,077,975)	$2,088,321
Benefit/Cost Ratio	12.55	1.27	0.39	3.45

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.67 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**21,614**
Utility Costs per Net Dth/Yr	G	$25.08
Net Benefit (Cost) per Gross Dth/Yr	H	$96.62
Non-Energy Benefits Adder per Gross Dth/Yr	I	$6.38
Annual Dth/$M	($1M / G)	**39,870**
Total Utility Budget	(G x F)	**$542,110**
Total MTRC Net Benefits with Adder	(F x H)	**$2,088,321**
Total MTRC Net Benefits without Adder	(H - I) x F	**$1,950,438**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$2.35**

NEW CONSTRUCTION	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$4,533,848	$4,533,848	$4,533,848
Variable O&M Savings	N/A	$56,470	$56,470	$56,470
Demand Savings	N/A	$451,589	$451,589	$451,589
Subtotal				$5,041,907
Emissions Non-Energy Benefits Adder (20%)				$1,008,381
Subtotal	N/A	$5,041,907	$5,041,907	$6,050,288
Other Benefits				
Bill Reduction - Gas	$8,934,092	N/A	N/A	N/A
Participant Rebates and Incentives	$520,082	N/A	N/A	$520,082
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$13,952,960	N/A	N/A	$8,058,397
Subtotal	$23,407,134	N/A	N/A	$8,578,479
Total Benefits	$23,407,134	$5,041,907	$5,041,907	$14,628,767
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$224,133	$224,133	$224,133
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$520,082	$520,082	$520,082
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$79,468	$79,468	$79,468
Subtotal	N/A	$823,684	$823,684	$823,684
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$8,649,403	N/A
Subtotal	N/A	N/A	$8,649,403	N/A
Participant Costs				
Incremental Capital Costs	$3,739,999	N/A	N/A	$3,621,136
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$3,739,999	N/A	N/A	$3,621,136
Total Costs	$3,739,999	$823,684	$9,473,087	$4,444,820
Net Benefit (Cost)	$19,667,135	$4,218,223	($4,431,180)	$10,183,947
Benefit/Cost Ratio	6.26	6.12	0.53	3.29

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	20.00 years
Net-to-Gross (Weighted on Dth)	B	97.17%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**101,181**
Utility Costs per Net Dth/Yr	G	$8.14
Net Benefit (Cost) per Gross Dth/Yr	H	$100.65
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.97
Annual Dth/$M	($1M / G)	**122,839**
Total Utility Budget	(G x F)	**$823,684**
Total MTRC Net Benefits with Adder	(F x H)	**$10,183,947**
Total MTRC Net Benefits without Adder	(H - I) x F	**$9,175,565**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.41**

RECOMMISSIONING **2019** **GAS** **ACTUAL**

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$47,922	$47,922	$47,922
Variable O&M Savings	N/A	$830	$830	$830
Demand Savings	N/A	$5,811	$5,811	$5,811
Subtotal				$54,563
Emissions Non-Energy Benefits Adder (20%)				$10,913
Subtotal	N/A	$54,563	$54,563	$65,475
Other Benefits				
Bill Reduction - Gas	$93,139	N/A	N/A	N/A
Participant Rebates and Incentives	$1,046	N/A	N/A	$1,046
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$94,185	N/A	N/A	$1,046
Total Benefits	$94,185	$54,563	$54,563	$66,522
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$24,060	$24,060	$24,060
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$1,046	$1,046	$1,046
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$25,106	$25,106	$25,106
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$83,825	N/A
Subtotal	N/A	N/A	$83,825	N/A
Participant Costs				
Incremental Capital Costs	$823	N/A	N/A	$741
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$823	N/A	N/A	$741
Total Costs	$823	$25,106	$108,931	$25,847
Net Benefit (Cost)	$93,362	$29,457	($54,368)	$40,675
Benefit/Cost Ratio	114.38	2.17	0.50	2.57

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	7.00 years
Net-to-Gross (Weighted on Dth)	B	90.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**2,903**
Utility Costs per Net Dth/Yr	G	$8.65
Net Benefit (Cost) per Gross Dth/Yr	H	$14.01
Non-Energy Benefits Adder per Gross Dth/Yr	I	$3.76
Annual Dth/$M	($1M / G)	**115,645**
Total Utility Budget	(G x F)	**$25,106**
Total MTRC Net Benefits with Adder	(F x H)	**$40,675**
Total MTRC Net Benefits without Adder	(H - I) x F	**$29,762**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.24**

ENERGY EFFICIENT SHOWERHEAD — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$751,311	$751,311	$751,311
Variable O&M Savings	N/A	$12,033	$12,033	$12,033
Demand Savings	N/A	$84,482	$84,482	$84,482
Subtotal				$847,825
Emissions Non-Energy Benefits Adder (20%)				$169,565
Subtotal	N/A	$847,825	$847,825	$1,017,390
Other Benefits				
Bill Reduction - Gas	$1,334,526	N/A	N/A	N/A
Participant Rebates and Incentives	$115,047	N/A	N/A	$115,047
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$10,901,263	N/A	N/A	$3,408,904
Subtotal	$12,350,835	N/A	N/A	$3,523,951
Total Benefits	$12,350,835	$847,825	$847,825	$4,541,341
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$244,776	$244,776	$244,776
Advertising/Promotion/Customer Ed	N/A	$657	$657	$657
Participant Rebates and Incentives	N/A	$115,047	$115,047	$115,047
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$360,480	$360,480	$360,480
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,314,870	N/A
Subtotal	N/A	N/A	$1,314,870	N/A
Participant Costs				
Incremental Capital Costs	$111,993	N/A	N/A	$110,873
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$111,993	N/A	N/A	$110,873
Total Costs	$111,993	$360,480	$1,675,350	$471,353
Net Benefit (Cost)	$12,238,842	$487,345	($827,525)	$4,069,988
Benefit/Cost Ratio	110.28	2.35	0.51	9.63

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.00 years
Net-to-Gross (Weighted on Dth)	B	99.00%
Install Rate (Weighted on Dth)	C	61.8%

Program Totals:		
Total Dth/Yr Saved	F	**32,438**
Utility Costs per Net Dth/Yr	G	$11.11
Net Benefit (Cost) per Gross Dth/Yr	H	$125.47
Non-Energy Benefits Adder per Gross Dth/Yr	I	$5.23
Annual Dth/$M	($1M / G)	**89,985**
Total Utility Budget	(G x F)	**$360,480**
Total MTRC Net Benefits with Adder	(F x H)	**$4,069,988**
Total MTRC Net Benefits without Adder	(H - I) x F	**$3,900,423**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.11**

ENERGY FEEDBACK RESIDENTIAL — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$577,251	$577,251	$577,251
Variable O&M Savings	N/A	$13,311	$13,311	$13,311
Demand Savings	N/A	$93,238	$93,238	$93,238
Subtotal				$683,801
Emissions Non-Energy Benefits Adder (20%)				$136,760
Subtotal	N/A	$683,801	$683,801	$820,561
Other Benefits				
Bill Reduction - Gas	$1,167,927	N/A	N/A	N/A
Participant Rebates and Incentives	$0	N/A	N/A	$0
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$1,167,927	N/A	N/A	$0
Total Benefits	$1,167,927	$683,801	$683,801	$820,561
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$476,554	$476,554	$476,554
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$0	$0	$0
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$476,554	$476,554	$476,554
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,167,927	N/A
Subtotal	N/A	N/A	$1,167,927	N/A
Participant Costs				
Incremental Capital Costs	$0	N/A	N/A	$0
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$0	N/A	N/A	$0
Total Costs	$0	$476,554	$1,644,481	$476,554
Net Benefit (Cost)	$1,167,927	$207,247	($960,680)	$344,007
Benefit/Cost Ratio	INF	1.43	0.42	1.72

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	3.00 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**88,743**
Utility Costs per Net Dth/Yr	G	$5.37
Net Benefit (Cost) per Gross Dth/Yr	H	$3.88
Non-Energy Benefits Adder per Gross Dth/Yr	I	$1.54
Annual Dth/$M	($1M / G)	**186,218**
Total Utility Budget	(G x F)	**$476,554**
Total MTRC Net Benefits with Adder	(F x H)	**$344,007**
Total MTRC Net Benefits without Adder	(H - I) x F	**$207,247**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.79**

ENERGY STAR NEW HOMES — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$4,650,325	$4,650,325	$4,650,325
Variable O&M Savings	N/A	$57,082	$57,082	$57,082
Demand Savings	N/A	$466,563	$466,563	$466,563
Subtotal				$5,173,971
Emissions Non-Energy Benefits Adder (20%)				$1,034,794
Subtotal	N/A	$5,173,971	$5,173,971	$6,208,765
Other Benefits				
Bill Reduction - Gas	$9,426,956	N/A	N/A	N/A
Participant Rebates and Incentives	$1,847,924	N/A	N/A	$1,847,924
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$24,942	N/A	N/A	$14,764
Subtotal	$11,299,821	N/A	N/A	$1,862,688
Total Benefits	$11,299,821	$5,173,971	$5,173,971	$8,071,453
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$383,777	$383,777	$383,777
Advertising/Promotion/Customer Ed	N/A	$4,416	$4,416	$4,416
Participant Rebates and Incentives	N/A	$1,847,924	$1,847,924	$1,847,924
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$285,915	$285,915	$285,915
Subtotal	N/A	$2,522,032	$2,522,032	$2,522,032
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$8,672,799	N/A
Subtotal	N/A	N/A	$8,672,799	N/A
Participant Costs				
Incremental Capital Costs	$4,334,864	N/A	N/A	$3,988,075
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$4,334,864	N/A	N/A	$3,988,075
Total Costs	$4,334,864	$2,522,032	$11,194,832	$6,510,108
Net Benefit (Cost)	$6,964,957	$2,651,939	($6,020,861)	$1,561,345
Benefit/Cost Ratio	2.61	2.05	0.46	1.24

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	19.96 years
Net-to-Gross (Weighted on Dth)	B	92.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**102,245**
Utility Costs per Net Dth/Yr	G	$24.67
Net Benefit (Cost) per Gross Dth/Yr	H	$15.27
Non-Energy Benefits Adder per Gross Dth/Yr	I	$10.12
Annual Dth/$M	($1M / G)	**40,541**
Total Utility Budget	(G x F)	**$2,522,032**
Total MTRC Net Benefits with Adder	(F x H)	**$1,561,345**
Total MTRC Net Benefits without Adder	(H - I) x F	**$526,551**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.24**

HIGH EFFICIENCY AIR CONDITIONING — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$745,272	$745,272	$745,272
Variable O&M Savings	N/A	$9,741	$9,741	$9,741
Demand Savings	N/A	$75,152	$75,152	$75,152
Subtotal				$830,165
Emissions Non-Energy Benefits Adder (20%)				$166,033
Subtotal	N/A	$830,165	$830,165	$996,198
Other Benefits				
Bill Reduction - Gas	$2,008,053	N/A	N/A	N/A
Participant Rebates and Incentives	$394,684	N/A	N/A	$394,684
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$2,402,737	N/A	N/A	$394,684
Total Benefits	$2,402,737	$830,165	$830,165	$1,390,882
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$0	$0	$0
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$394,684	$394,684	$394,684
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$394,684	$394,684	$394,684
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,357,444	N/A
Subtotal	N/A	N/A	$1,357,444	N/A
Participant Costs				
Incremental Capital Costs	$141,762	N/A	N/A	$95,831
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$141,762	N/A	N/A	$95,831
Total Costs	$141,762	$394,684	$1,752,128	$490,515
Net Benefit (Cost)	$2,260,975	$435,481	($921,963)	$900,367
Benefit/Cost Ratio	16.95	2.10	0.47	2.84

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	18.00 years
Net-to-Gross (Weighted on Dth)	B	67.60%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**18,401**
Utility Costs per Net Dth/Yr	G	$21.45
Net Benefit (Cost) per Gross Dth/Yr	H	$48.93
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.02
Annual Dth/$M	($1M / G)	**46,621**
Total Utility Budget	(G x F)	**$394,684**
Total MTRC Net Benefits with Adder	(F x H)	**$900,367**
Total MTRC Net Benefits without Adder	(H - I) x F	**$734,334**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.19**

HOME ENERGY SQUAD — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$92,555	$92,555	$92,555
Variable O&M Savings	N/A	$1,338	$1,338	$1,338
Demand Savings	N/A	$11,239	$11,239	$11,239
Subtotal				$105,132
Emissions Non-Energy Benefits Adder (20%)				$21,026
Subtotal	N/A	$105,132	$105,132	$126,159
Other Benefits				
Bill Reduction - Gas	$183,679	N/A	N/A	N/A
Participant Rebates and Incentives	$11,652	N/A	N/A	$11,652
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$206,795	N/A	N/A	$140,909
Subtotal	$402,126	N/A	N/A	$152,561
Total Benefits	$402,126	$105,132	$105,132	$278,720
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$100,846	$100,846	$100,846
Advertising/Promotion/Customer Ed	N/A	$89,108	$89,108	$89,108
Participant Rebates and Incentives	N/A	$11,652	$11,652	$11,652
Equipment & Installation	N/A	$60,006	$60,006	$60,006
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$261,611	$261,611	$261,611
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$183,679	N/A
Subtotal	N/A	N/A	$183,679	N/A
Participant Costs				
Incremental Capital Costs	$6,797	N/A	N/A	$6,797
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$6,797	N/A	N/A	$6,797
Total Costs	$6,797	$261,611	$445,290	$268,408
Net Benefit (Cost)	$395,329	($156,479)	($340,158)	$10,311
Benefit/Cost Ratio	59.16	0.40	0.24	1.04

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	9.85 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**3,624**
Utility Costs per Net Dth/Yr	G	$72.20
Net Benefit (Cost) per Gross Dth/Yr	H	$2.85
Non-Energy Benefits Adder per Gross Dth/Yr	I	$5.80
Annual Dth/$M	($1M / G)	**13,851**
Total Utility Budget	(G x F)	**$261,611**
Total MTRC Net Benefits with Adder	(F x H)	**$10,311**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$10,715**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$7.33**

HOME PERFORMANCE WITH ENERGY STAR — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$305,266	$305,266	$305,266
Variable O&M Savings	N/A	$3,860	$3,860	$3,860
Demand Savings	N/A	$32,621	$32,621	$32,621
Subtotal				$341,747
Emissions Non-Energy Benefits Adder (20%)				$68,349
Subtotal	N/A	$341,747	$341,747	$410,096
Other Benefits				
Bill Reduction - Gas	$513,878	N/A	N/A	N/A
Participant Rebates and Incentives	$110,627	N/A	N/A	$110,627
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$158	N/A	N/A	$137
Subtotal	$624,663	N/A	N/A	$110,764
Total Benefits	$624,663	$341,747	$341,747	$520,860
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$49,984	$49,984	$49,984
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$110,627	$110,627	$110,627
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$16,741	$16,741	$16,741
Subtotal	N/A	$177,351	$177,351	$177,351
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$595,284	N/A
Subtotal	N/A	N/A	$595,284	N/A
Participant Costs				
Incremental Capital Costs	$390,022	N/A	N/A	$451,583
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$390,022	N/A	N/A	$451,583
Total Costs	$390,022	$177,351	$772,635	$628,934
Net Benefit (Cost)	$234,641	$164,396	($430,888)	($108,074)
Benefit/Cost Ratio	1.60	1.93	0.44	0.83

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	15.99 years
Net-to-Gross (Weighted on Dth)	B	115.84%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**7,952**
Utility Costs per Net Dth/Yr	G	$22.30
Net Benefit (Cost) per Gross Dth/Yr	H	($13.59)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.60
Annual Dth/$M	($1M / G)	**44,837**
Total Utility Budget	(G x F)	**$177,351**
Total MTRC Net Benefits with Adder	(F x H)	**-$108,074**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$176,423**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.39**

INSULATION & AIR SEALING — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$720,291	$720,291	$720,291
Variable O&M Savings	N/A	$9,241	$9,241	$9,241
Demand Savings	N/A	$77,259	$77,259	$77,259
Subtotal				$806,791
Emissions Non-Energy Benefits Adder (20%)				$161,358
Subtotal	N/A	$806,791	$806,791	$968,149
Other Benefits				
Bill Reduction - Gas	$1,606,798	N/A	N/A	N/A
Participant Rebates and Incentives	$357,370	N/A	N/A	$357,370
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$1,964,168	N/A	N/A	$357,370
Total Benefits	$1,964,168	$806,791	$806,791	$1,325,519
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$21,033	$21,033	$21,033
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$357,370	$357,370	$357,370
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$1,800	$1,800	$1,800
Subtotal	N/A	$380,203	$380,203	$380,203
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,430,050	N/A
Subtotal	N/A	N/A	$1,430,050	N/A
Participant Costs				
Incremental Capital Costs	$1,269,033	N/A	N/A	$1,129,440
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$1,269,033	N/A	N/A	$1,129,440
Total Costs	$1,269,033	$380,203	$1,810,253	$1,509,642
Net Benefit (Cost)	$695,135	$426,588	($1,003,462)	($184,123)
Benefit/Cost Ratio	1.55	2.12	0.45	0.88

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	15.45 years
Net-to-Gross (Weighted on Dth)	B	89.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**19,457**
Utility Costs per Net Dth/Yr	G	$19.54
Net Benefit (Cost) per Gross Dth/Yr	H	($9.46)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$8.29
Annual Dth/$M	($1M / G)	**51,175**
Total Utility Budget	(G x F)	**$380,203**
Total MTRC Net Benefits with Adder	(F x H)	**-$184,123**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$345,481**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.26**

RESIDENTIAL HEATING	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$3,039,275	$3,039,275	$3,039,275
Variable O&M Savings	N/A	$37,288	$37,288	$37,288
Demand Savings	N/A	$318,573	$318,573	$318,573
Subtotal				$3,395,136
Emissions Non-Energy Benefits Adder (20%)				$679,027
Subtotal	N/A	$3,395,136	$3,395,136	$4,074,164
Other Benefits				
Bill Reduction - Gas	$6,707,057	N/A	N/A	N/A
Participant Rebates and Incentives	$1,687,550	N/A	N/A	$1,687,550
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$8,394,607	N/A	N/A	$1,687,550
Total Benefits	$8,394,607	$3,395,136	$3,395,136	$5,761,714
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$67,987	$67,987	$67,987
Advertising/Promotion/Customer Ed	N/A	$7,289	$7,289	$7,289
Participant Rebates and Incentives	N/A	$1,687,550	$1,687,550	$1,687,550
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$11,100	$11,100	$11,100
Subtotal	N/A	$1,773,926	$1,773,926	$1,773,926
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$5,768,069	N/A
Subtotal	N/A	N/A	$5,768,069	N/A
Participant Costs				
Incremental Capital Costs	$4,363,600	N/A	N/A	$3,752,696
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$4,363,600	N/A	N/A	$3,752,696
Total Costs	$4,363,600	$1,773,926	$7,541,995	$5,526,622
Net Benefit (Cost)	$4,031,007	$1,621,210	($4,146,859)	$235,091
Benefit/Cost Ratio	1.92	1.91	0.45	1.04

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	18.00 years
Net-to-Gross (Weighted on Dth)	B	86.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**69,970**
Utility Costs per Net Dth/Yr	G	$25.35
Net Benefit (Cost) per Gross Dth/Yr	H	$3.36
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.70
Annual Dth/$M	($1M / G)	**39,443**
Total Utility Budget	(G x F)	**$1,773,926**
Total MTRC Net Benefits with Adder	(F x H)	**$235,091**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$443,936**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.41**

SCHOOL EDUCATION KITS — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$1,169,891	$1,169,891	$1,169,891
Variable O&M Savings	N/A	$17,135	$17,135	$17,135
Demand Savings	N/A	$139,890	$139,890	$139,890
Subtotal				$1,326,916
Emissions Non-Energy Benefits Adder (20%)				$265,383
Subtotal	N/A	$1,326,916	$1,326,916	$1,592,299
Other Benefits				
Bill Reduction - Gas	$3,707,453	N/A	N/A	N/A
Participant Rebates and Incentives	$208,444	N/A	N/A	$208,444
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$14,872,964	N/A	N/A	$4,588,650
Subtotal	$18,788,861	N/A	N/A	$4,797,094
Total Benefits	$18,788,861	$1,326,916	$1,326,916	$6,389,392
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$439,152	$439,152	$439,152
Advertising/Promotion/Customer Ed	N/A	$244	$244	$244
Participant Rebates and Incentives	N/A	$208,444	$208,444	$208,444
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$647,840	$647,840	$647,840
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$2,328,685	N/A
Subtotal	N/A	N/A	$2,328,685	N/A
Participant Costs				
Incremental Capital Costs	$191,414	N/A	N/A	$191,414
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$191,414	N/A	N/A	$191,414
Total Costs	$191,414	$647,840	$2,976,525	$839,254
Net Benefit (Cost)	$18,597,447	$679,076	($1,649,609)	$5,550,139
Benefit/Cost Ratio	98.16	2.05	0.45	7.61

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.00 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	47.3%

Program Totals:		
Total Dth/Yr Saved	F	**45,946**
Utility Costs per Net Dth/Yr	G	$14.10
Net Benefit (Cost) per Gross Dth/Yr	H	$120.80
Non-Energy Benefits Adder per Gross Dth/Yr	I	$5.78
Annual Dth/$M	($1M / G)	**70,922**
Total Utility Budget	(G x F)	**$647,840**
Total MTRC Net Benefits with Adder	(F x H)	**$5,550,139**
Total MTRC Net Benefits without Adder	(H - I) x F	**$5,284,756**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.41**

THERMOSTAT OPTIMIZATION — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$667,435	$667,435	$667,435
Variable O&M Savings	N/A	$9,381	$9,381	$9,381
Demand Savings	N/A	$82,240	$82,240	$82,240
Subtotal				$759,056
Emissions Non-Energy Benefits Adder (20%)				$151,811
Subtotal	N/A	$759,056	$759,056	$910,867
Other Benefits				
Bill Reduction - Gas	$1,279,321	N/A	N/A	N/A
Participant Rebates and Incentives	$151,235	N/A	N/A	$151,235
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$1,430,557	N/A	N/A	$151,235
Total Benefits	$1,430,557	$759,056	$759,056	$1,062,102
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$4,520	$4,520	$4,520
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$151,235	$151,235	$151,235
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$0	$0	$0
Subtotal	N/A	$155,755	$155,755	$155,755
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$1,279,321	N/A
Subtotal	N/A	N/A	$1,279,321	N/A
Participant Costs				
Incremental Capital Costs	$447,149	N/A	N/A	$447,149
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$447,149	N/A	N/A	$447,149
Total Costs	$447,149	$155,755	$1,435,077	$602,905
Net Benefit (Cost)	$983,407	$603,300	($676,021)	$459,198
Benefit/Cost Ratio	3.20	4.87	0.53	1.76

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.00 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**25,082**
Utility Costs per Net Dth/Yr	G	$6.21
Net Benefit (Cost) per Gross Dth/Yr	H	$18.31
Non-Energy Benefits Adder per Gross Dth/Yr	I	$6.05
Annual Dth/$M	($1M / G)	**161,037**
Total Utility Budget	(G x F)	**$155,755**
Total MTRC Net Benefits with Adder	(F x H)	**$459,198**
Total MTRC Net Benefits without Adder	(H - I) x F	**$307,386**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.62**

WATER HEATING	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$206,787	$206,787	$206,787
Variable O&M Savings	N/A	$2,509	$2,509	$2,509
Demand Savings	N/A	$21,294	$21,294	$21,294
Subtotal				$230,589
Emissions Non-Energy Benefits Adder (20%)				$46,118
Subtotal	N/A	$230,589	$230,589	$276,707
Other Benefits				
Bill Reduction - Gas	$455,443	N/A	N/A	N/A
Participant Rebates and Incentives	$69,133	N/A	N/A	$69,133
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$0	N/A	N/A	$0
Subtotal	$524,576	N/A	N/A	$69,133
Total Benefits	$524,576	$230,589	$230,589	$345,839
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$26,048	$26,048	$26,048
Advertising/Promotion/Customer Ed	N/A	$0	$0	$0
Participant Rebates and Incentives	N/A	$69,133	$69,133	$69,133
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$3,300	$3,300	$3,300
Subtotal	N/A	$98,480	$98,480	$98,480
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$409,899	N/A
Subtotal	N/A	N/A	$409,899	N/A
Participant Costs				
Incremental Capital Costs	$516,991	N/A	N/A	$465,292
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$516,991	N/A	N/A	$465,292
Total Costs	$516,991	$98,480	$508,379	$563,773
Net Benefit (Cost)	$7,584	$132,109	($277,790)	($217,933)
Benefit/Cost Ratio	1.01	2.34	0.45	0.61

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	18.92 years
Net-to-Gross (Weighted on Dth)	B	90.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**4,625**
Utility Costs per Net Dth/Yr	G	$21.29
Net Benefit (Cost) per Gross Dth/Yr	H	($47.12)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$9.97
Annual Dth/$M	($1M / G)	**46,961**
Total Utility Budget	(G x F)	**$98,480**
Total MTRC Net Benefits with Adder	(F x H)	**-$217,933**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$264,051**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$1.13**

ENERGY SAVINGS KIT	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$348,286	$348,286	$348,286
Variable O&M Savings	N/A	$5,196	$5,196	$5,196
Demand Savings	N/A	$41,093	$41,093	$41,093
Subtotal				$394,575
Emissions Non-Energy Benefits Adder (50%)				$197,287
Subtotal	N/A	$394,575	$394,575	$591,862
Other Benefits				
Bill Reduction - Gas	$825,047	N/A	N/A	N/A
Participant Rebates and Incentives	$50,801	N/A	N/A	$50,801
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$3,355,484	N/A	N/A	$1,423,367
Subtotal	$4,231,332	N/A	N/A	$1,474,167
Total Benefits	$4,231,332	$394,575	$394,575	$2,066,029
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$57,035	$57,035	$57,035
Advertising/Promotion/Customer Ed	N/A	$75	$75	$75
Participant Rebates and Incentives	N/A	$50,801	$50,801	$50,801
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$1,800	$1,800	$1,800
Subtotal	N/A	$109,711	$109,711	$109,711
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$695,616	N/A
Subtotal	N/A	N/A	$695,616	N/A
Participant Costs				
Incremental Capital Costs	$43,836	N/A	N/A	$43,836
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$43,836	N/A	N/A	$43,836
Total Costs	$43,836	$109,711	$805,327	$153,547
Net Benefit (Cost)	$4,187,496	$284,864	($410,752)	$1,912,482
Benefit/Cost Ratio	96.53	3.60	0.49	13.46

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	10.00 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	69.3%

Program Totals:		
Total Dth/Yr Saved	F	**13,949**
Utility Costs per Net Dth/Yr	G	$7.86
Net Benefit (Cost) per Gross Dth/Yr	H	$137.10
Non-Energy Benefits Adder per Gross Dth/Yr	I	$14.14
Annual Dth/$M	($1M / G)	**127,147**
Total Utility Budget	(G x F)	**$109,711**
Total MTRC Net Benefits with Adder	(F x H)	**$1,912,482**
Total MTRC Net Benefits without Adder	(H - I) x F	**$1,715,195**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$0.79**

MULTIFAMILY WEATHERIZATION	2019	GAS	ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$319,906	$319,906	$319,906
Variable O&M Savings	N/A	$4,447	$4,447	$4,447
Demand Savings	N/A	$34,276	$34,276	$34,276
Subtotal				$358,629
Emissions Non-Energy Benefits Adder (50%)				$179,314
Subtotal	N/A	$358,629	$358,629	$537,943
Other Benefits				
Bill Reduction - Gas	$640,674	N/A	N/A	N/A
Participant Rebates and Incentives	$561,711	N/A	N/A	$561,711
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$354,307	N/A	N/A	$177,154
Subtotal	$1,556,692	N/A	N/A	$738,864
Total Benefits	$1,556,692	$358,629	$358,629	$1,276,807
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$98,068	$98,068	$98,068
Advertising/Promotion/Customer Ed	N/A	$20,000	$20,000	$20,000
Participant Rebates and Incentives	N/A	$561,711	$561,711	$561,711
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$13,065	$13,065	$13,065
Subtotal	N/A	$692,844	$692,844	$692,844
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$640,674	N/A
Subtotal	N/A	N/A	$640,674	N/A
Participant Costs				
Incremental Capital Costs	$663,706	N/A	N/A	$663,706
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$663,706	N/A	N/A	$663,706
Total Costs	$663,706	$692,844	$1,333,518	$1,356,550
Net Benefit (Cost)	$892,986	($334,215)	($974,890)	($79,743)
Benefit/Cost Ratio	2.35	0.52	0.27	0.94

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	14.15 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**9,574**
Utility Costs per Net Dth/Yr	G	$72.37
Net Benefit (Cost) per Gross Dth/Yr	H	($8.33)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$18.73
Annual Dth/$M	($1M / G)	**13,818**
Total Utility Budget	(G x F)	**$692,844**
Total MTRC Net Benefits with Adder	(F x H)	**-$79,743**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$259,057**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$5.11**

NON-PROFIT			2019 GAS		ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$67,837	$67,837	$67,837
Variable O&M Savings	N/A	$899	$899	$899
Demand Savings	N/A	$7,036	$7,036	$7,036
Subtotal				$75,772
Emissions Non-Energy Benefits Adder (50%)				$37,886
Subtotal	N/A	$75,772	$75,772	$113,658
Other Benefits				
Bill Reduction - Gas	$135,626	N/A	N/A	N/A
Participant Rebates and Incentives	$123,649	N/A	N/A	$123,649
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$5,419	N/A	N/A	$2,710
Subtotal	$264,694	N/A	N/A	$126,359
Total Benefits	$264,694	$75,772	$75,772	$240,017
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$70,671	$70,671	$70,671
Advertising/Promotion/Customer Ed	N/A	$20,000	$20,000	$20,000
Participant Rebates and Incentives	N/A	$123,649	$123,649	$123,649
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$9,968	$9,968	$9,968
Subtotal	N/A	$224,288	$224,288	$224,288
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$135,626	N/A
Subtotal	N/A	N/A	$135,626	N/A
Participant Costs				
Incremental Capital Costs	$142,274	N/A	N/A	$142,274
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$142,274	N/A	N/A	$142,274
Total Costs	$142,274	$224,288	$359,914	$366,562
Net Benefit (Cost)	$122,420	($148,516)	($284,142)	($126,545)
Benefit/Cost Ratio	1.86	0.34	0.21	0.65

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	16.41 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**1,779**
Utility Costs per Net Dth/Yr	G	$126.05
Net Benefit (Cost) per Gross Dth/Yr	H	($71.12)
Non-Energy Benefits Adder per Gross Dth/Yr	I	$21.29
Annual Dth/$M	($1M / G)	**7,933**
Total Utility Budget	(G x F)	**$224,288**
Total MTRC Net Benefits with Adder	(F x H)	**-$126,545**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$164,431**

Utility Program Cost per Net Dth Lifetime	(G / A)	**$7.68**

SINGLE-FAMILY WEATHERIZATION — 2019 — GAS — ACTUAL

2019 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Modified TRC Test ($Total)
Benefits				
Avoided Revenue Requirements				
Commodity Cost Reduction	N/A	$1,949,881	$1,949,881	$1,949,881
Variable O&M Savings	N/A	$25,600	$25,600	$25,600
Demand Savings	N/A	$202,780	$202,780	$202,780
Subtotal				$2,178,261
Emissions Non-Energy Benefits Adder (50%)				$1,089,130
Subtotal	N/A	$2,178,261	$2,178,261	$3,267,391
Other Benefits				
Bill Reduction - Gas	$3,893,740	N/A	N/A	N/A
Participant Rebates and Incentives	$2,462,509	N/A	N/A	$2,462,509
Incremental Capital Savings	$0	N/A	N/A	$0
Incremental O&M Savings	$314,580	N/A	N/A	$200,247
Subtotal	$6,670,830	N/A	N/A	$2,662,756
Total Benefits	$6,670,830	$2,178,261	$2,178,261	$5,930,147
Costs				
Utility Project Costs				
Program Planning & Design	N/A	$0	$0	$0
Administration & Program Delivery	N/A	$164,082	$164,082	$164,082
Advertising/Promotion/Customer Ed	N/A	$85,000	$85,000	$85,000
Participant Rebates and Incentives	N/A	$2,462,509	$2,462,509	$2,462,509
Equipment & Installation	N/A	$0	$0	$0
Measurement and Verification	N/A	$125,123	$125,123	$125,123
Subtotal	N/A	$2,836,715	$2,836,715	$2,836,715
Utility Revenue Reduction				
Revenue Reduction - Gas	N/A	N/A	$3,893,740	N/A
Subtotal	N/A	N/A	$3,893,740	N/A
Participant Costs				
Incremental Capital Costs	$2,705,980	N/A	N/A	$2,705,980
Incremental O&M Costs	$0	N/A	N/A	$0
Subtotal	$2,705,980	N/A	N/A	$2,705,980
Total Costs	$2,705,980	$2,836,715	$6,730,455	$5,542,695
Net Benefit (Cost)	$3,964,850	($658,454)	($4,552,194)	$387,453
Benefit/Cost Ratio	2.47	0.77	0.32	1.07

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

Input Summary and Totals

Program Assumptions:		
Lifetime (Weighted on Dth)	A	16.06 years
Net-to-Gross (Weighted on Dth)	B	100.00%
Install Rate (Weighted on Dth)	C	100.0%

Program Totals:		
Total Dth/Yr Saved	F	**52,774**
Utility Costs per Net Dth/Yr	G	$53.75
Net Benefit (Cost) per Gross Dth/Yr	H	$7.34
Non-Energy Benefits Adder per Gross Dth/Yr	I	$20.64
Annual Dth/$M	($1M / G)	**18,604**
Total Utility Budget	(G x F)	**$2,836,715**
Total MTRC Net Benefits with Adder	(F x H)	**$387,453**
Total MTRC Net Benefits without Adder	(H - I) x F	**-$701,678**
Utility Program Cost per Net Dth Lifetime	(G / A)	**$3.35**

CERTIFICATE OF SERVICE

I hereby certify that on April 1, 2020 the foregoing document was filed with the Commission via e-file and served on those parties shown on the Commission's Certificate of Service accompanying such filing.

By: /s/ Alicia D. Harvey