Xcel Energy®

2020

Extension Plan

Minnesota Electric and Natural Gas
Conservation Improvement Program

Docket No. E,G002/CIP-16-115

414 Nicollet Mall
Minneapolis, MN 55401

July 1, 2019

—Via Electronic Filing—

Mr. Joseph Sullivan
Deputy Commissioner
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
Saint Paul, MN 55101-2198

RE: 2020 EXTENSION TO 2017-2019 MINNESOTA ELECTRIC AND NATURAL GAS CONSERVATION IMPROVEMENT PROGRAM
DOCKET NO. E,G002/CIP-16-115

Dear Deputy Commissioner Sullivan:

Northern States Power Company, doing business as Xcel Energy, respectfully submits to the Minnesota Department of Commerce, Division of Energy Resources this 2020 Extension to the Company's 2017-2019 Triennial Plan for its Minnesota Electric and Natural Gas Conservation Improvement Program. This Plan is filed pursuant to Minn. Stat. § 216B.2401, 216B.241 and 216B.2411 as well as Minn. R.7690.0500.

We have electronically filed this document through the eDockets system maintained by the Minnesota Department of Commerce and the Minnesota Public Utilities Commission. By copy of this transmittal letter, Xcel Energy is notifying persons on the attached service list of this filing.

Parties wishing to access our 2020 CIP Extension Plan can retrieve the document by going to the eDockets homepage and searching for Docket No. E,G002/CIP-16-115. We provide a direct link to the eDockets website: https://www.edockets.state.mn.us/EFiling/home.jsp.

If you have any questions regarding this filing, please contact Aaron Tinjum at aaron.j.tinjum@xcelenergy.com or (612) 342-8967.

Sincerely,

/s/

SHAWN WHITE
MANAGER
DSM REGULATORY STRATEGY & PLANNING

Enclosures
c: Service Lists

CERTIFICATE OF SERVICE

I, Jim Erickson, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota; or

xx by electronic filing.

Docket No.: E,G002/CIP-16-115 & CIP Special Service List

Dated this 1st day of July 2019.

/s/

_____

Jim Erickson
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Tom	Balster	tombalster@alliantenergy.com	Interstate Power & Light Company	PO Box 351 200 1st St SE Cedar Rapids, IA 524060351	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
Ian	Dobson	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_16-115_G002,E002.CIP-16-115
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Pat	Green	N/A	N Energy Dev	City Hall 401 E 21st St Hibbing, MN 55746	Paper Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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Scott	Hautala	scotth@hpuc.com	Hibbing Public Utilities	1902 E 6th Ave Hibbing, MN 55746	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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Deborah	Knoll	dknoll@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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Joyce	Peppin	joyce@mrea.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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Bill	Poppert	info@technologycos.com	Technology North	2433 Highwood Ave St. Paul, MN 55119	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
Dave	Reinke	dreinke@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024-9583	Electronic Service	No	OFF_SL_16-115_G002,E002.CIP-16-115
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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Department of Commerce, Division of Energy Resources ("Department") the Company's 2020 Extension Plan filing to our 2017-2019 Conservation Improvement Program (CIP) Triennial Plan.

This Extension Plan proposes annual savings goals of 1.5 percent of retail sales for our electric portfolio and 1 percent for our natural gas portfolio, which is a direct extension of the Company's 2019 savings goals. To meet our proposed savings goals in 2020, the Company will continue our practice of offering a wide variety of energy-saving programs to meet the needs of our business, residential and low-income customers.

While this Extension Plan is largely a continuation of our 2019 program year, it also applies approved escalation rates and features several modification requests that have been discussed with Department Staff. Specific program changes are presented in the individual program descriptions throughout the 2020 Extension Plan. The approved escalation rates and proposed modifications are in direct compliance with the Deputy Commissioner's Decision to extend 2017-2019 CIP Triennial Plans to 2020, which was issued on April 11, 2019 (Docket No. E,G002/CIP-16-115). Table 1 below overviews the Company's proposed electric and gas program goals and budgets for 2020.

Table 1: Goals and Budgets as a Percent of Retail Sales

	Electric				Gas			
Year	**Budget**	**Proposed Energy Savings (GWh)**	**Total Adjusted Sales (GWh)**	**Savings as % of Retail Sales**	**Budget**	**Proposed Energy Savings (Dth)**	**Total Adjusted Sales (Dth)**	**Savings as % of Retail Sales**
2020	$102,371,401	454	28,767	1.58%	$18,730,192	786,334	71,897,513	1.09%

While there has not yet been a final decision on the 2020 DSM shared savings incentive mechanism, the Company has put forth our Extension Plan with the expectation that the DSM incentive will remain unchanged in 2020 and avoided cost assumptions will be implemented as described in the Deputy Commissioner's decision (Docket No. E,G002 CIP-16-115). By maintaining the current incentive framework, the Company will be able to achieve another strong DSM energy savings performance in 2020.

The Company respectfully requests that the Department approve this filing to guide our 2020 electric and natural gas DSM activities in Minnesota. As with the Company's 2017-2019 CIP Triennial Plan, we request that the Department approve the 2020 Extension Plan's proposed goals and budgets by segment. This is consistent with the Department's policy to maintain portfolio cost-effectiveness at the segment level, rather than the program level. This approach will provide the Company with the necessary flexibility to manage specific product performance within each segment as well as the overall cost-effectiveness of our 2020 CIP Extension Plan. We present our segment-level goals for 2020 in Table 2.

Table 2: 2020 Segment-Level Goals

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Business	88,906	$42,339,176	58,094	254,306,910	22,280	$5,190,768	456,448
Residential	1,262,520	$29,703,346	46,161	141,542,491	608,321	$8,383,050	310,621
Low-Income	5,783	$2,490,344	374	3,259,191	2,054	$1,901,318	14,697
Planning	0	$8,151,775	0	0	0	$2,228,824	0
Research, Evaluations, & Pilots	38,201	$3,751,148	1,577	7,052,207	13	$596,233	4,568
Assessments	0	$1,974,981	0	0	0	$345,600	0
EUI	0	$0	0	0	0	$0	0
Alternative Filings	1,671	$13,960,630	10,500	48,000,000	0	$84,400	0
Total	1,397,081	$102,371,401	116,706	454,160,800	632,668	$18,730,192	786,334

Table 3: Executive Summary Table - 2020

2020	Electric Participants	Electric Budget	Customer kW	Generator kW	Generator kWh	Electric Utility	Electric Societal	Gas Participants	Gas Budget	Dth Savings	Gas Societal	Gas Utility
Business Segment												
Business New Construction	122	$4,671,924	5,502	4,316	23,001,531	3.77	1.84	25	$384,505	23,360	2.83	5.44
Commercial Efficiency	182	$3,709,232	4,417	3,803	28,029,199	4.72	1.83	46	$512,882	41,186	3.79	5.76
Commercial Refrigeration Efficiency	343	$362,735	1,330	237	2,165,547	2.65	1.57	51	$31,621	1,472	2.54	2.72
Cooling Efficiency	1,806	$2,676,399	2,787	2,351	6,450,540	2.30	1.28	3	$48,579	5,968	4.82	8.87
Custom Efficiency	52	$1,385,389	984	783	4,894,015	2.41	4.11	21	$225,559	17,011	2.07	6.62
Data Center Efficiency	80	$1,357,410	1,139	961	9,495,027	3.11	1.84	0	$0	0		
Efficiency Controls	70	$1,232,065	1,239	280	9,155,555	2.95	1.54	17	$184,029	16,062	1.87	6.31
Fluid Systems Optimization	347	$1,644,768	2,275	1,930	14,117,816	4.66	2.22	0	$0	0		
Foodservice Equipment	73	$54,753	109	73	501,133	5.63	1.61	67	$96,428	5,992	2.10	3.80
Heating Efficiency	64	$7,830	40	32	156,350	13.35	5.55	576	$1,455,793	122,620	2.11	3.45
Lighting Efficiency	1,623	$6,665,907	9,986	7,559	57,699,400	4.63	1.85	0	$0	0		
Motor Efficiency	1,658	$3,643,086	7,076	5,856	33,987,221	6.06	2.73	0	$0	0		
Multi-Family Building Efficiency	6,860	$1,476,811	2,746	507	3,624,863	1.18	1.24	2,280	$672,343	15,773	1.89	1.28
Process Efficiency	238	$6,764,286	8,734	5,222	46,147,183	3.90	2.78	75	$1,088,323	180,160	1.60	3.63
Recommissioning	89	$808,898	1,022	561	6,626,083	2.39	1.85	49	$203,129	21,058	3.34	3.81
Self-Direct	0	$28,312	0	0	0	0.00	0.00	0	$9,243	0	0.00	0.00
Turn Key	306	$1,680,254	1,571	928	7,990,299	2.52	1.51	70	$240,922	5,785	1.36	1.35
Business Segment Energy Efficiency Total	**13,913**	**$38,170,059**	**50,958**	**35,399**	**254,041,762**	**3.90**	**2.12**	**3,280**	**$5,153,356**	**456,448**	**2.28**	**3.79**
Electric Rate Savings	45	$559,716	9,000	4,593	170,174	4.02	4.04	0	$0	0		
Saver's Switch for Business	933	$2,388,642	18,071	3,823	9,668	1.95	1.95	0	$0	0		
Peak Partner Rewards	15	$910,277	13,279	14,279	85,307	1.63	2.10	0	$0	0		
Business Segment Load Management Total	**993**	**$3,858,636**	**40,350**	**22,694**	**265,149**	**2.17**	**2.29**	**0**	**$0**	**0**		
Business Education	14,000	$247,498	0	0	0			19,000	$37,412	0		
Small Business Lamp Recycling	60,000	$62,983	0	0	0			0	$0	0		
Indirect Business Subtotal	**74,000**	**$310,481**	**0**	**0**	**0**			**19,000**	**$37,412**	**0**		
Business Segment with Indirect Participants	**88,906**	**$42,339,176**	**91,308**	**58,094**	**254,306,910**	**3.71**	**2.12**	**22,280**	**$5,190,768**	**456,448**	**2.28**	**3.77**
Business Segment Direct Participants Only	**14,906**	**$42,028,695**	**91,308**	**58,094**	**254,306,910**	**3.74**	**2.12**	**3,280**	**$5,153,356**	**456,448**	**2.28**	**3.79**
Residential Segment												
Energy Efficient Showerhead	1,920	$41,801	114	92	1,092,357	11.94	18.80	14,080	$293,766	31,295	22.86	5.53
Energy Feedback Residential	256,320	$2,179,675	3,718	3,930	16,722,476	2.13	2.45	170,898	$330,672	24,762	1.44	1.34
Efficient New Home Construction	2,226	$752,352	1,126	981	1,012,391	2.55	1.70	960	$1,573,561	30,514	1.43	1.74
Residential Heating	10,000	$1,233,702	1,906	1,380	7,199,127	4.13	1.42	12,272	$2,517,413	120,000	2.04	3.97
Home Energy Squad	5,371	$889,545	3,975	526	4,239,092	1.22	1.30	2,200	$1,306,189	20,261	1.48	0.79
Home Lighting	146,067	$7,471,646	71,614	9,773	93,301,606	2.40	1.83	0	$0	0		
Whole Home Efficiency	230	$127,500	186	140	226,532	1.84	1.19	205	$290,615	7,998	1.25	1.99
Insulation Rebate	619	$252,072	1,210	164	1,743,586	5.80	1.92	773	$330,435	17,985	1.45	4.47
Refrigerator Recycling	7,100	$972,934	1,299	940	7,496,782	2.79	3.72	0	$0	0		
Residential Cooling	11,582	$4,139,360	5,479	5,406	3,930,467	2.19	1.34	0	$0	0		
School Education Kits	29,000	$982,930	2,466	246	2,803,479	0.69	1.05	14,000	$326,365	11,391	7.46	1.81
Water Heater Rebate	66	$85,700	37	40	288,310	1.33	1.13	1,071	$202,544	3,461	0.73	1.19
Thermostat Optimization Program	0	$0	0	0	0			0	$0	0		
Residential Segment Energy Efficiency Total	**470,501**	**$19,129,217**	**93,131**	**23,619**	**140,056,205**	**2.38**	**1.72**	**216,459**	**$7,171,559**	**267,669**	**2.22**	**2.61**
Residential Demand Response	29,665	$8,603,202	51,222	22,542	1,486,287	2.69	2.39	6,150	$108,980	42,952	8.11	20.47
Consumer Education	433,854	$765,640	0	0	0			382,912	$540,806	0		
Home Energy Audit	3,500	$691,758	0	0	0			2,800	$561,704	0		
Lamp Recycling - Residential	325,000	$513,529	0	0	0			0	$0	0		
Residential Segment with Indirect Participants	**1,262,520**	**$29,703,346**	**144,353**	**46,161**	**141,542,491**	**1.79**	**2.31**	**608,321**	**$8,383,050**	**310,621**	**2.20**	**2.50**
Residential Segment Direct Participants Only	**500,166**	**$27,732,419**	**144,353**	**46,161**	**141,542,491**	**1.86**	**2.47**	**222,609**	**$7,280,539**	**310,621**	**2.35**	**2.88**
Low Income Segment												
Home Energy Savings Program	2,117	$1,349,151	329	115	905,770	0.39	0.66	554	$1,488,341	4,919	0.38	0.25
LI Home Energy Squad	1,900	$327,675	1,305	152	1,374,942	1.16	1.43	1,500	$412,977	9,777	2.54	1.20
Multi-Family Energy Savings Program	1,766	$813,518	574	107	978,479	0.52	0.80	0	$0	0		
Low Income Segment Total	**5,783**	**$2,490,344**	**2,208**	**374**	**3,259,191**	**0.53**	**0.77**	**2,054**	**$1,901,318**	**14,697**	**0.85**	**0.46**
Planning Segment												
Application Development and Maintenance	0	$1,242,743	0	0	0			0	$455,912	0		
Advertising & Promotion	0	$6,286,899	0	0	0			0	$1,564,532	0		
CIP Training	0	$148,974	0	0	0			0	$54,847	0		
Regulatory Affairs	0	$473,159	0	0	0			0	$153,533	0		
Planning Segment Total	**0**	**$8,151,775**	**0**	**0**	**0**			**0**	**$2,228,824**	**0**		
Research, Evaluations & Pilots Segment												
Market Research	0	$953,478	0	0	0			0	$262,471	0		
Product Development	0	$1,764,124	0	0	0			0	$216,187	0		
Energy Star Retail Products	38,156	$706,966	7,999	1,345	4,113,554	3.66	1.42	0	$0	0		
Energy Information Systems	45	$326,580	423	232	2,938,653	2.06	1.87	13	$117,575	4,568	4.71	1.41
Total	**38,201**	**$3,751,148**	**8,422**	**1,577**	**7,052,207**	**0.87**	**0.80**	**13**	**$596,233**	**4,568**	**1.06**	**0.28**
PORTFOLIO SUBTOTAL	**1,395,410**	**$86,435,790**	**246,291**	**106,206**	**406,160,800**	**2.66**	**1.64**	**632,668**	**$18,300,192**	**786,334**	**2.06**	**2.40**
Anticipated Alternative Filings												
CEE One Stop Efficiency Shop	1,671	$12,964,780	10,419	10,500	48,000,000			0	$0	0		
EnerChange	0	$418,500	0	0	0			0	$46,500	0		
Energy Smart	0	$402,750	0	0	0			0	$18,500	0		
Trillion BTU	0	$174,600	0	0	0			0	$19,400	0		
Energy Intelligence	0	$0	0	0	0			0	$0	0		
Anticipated Alternative Filings Total	**1,671**	**$13,960,630**	**10,419**	**10,500**	**48,000,000**			**0**	**$84,400**	**0**		
Assessments Segment	**0**	**$1,974,981**	**0**	**0**	**0**			**0**	**$345,600**	**0**		
Made In Minnesota	**0**	**$0**	**0**	**0**	**0**			**0**	**$0**	**0**		
Electric Utility Infrastructure	**0**	**$0**	**0**	**0**	**0**			**0**	**$0**	**0**		
PORTFOLIO TOTAL	**1,397,081**	**$102,371,401**	**256,710**	**116,706**	**454,160,800**			**632,668**	**$18,730,192**	**786,334**		

COMPLIANCE WITH RULES & STATUTES

The 2020 Extension Plan fulfills Xcel Energy's compliance with Minn. Stat. § 216B.241, subd. 2(a), which requires public utilities to file CIP plans by June 1 of the applicable year. Per the Deputy Commissioner's decision to extend 2017-2019 CIP Triennial Plans to 2020(Docket No. E,G002/CIP-16-115), the filing deadline was also extended to July 1, 2019.

Additionally, in 2001, the Company received approval from the Department to file a combined gas and electric CIP Plan; we continue this approach with this Extension Plan filing.

Minn. R. 7690.0500 contains the requirements and procedures for CIP filings. Minn. Stat. § 216B.2401, 216B.241 and 216B.2411 contain provisions that the Company must meet in its CIP Plan. This section provides all of the compliance order points required therein.

Statutory Requirements

Minimum Spending Requirement

Minn. Stat. § 216B.241, requires that 2.0 percent of the Company's electric Gross Operating Revenues ("GOR") be spent on electric CIP and 0.5 percent of gas GOR be spent on gas CIP. The table below shows our spending in relation to our minimum spending requirement for 2020.

Table 4: 2020 Minimum Spending Requirement

	2011 Net Revenues (GOR – Exempt)	% of GOR	Minimum Spending Requirement	2020 Proposed Budget
Electric	$2,850,359,199	2.0%	$57,007,184	$102,371,401
Gas	$436,197,186	0.5%	$2,180,986	$18,730,192

Goals as a Percentage of Sales

Minn. Stat. § 216B.241, subd. 1c requires utilities to file a CIP Plan with no less than 1.0 percent of gross annual retail energy sales from energy conservation improvements while setting an annual statewide energy-savings goal of 1.5 percent. Table 5 shows our proposed natural gas and electric goals annually, as percent of the previous three-year (2013, 2014 & 2015) weather-normalized sales, adjusted for exempt customers as of May 15, 2016. Should additional customers be approved for CIP exemption, we may request to modify the baseline to incorporate the effect of those exemptions.

Table 5: 2020 Goals as a Percent of Sales

	Electric			Gas		
Year	**Energy Savings Proposed (MWh)**	**Total Adjusted Sales (MWh)**	**Savings (as % of Retail Sales)**	**Energy Savings Proposed (Dth)**	**Total Adjusted Sales (Dth)**	**Savings (as % of Retail Sales)**
2020	454,161	28,767,282	1.58%	786,334	71,897,513	1.09%

Low-Income Goals

The 2007 Legislature approved an amendment to Minn. Stat. § 216B.241, subd. 7, which required utilities to spend 0.4 percent of their residential natural gas GOR on low-income gas programs and 0.2 percent of their residential electric GOR on low-income electric programs, unless otherwise approved by the Commissioner. The following table provides our proposed low-income spending in comparison to the spending requirement.

Table 6: 2020 Low-Income Spending Requirement

	Residential GOR	% of GOR	Low-Income Spend Requirement	2020 Proposed Low-Income Budget
Electric	$1,079,786,206	0.2%	$2,159,572	$2,490,344
Gas	$317,126,068	0.4%	$1,268,504	$1,901,318

Research & Development Spending Cap

Minn. Stat. § 216B.241, subd. 2(c), limits spending on Research & Development ("R&D") to 10 percent of the minimum spending requirement. CIP R&D identifies, assesses, and develops new load management and energy efficiency products and services. This work enables the Company to identify and promote promising new energy saving opportunities for its customers. The following table provides our proposed R&D spending over the Extension Plan period in comparison to the spending cap.

Table 7: 2020 Research & Development Spending Cap

	% of Min Spend	Min Spend	R&D Cap	2020 Proposed R&D Budget
Electric	10%	$57,007,184	$5,700,718	$1,764,124
Gas	10%	$2,180,986	$218,099	$216,187

Distributed Energy Resources Spending Cap

Minn. Stat. § 216B.2411, subd. 1(a) allows utilities to spend up to five percent of the utility's minimum spending requirement on distributed generation projects. The Company does not have any distributed energy resources spending in CIP planned for 2020.

Previous program spending included Solar*Rewards Generation 1 and the Made in Minnesota program. The Solar*Rewards Generation 1 program ended in 2014 and is no longer included within CIP (Docket No. E002/M-13-1015, July 23, 2014). The Made in Minnesota program ended in 2017. Minn. Statute §216C.412 Subd. 2, established in 2013, required public utilities to pay a portion of their minimum spend amount towards the Made in Minnesota solar energy production incentive account beginning January 1, 2014, and each January 1 thereafter, through 2023, for a total of ten years. Minn. Stat. §216C.412 was repealed on May 31, 2017 by 2017 Minnesota Law Chapter 94, Article 10, Section 30, thus ending the Company's obligation under the statute on a going forward basis.

Lighting Use and Recycling Programs

Minn. Stat. § 216B.241, subd. 5 requires utilities to invest in projects that encourage the use of energy efficient lighting and reclamation or recycling of spent fluorescent and high intensity

discharge lamps. The Company meets this requirement through its business and residential lighting and lamp recycling programs.

Facilities Energy Efficiency
Minn. Stat. § 216B.241, subd. 1f requires all utilities to include programs in their conservation plans that facilitate professional engineering verification to qualify a building as ENERGY STAR-labeled, Leadership in Energy and Environmental Design ("LEED") certified, or Green Globes-certified. Xcel Energy's Business New Construction and Turn Key Services programs satisfy this requirement.

Other Compliance

Combined Natural Gas and Electric CIP Plan
Minn. R. 7690.0500, subp. 1, governs the submission of investor-owned electric and natural gas utilities' Conservation Improvement Programs. On March 2, 2009 the Company filed a variance request to submit a combined electric and natural gas plan on June 1, 2009 as well as with each subsequent annual status report. On May 13, 2009, the Director approved our request for all future CIP Triennial Plans and annual Status Reports.

Program Modifications
Minn. R. 7690.1400 requires utilities to file formal program modifications when:

- Proposing a new project;
- Discontinuing an existing project;
- Reducing the minimum qualifying efficiency level of a measure or technology;
- Decreasing project budgets, savings and participation goals;
- Increasing the Planning Segment annual budget by more than 25 percent; and
- Increasing the Research, Evaluations, and Pilots Segment by more than 25percent.

In the November 3, 2016 Decision on our 2017-2019 CIP Triennial Plan (Docket No. E,G002/CIP-16-115), the Deputy Commissioner discontinued the use of the informal modification process, for a formal modification process and courtesy notifications. We provide the following list of the approved modification requests and courtesy notifications submitted by the Company over the course of the 2017-2019 CIP Triennial Plan.

Table 8: Approved Program Modification Filings and Courtesy Notifications

Modification Filing Date	Programs Modified	Approval Date
April Modification Request (4/28/17)	Advertising & Promotions	6/26/17
	Home Lighting	
	Lighting Efficiency	
	Saver's Switch	
July Modification Request (7/7/17)	Home Energy Savings	8/18/17
	Residential Cooling	
September Modification	Energy Efficient Showerheads, Home	10/24/17

Request (9/22/17)	Energy Squad & Low-Income Home Energy Squad	
	Lighting Efficiency	
December Modification Request (12/21/17)	Whole Home Efficiency & Multi-Family Building Efficiency	3/29/18
February Modification Request (2/22/18)	Home Energy Savings Program (HESP)	4/28/18
	Market Research	
	Water Heater Rebate Program	
June Modification Request (6/6/18)	Lighting Efficiency	9/13/18
June Courtesy Notifications (6/6/2018)	Lighting Efficiency	n/a
	Multi-Family Building Efficiency	
September Modification Request (9/28/18)	Computer Efficiency & Data Center Efficiency	1/16/19
	Heating Efficiency	
	Refrigerator Recycling	
	Whole Home Efficiency	
September Courtesy Notifications (9/28/18)	Efficiency Controls	n/a
	Efficient New Home Construction	
	Residential Cooling	
December Modification Request (12/27/18)	Efficient New Home Construction	3/12/19
	Home Energy Savings Program (HESP)	
	Insulation Rebate	
	Lighting Efficiency	
	Turn Key Services	
December Modification Request (12/27/18)	Thermostat Optimization	4/11/19
	Residential Demand Response	
December Courtesy Notification (12/27/18)	Residential Programs	n/a
March Modification Request (3/22/19)	ENERGY STAR® Retail Products Platform (ESRPP) pilot	5/10/19
	Home Lighting	
	Motor and Drive Efficiency	

As these changes have been approved by the Department, they are already reflected in the current program descriptions, cost-benefit analyses, and technical assumptions of this Extension Plan.
In the Deputy Commissioner's Decision to extend 2017-2019 CIP Triennial Plans to 2020 (Docket No. E,G002/CIP-16-115), utilities were granted the ability to propose new modifications and programs in their Extension Plan filings. Additionally, utilities were instructed to preview any

proposed changes to the Department in pre-filing meetings. The Company previewed proposed changes with the Department on June 3, 2019.

Below is a list of programs by segment that include proposed modifications in the Company's 2020 CIP Extension Plan. Details on the proposed modifications are provided in the "program changes" section of individual program descriptions as well as the cost-benefit analyses and deemed savings technical assumptions.

Business Segment

- Motor and Drive Efficiency;
- Multi-Family Building Efficiency; and,
- Peak Partner Rewards.

Residential Segment

- Residential Demand Response & Smart Thermostat Optimization;
- School Education Kits;
- Water Heater Rebate; and,
- Whole Home Efficiency.

Planning Segment

- Advertising and Promotion.

Research, Evaluations, and Pilots Segment

- ENERGY STAR® Retail Products Platform (ESRPP) pilot.

CIP Plan Contents

Minn. R. 7690.0500, subp. 2, governs the contents of each CIP Plan. We address each content component directly in the following sections.

A. A comprehensive description of the proposed program, including a description of each project making up the program;

Please see each program and segment descriptions.

B. For each individual project, a completed project information sheet that will be provided by the department. The project information sheet can be used to provide the information required in items E and F;

We now utilize the Energy Savings Platform (ESP), a cloud-based IT platform to satisfy this requirement. All information required in items E and F have been uploaded to ESP as of July 1, 2019.

C. For each project making up the program, a description of the expected effect of each project on peak demand and energy consumption with supporting assumptions, including a list of each conservation technology or process to be promoted and the

energy – and demand – savings assumptions associated with each identified technology;

Please see enclosed cost benefit analyses, BENCOST modeling, and technical assumptions for each project.

D. For each electric utility that must submit an integrated resource plan to the Public Utilities Commission, an explanation of how its overall conservation improvement program enables the utility to meet the long-term demand-side management goals established in its most recent integrated resource plan;

Please see the Executive Summary. We note that the most recent Resource Plan Order in Docket No. E002/RP-15-21 directs us to strive to achieve the 1.5 percent savings goal over the long-term planning horizon. This Extension Plan establishes a goal to reach the 1.5 percent goal in the short-term, which will position us well to strive to sustain these high levels of savings over the longer-term. Our current Resource Plan is being considered in Docket No. E002/RP-19-368.

E. An estimate of the expected cost-effectiveness of each project to the utility, to the project's participants, to the utility's ratepayers, and to society;

Please see the enclosed cost-benefit analyses and BENCOST modeling.

F. For each project targeted at residential consumers, an estimate of the anticipated percentage of use of each project among:

a. Low-income participants; and

b. Renters;

The following tables provide estimates of the anticipated percentage of use of each project among:

a. Low-Income participants; and,
b. Renters.

Table 9: Low-Income Participation by Project (Electric), 2020

Project	2020		
	Participation Goal	Low Income Participation	Percent of Participation
Residential Segment			
Efficient New Home Construction	2,226	27	1.2%
Energy Efficient Showerhead	1,920	366	19.1%
Energy Feedback Residential	256,320	10,000	3.9%
Home Energy Squad	5,371	0	0.0%
Home Lighting	146,067	869	0.6%
Insulation Rebate	619	37	5.9%
Refrigerator Recycling	7,100	145	2.0%
Residential Cooling	11,582	131	1.1%
Residential Heating	10,000	183	1.8%
School Education Kits	29,000	11,107	38.3%
Whole Home Efficiency	230	0	0.0%
Water Heater Rebate	66	7	10.8%
Residential Saver's Switch	29,665	827	2.8%
Consumer Education	433,854	47,724	11.0%
Home Energy Audit	3,500	140	4.0%
Lamp Recycling - Residential	325,000	1,934	0.6%
Residential Total	1,262,520	69,884	5.5%
Low-Income			
Home Energy Savings Program	2,117	2,117	100.0%
LI Home Energy Squad	1,900	1,900	100.0%
Multi-Family Energy Savings Program	1,766	1,766	100.0%
Low-Income Total	5,783	5,783	100.0%

Table 10: Renter Participation by Project (Electric), 2020

Project	2020		
	Participation Goal	Renter Participation	Percent of Participation
Residential Segment			
Efficient New Home Construction	2,226	0	0.0%
Energy Efficient Showerhead	1,920	793	41.3%
Energy Feedback Residential	256,320	117,000	45.6%
Home Energy Squad	5,371	1,176	21.9%
Home Lighting	146,067	31,697	21.7%
Insulation Rebate	619	8	1.2%
Refrigerator Recycling	7,100	93	1.3%
Residential Cooling	11,582	180	1.6%
Residential Heating	10,000	93	0.9%
School Education Kits	29,000	6,293	21.7%
Whole Home Efficiency	230	6	2.5%
Water Heater Rebate	66	3	5.1%
Residential Saver's Switch	29,665	1,483	5.0%
Consumer Education	433,854	47,724	11.0%
Home Energy Audit	3,500	175	5.0%
Lamp Recycling - Residential	325,000	70,525	21.7%
Residential Total	1,262,520	278,700	22.1%
Low-Income			
Home Energy Savings Program	2,117	616	29.1%
LI Home Energy Squad	1,900	703	37.0%
Multi-Family Energy Savings Program	1,766	1,766	100.0%
Low-Income Total	5,783	3,384	58.5%

Table 11: Low-Income Participation by Project (Natural Gas), 2020

Project	2020		
	Participation Goal	Low Income Participation	Percent of Participation
Residential Segment			
Efficient New Home Construction	960	35	3.6%
Energy Efficient Showerhead	14,080	769	5.5%
Energy Feedback Residential	170,898	7,995	4.7%
Home Energy Squad	2,200	-	0.0%
Insulation Rebate	773	76	9.8%
Residential Heating	12,272	211	1.7%
School Education Kits	14,000	6,370	45.5%
Water Heater Rebate	1,071	115	10.8%
Whole Home Efficiency	205	-	0.0%
Residential Demand Response	6,150	70	1.1%
Consumer Education	382,912	42,120	11.0%
Home Energy Audit	2,800	112	4.0%
Residential Total	608,321	57,377	9.4%
Low-Income			
Home Energy Savings Program	554	554	100.0%
LI Home Energy Squad	1,500	1,500	100.0%
Low-Income Total	2,054	2,054	100.0%

Table 12: Renter Participation by Project (Natural Gas), 2020

Project	2020		
	Participation Goal	Renter Participation	Percent of Participation
Residential Segment			
Efficient New Home Construction	960	0	0.0%
Energy Efficient Showerhead	14,080	1,303	9.3%
Energy Feedback Residential	170,898	78,654	46.0%
Home Energy Squad	2,200	286	13.0%
Insulation Rebate	773	8	1.1%
Residential Heating	12,272	106	0.9%
School Education Kits	14,000	3,038	21.7%
Water Heater Rebate	1,071	54	5.1%
Whole Home Efficiency	205	5	2.5%
Residential Demand Response	6,150	95	1.6%
Consumer Education	382,912	42,120	11.0%
Home Energy Audit	2,800	140	5.0%
Residential Total	608,321	127,091	20.9%
Low-Income			
Home Energy Savings Program	554	69	12.5%
LI Home Energy Squad	1,500	555	37.0%
Low-Income Total	2,054	654	31.8%

G. A detailed budget for each project for the next three years;

Please see enclosed cost-benefit analyses and BENCOST modeling for 2020 only.

H. A description of the utility's ratemaking treatment and cost-recovery method;

The ratemaking and cost-recovery procedures for this CIP follow those currently approved by the Minnesota Public Utilities Commission.

I. An estimate of participation in each project;

Please see enclosed cost-benefit analyses and BENCOST modeling. This information has also been uploaded to ESP.

J. An explanation of how the proposed projects provide for the involvement of community energy organizations, when appropriate;

Please see enclosed individual program descriptions.

K. An outline of the proposed plan for evaluating the effectiveness of each proposed project;

Please see enclosed program descriptions as well as the Research, Evaluations, and Pilots Segment for a schedule of planned program evaluations. The Measurement and Verification policy is included within the Planning Segment.

L. For each renewable energy project, an estimate of the net energy and capacity to be produced by each project and the projected reliability of the technology that would be used; and

There are no planned or proposed renewable energy projects for the Company's CIP portfolio in 2020.

M. Additional information that the Department determines is necessary as a result of its review or evaluation of previous projects of the particular utility.

In the Company's pre-filing meeting for the 2020 CIP Extension Plan on June 3, 2019, the Department requested that the Company provide information related to the discontinuation of the Energy Intelligence program. The Energy Intelligence program is a third-party alternative filing conducted by the Center for Energy and Environment (CEE). As a matter of practice, the Company does not generally provide information on alternative filings in our CIP Triennial Plans (beyond their proposed goals in our Executive Summary tables) as they are proposed and administered by third parties.

It is the Company's understanding that CEE submitted a letter on April 25, 2019 notifying the Department of their intention to discontinue the Energy Intelligence program at the conclusion of 2019. We are supportive of this decision. The Company is continuously developing and refining our program offerings for this customer segment and will continue to serve them in this Extension Plan and our next 2021-2023 CIP Triennial Plan.

Business Segment

Description
The Business Segment serves all of our customers that are not on a residential rate. This broad and varied Segment has historically contributed a significant portion of the energy savings to the Company's DSM portfolio and is expected to continue to do so in the future.

The Company offers a variety of products including study funding, as well as prescriptive, custom and holistic rebates in order to best serve business customers over a broad range of technologies. Our program portfolio encourages customers to choose high efficiency options ranging from a simple lighting fixture replacement to the inclusion of energy efficiency in the design of an entire new facility. Study programs also offer assistance whether customers need to identify simple energy efficiency opportunities or they are considering a complex manufacturing process change. Holistic programs foster a deeper level of customer commitment to energy efficiency and engage customers in long-term energy planning intended to change the way customers look at energy and conduct their business.

Most of the programs in our business portfolio are available to all of our business customer sectors such as small and large retail, office, hospital, manufacturer, educational and government facilities. A few programs, such as Commercial Efficiency and Process Efficiency, are designed to serve specific market sectors by better targeting efficiency opportunities and customizing delivery options to better engage customers and match their operations and needs.

Programs
This comprehensive program portfolio ensures that the Company has something to offer almost any business customer in almost any energy efficiency situation. Our holistic Process Efficiency and Commercial Efficiency programs continue to contribute significant savings to the portfolio. This individualized approach to identifying customer needs, measuring energy savings and removing implementation barriers is popular with engaged customers and has proven successful in delivering sustainable energy savings.

Overall Goals
The Business Segment is the single largest and most cost-effective segment in this Plan, contributing more than half of the Company's planned electric and gas savings achievements. The table below highlights the segment's participation, budget and savings goals for 2020:

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Business	88,906	$42,339,176	58,094	254,306,910	22,280	$5,190,768	456,448
Total CIP Portfolio	1,397,081	$102,371,401	116,706	454,160,800	632,668	$18,730,192	786,334

Marketing/Advertising/Promotion
We rely on trade allies, end-use equipment vendors, account managers, and dedicated energy efficiency sales specialists to drive energy savings and load management achievements in the Business Segment. Although sales to the largest business customers typically require personal interaction, the Company also utilizes a variety of tactics and channels, including: newsletters, customer events, direct mail, email communications, awareness advertising and social media to build awareness and drive program

activity. In this Extension Plan the Company strives to drive deeper energy savings across the portfolio by expanding our messages in the marketplace. To support its marketing efforts, the Company will employ an integrated approach to communications, where the tactics are designed to work in concert with each other to reinforce key messages over time.

We also market our programs as customer solutions to various business segments; focusing on the segments which have significant potential and the segments in which participation is under performing compared to others. Multimedia campaigns are used to provide each segment customized tools and information and to direct them to the most applicable programs in our portfolio.

Overall Policies

The Company has adopted several general policies that are followed in the Business Segment. Individual programs may follow different policies as noted in the program descriptions. The general policies provide overall management direction; however, they may be relaxed for specific time periods when warranted for promotional events or other purposes.

The segment-level policies include:

- Cost-Effectiveness Tests: All customer projects going through the custom analysis process must pass the Societal Tests with an absolute ratio of 1.0 or greater.
- Proof of Installation: All programs require documentation of installation, such as proof of purchase (e.g., invoices) or site verification.
- Installation Date: Rebates are generally provided for equipment installed within 12 months of purchase or project completion unless otherwise noted in the individual program policies.
- Payback Requirements: Projects must have a payback longer than nine months, and cannot exceed the expected lifetime of the equipment.
- Studies: Study funding is based on potential energy savings and provides up to 75 percent of the study cost (up to $25,000), unless otherwise noted in the individual program policies.
- Influenced Savings refers to projects for which Xcel Energy played a significant role in the customer's decision to implement an energy efficiency measure, and for which the customer participated in the normal Custom Efficiency project submission process, yet whose cost-effective analysis or payback period failed. For such projects, Xcel Energy denies the customer any rebate for the measure, but claims Influenced Savings in order to appropriately account in the Company's energy and demand savings for the implementation of the higher energy efficiency technology and to recognize the often significant labor investment and/or study costs involved in the project. Influenced savings guidelines are listed below:
    1. Project Preapproval – Must occur prior to purchase and installation.
    2. Cost-Effectiveness Tests – Projects must pass the Societal Test.
    3. Payback – Projects with a payback period of less than nine months may be considered only if they meet all the other Influenced Savings guidelines herein.
    4. Large Projects – Projects with savings of 2 GWh and greater require separate DER pre-review. All other projects will be reviewed as part of the Status Report.
    5. Savings Cap – Influenced Savings claims cannot exceed 4% of the Company's annual CIP achievements.

6. Documentation – Documentation must be provided to show Xcel Energy's involvement was an important factor in implementing the energy saving project.

- Study-Driven Credit: If a customer implements measures identified in an Xcel Energy study or assessment, or identified in a study funded by Xcel Energy, and the measure has a payback period of less than nine months or longer than the expected lifetime of the equipment, the customer will not receive a rebate, but the Company will claim those savings as study-driven credit. We believe that our help identifying and analyzing the energy efficiency measures provides influence on the customer's decision to implement those measures. These savings do not count toward Influenced Savings. All programs that fund studies are eligible to claim study-driven credit.
- Program Incentives: Custom projects limit rebates to 60 percent of the actual project cost. Prescriptive rebate levels are set based on deemed incremental costs and rebates are capped at 60 percent of actual total project cost; this practice helps ensure we do not pay more than 60 percent of the incremental cost for a specific project for which the pricing varies from the deemed cost. Bonuses and special offers may increase the rebate cap as a percent of incremental cost, but we strive to ensure that it never exceeds 100 percent.

Stakeholder Involvement

The Company regularly works with a number of local organizations to refine our existing programs, shape new programs and discuss partnership opportunities. These local organizations include:

- Building Owners and Managers Association;
- Center for Energy and Environment;
- CenterPoint Energy;
- Enterprise Minnesota;
- Franklin Energy;
- Fresh Energy;
- Minnesota Blue Flame Gas Association's Conservation Committee; and,
- Minnesota Technical Assistance Program.

In addition to local contacts, we also regularly work with regional and national organizations, including:

- American Council for an Energy Efficient Economy;
- Cadmus;
- Cascade Energy;
- Chartwell, Inc.;
- CLEAResult Midwest;
- Compressed Air and Gas Institute (CAGI);
- Consortium for Energy Efficiency;
- Department of Energy/ENERGY STAR;
- Design Lights Consortium (DLC);
- EMI
- E Source;
- Electrical Apparatus Service Association;

- Evergreen Economics;
- Hydraulic Institute Pump Systems Matter (PSM);
- Michael's Energy;
- Midwest Energy Efficiency Alliance; and,
- Motors Decisions Matter (MDM).

Business New Construction

Description
The Business New Construction program influences owners, architects, and engineers to include energy efficient systems and equipment in their designs for new construction, additions to existing buildings and/or major renovation projects. The Company provides consulting services and energy modeling as well as electricity and natural gas efficiency implementation rebates. The program is primarily marketed by our sales team and consultants to design teams and customers who want to include energy efficiency in their building designs.

The program's main offerings include the following:

- Prescriptive rebates, including motors, cooling, and heating equipment identified in the Energy Efficient Buildings program component; and,
- Custom rebates for energy efficiency strategies incorporated into the building design through either the Energy Efficient Buildings (EEB) or the Energy Design Assistance (EDA) program component.

The main offerings are described below:

Energy Design Assistance
The EDA offering provides business customers with energy expertise to encourage energy efficient building design and construction practices. EDA offers real-time energy modeling so that a project team can visualize the impacts of efficient choices. The program encourages an integrated approach to the design process by providing free computer energy modeling of the project design, funding to offset the cost of design time associated with the increased energy analysis, financial incentives to improve the cost-effectiveness of a package of energy efficiency measures, and field verification to ensure that the strategies are installed per the design intent.

There are two tracks available for customer involvement: Standard and Enhanced. The Standard track is for customers interested in a collaborative design process to identify energy savings using new technologies. Projects must represent buildings with 20,000 square feet or greater that are in the schematic design or early design development phase. Rebates are based on demand and energy savings (kW, kWh, and Dth). The design team must strive to achieve a minimum of 5 percent demand and energy savings over the baseline. If 5 percent savings are not achieved, the customer is no longer eligible for that component of the rebate.

The Enhanced track is for customers interested in obtaining sustainable building certifications, such as the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED). The Enhanced track allows for further analysis in the early stages of design for HVAC, daylighting, and massing analysis. Projects in the Enhanced track must represent buildings with a minimum of 50,000 square feet that are in the pre-design or early schematic phase. Design teams must strive to achieve a minimum of 30 percent demand savings over the baseline. Finally, the project must be registered with the USGBC LEED certification or equivalent certification (i.e. Minnesota B3 or Green Globes).

We administer the Business New Construction program with help from outside energy design consultants who facilitate meetings with the design teams and building owners, and complete energy modeling activities. The current EDA baseline is based on the updated Minnesota State Energy Code referencing the ASHRAE 90.1-2010 Energy Standard.

Energy Efficient Buildings

The EEB offering is intended to provide a simplified approach to optimizing energy efficiency options in new construction, additions, and major renovations. This component addresses the portion of the new construction market not suited for the full-blown energy modeling of the EDA offering. It offers design review, equipment recommendations, and onsite verification.

Focusing on the needs of smaller building owners, the EEB offering provides a comprehensive list of typical energy efficiency measures that can be incorporated into the new building design, as well as the rebate amounts for each measure. Incentives are provided for heating, cooling, lighting, motors, and custom opportunities. We administer the program using both internal and external resources to review the calculations, recommend equipment, and verify installation. EEB is a free service to our business customers. Any size building may participate, but this component is best suited for buildings that are greater than 5,000 square feet. Projects must enter the program prior to completion of construction documents.

Unlike many other programs, the Business New Construction program verifies incremental project costs at a program level rather than project level. Because of the large scale of most projects, the final costs for all energy savings measured within the building are difficult to identify individually. Instead, we use the best estimate of costs from the design team, historical projects, or other documented sources and use it to project the energy savings costs using the DOE2 energy model (for EDA projects). The payback criterion is estimated using the same cost definitions as for incremental cost.

Program Changes

None.

Budget and Goal Considerations

The program's participation, energy savings goals, and budgets were determined by reviewing historical achievement and the state of the construction market industry. In recent years, the construction market has been very active, although we see signs that growth may be tapering off. However, given the time to complete these projects, the buildings currently in development will drive the achievement for this Extension Plan. The main budget drivers include the following:

- Incentives – Incentives make up more than half the budget. In addition to customer incentives, the EDA product provides incentives to design teams. Up to $12,000 per project is available to reimburse customers and design teams for the extra expense associated with participation.
- Customer Service – These activities are associated with the cost of developing energy models, identifying energy efficiency opportunities, as well as time spent conducting customer meetings.
- Measurement and Verification – All EDA and EEB projects are verified using on-site visits.

Involvement of Community Energy Organizations
The New Construction program engages customers, trade allies, and other stakeholders at the individual project level and supports organizations including the United States Green Building Council (USGBC-MN) and the Center for Sustainable Building Research (CSBR).

Commercial Efficiency

Description
The Commercial Efficiency program is a strategic energy management approach to creating persistent savings and continuous improvement. In addition to capital equipment improvements for energy efficiency and demand response opportunities, the program stresses system-level operational change as well as cultural change from business customer' management and personnel. The program is targeted at large commercial customers that have at least 1 GWh or 4,000 Dth of conservation potential.and offers customized resources to develop a holistic, sustainable energy management plan. This program provides funding for studies to identify and scope energy efficiency opportunities. Rebates are available to customers who implement qualifying energy efficiency recommendations. The Commercial Efficiency program was modeled after our successful Process Efficiency program with adjustments to reflect the unique nature of the commercial market. This program is marketed to our large commercial customers through the Company's account managers.
The program's offerings are delivered in four phases. Each phase is defined in a Memorandum of Understanding that is customized to reflect the needs of the specific customer.

Phase 1: Identification
Xcel Energy performs a high level analysis to identify opportunities for energy savings in the customer's business practices, facilities, and operations. This is completed at no cost to the customer. Phase 1 is delivered using a third-party provider selected through a Request for Proposal (RFP) process.

Phase 2: Scoping
This phase provides support and resources to further define, measure, and provide recommendations and assistance for energy savings opportunities while working with the customer to optimize the business practices identified in Phase 1. Total funding for Phase 2 is based on estimated savings and a typical customer is asked to contribute up to 25 percent with a maximum amount of $7,500. The purpose of the customer contribution is to ensure management-level engagement and the customer's commitment to a holistic approach. Phase 2 is delivered using third-party technical experts selected through an RFP process, or through technology-specific experts of the customer's choosing.

Phase 3: Implementation
The Company will work with the customer to put together an energy management plan that includes conservation goals, energy conservation and demand reduction projects. This phase includes a customized rebate and bonus schedule that rewards deep savings and/or a system-wide approach.

Upon project completion, customers receive rebates for improvements that qualify for any of our prescriptive or custom programs. The savings are included in the Commercial Efficiency program achievements, but mirror the rules and rebate levels of our other programs. If the improvements do not qualify for rebates due to program rules, we claim the project savings in a manner consistent with our study-driven credit policy.

Phase 4: Energy Performance Services
Phase 4 is an option for customers who are interested in ongoing commissioning and/or continuous improvement. Specifically, this phase will provide consulting services that support the customer

through the process of installation, integration, and commissioning of energy information systems in an effort to demonstrate repeated and consistent improvements in energy usage. These services are offered to develop a baseline energy model and measurement and verification of energy savings due to behavior change and low-cost/no cost operational improvements. The offering can be done in conjunction with the Phase 2 offering or later in the engagement process.

Policies

Due to the holistic nature of this program, several policies have been previously filed and approved by the Department and continue to remain in effect:

- Bundling -- When customers identify multiple measures for installation, a bundle can be evaluated to see if it qualifies for a rebate versus each individual component. This allows measures with a short payback for a rebate to be leveraged to drive projects with a long payback for the customer to install so that both are implemented.
- Preapproval dates -- Custom-type measures in Commercial Efficiency require a custom analysis, but the actual date the project is submitted and the analysis is completed does not disqualify a project if it was initiated after the customer entered into the program. This is due to the extensive resources used by the program to identify and scope ways to drive energy efficiency into how a customer does business. The goals and awareness created during Phases 1 and 2 can result in projects that drive energy savings in business areas that act without immediately notifying the personnel in contact with the Company.
- Rebate bonuses -- We will use the rebate structure of the other end-use programs and then incorporate additional rebate bonuses for system optimization and/or exceeding annual achievement targets.
- Facility-level metering -- We have worked in advance with the Department to define the methodology of how we propose to take credit under this metering scenario. Facility-level metering provides us the ability to accurately account for all savings generated by implementation of measures and incorporate the savings that may be driven plant-wide that we have been unable to accurately capture historically.
- Behavioral Savings -- We use the Departments's Average Savings Method to count behavioral savings created through single entity-based behavioral change efforts. This also could apply to technical projects that require specific behaviors to maintain persistent energy savings throughout their lifetime.

Program Changes

None.

Budget and Goal Considerations

We determined the program's participation, energy savings goals, and budgets by examining historic participation levels, project and participation cycles, and costs.

The main budget drivers include the following:

- Administration – These costs are driven by marketing, sales, engineering, and external labor resources to support the Company's heavy engagement with the customer, as well as cover the costs of those projects requiring metered verification.
- Customer Service – The Company utilizes third-party resources to deliver the program's identification and scoping phases.

- Participant Incentives – The program has a robust rebate budget due to the size of projects initiated through the Commercial Efficiency program. In addition to standard rebates, Commercial Efficiency offers lucrative bonus rebates for exceeding energy savings and/or implementing projects on a system-wide approach.

Involvement of Community Energy Organizations

The Commercial Efficiency program works with Community Energy Organizations to promote the program and deliver its offerings. In particular, the Trillion BTU financing delivered by the St. Paul Port Authority and Xcel Energy could collaborate to help customers fund large capital projects when financing is a barrier to implementation. We consider leveraging other resources as they become available through community and other organizations, and consider integrating their offerings into our program and customer's energy management plans.

Commercial Refrigeration Efficiency

Description
The Commercial Refrigeration Efficiency program is designed to achieve energy and demand savings via refrigeration maintenance and upgrades. The program targets small to medium retail commercial customers with significant refrigeration loads, notably grocery, convenience, and liquor stores. Refrigeration systems in these targeted facility types make up more than 50 percent of the facility's energy use. This program targets commercial customers that have a peak demand of 400 kW or less.

The program provides a walk-through energy assessment to identify efficiency improvement opportunities and uses a combination of direct installation, prescriptive, and custom improvement measures to convert those opportunities into real energy savings for the customers. Rebates are offered to lower the incremental capital cost associated with energy improvement opportunities.

This program consists of five components:

1. Free on-site energy assessment – Customers are offered a free, no-obligation, on-site facility energy assessment and walk-through to identify and explain key energy efficiency opportunities. A copy of the assessment report is provided after the visit, and includes a prioritization of identified opportunities.

2. Direct install for immediate savings – While on-site for the energy assessment, free direct installations of the following energy savings measures:
    a. Screw-in LEDs for walk-in coolers/freezers;
    b. Pre-rinse sprayers for restaurants and commercial kitchens and aerators in restrooms and kitchen sinks; and,
    c. Coil brush give-away and demonstration tutorial for use on refrigeration coils.

3. Coil-cleaning – As part of the on-site visit, are free coil-cleaning service, including materials and training for self-contained equipment. Since coil cleaning should be performed annually, we will provide customers with a coil cleaning brush, an instructional "How-To" sheet, and an on-site tutorial, to equip them with the tools and knowledge to complete this task on a regular basis using in-house staff. We will claim energy savings for the efforts from the first cleaning.

4. Follow-up refrigeration measures – As part of the assessment report, a number of opportunities will be identified for implementation. Several of these measures have been identified by the Company as standard across many customer types and therefore warrant prescriptive rebate treatment. Examples of these measures include:
    a. Anti-sweat heater controls;
    b. Close the Case;
    c. Demand Controlled Ventilation;
    d. Electronically commutated motors;
    e. Enclosed Reach-in Cases;
    f. Evaporator Fan Motor Controller;
    g. LED Case Lighting;

h. Night curtains; and,
i. Zero Energy Loss Doors.

Other refrigeration measures may qualify for custom rebates. Examples include demand defrost controls, floating head pressure control, and Q-sync motors. These measures will be evaluated through the custom process.

5. Turn-Key Services – The customer will be provided with proactive project management to assist with the implementation of prescriptive projects, including coordination between the customer, Company, and the installation contractors/trade allies to complete the improvements and submit rebate applications.

Program Changes
None.

Budget and Goal Considerations
We determined the program's participation, energy savings goals, and budgets by examining other programs' historic participation levels, project and participation cycles, and costs.

The main budget drivers include the following:

- Administration – These costs are driven by marketing, sales, engineering, and external labor resources to support the program.
- Customer Service – The Company will utilize third-party resources to deliver the program's on-site energy assessments.
- Participant Incentives – The program offers prescriptive and custom rebates along with some free direct install measures.

Involvement of Community Energy Organizations
The Commercial Refrigeration Efficiency program works with the City of Minneapolis and other community organizations to try to promote participation in the program.

Cooling Efficiency

Description
The Cooling Efficiency program offers prescriptive and custom rebates to business customers who install efficient cooling systems used for space and process cooling. The program also offers rebates for cooling-focused studies. The Cooling Efficiency program encourages the Company's business customers to choose the most efficient cooling equipment that fits their needs.

The program's main offerings include the following:

- Prescriptive rebates:
  - Cooling equipment that exceeds the minimum efficiency required by energy codes; and
  - VFD retrofits on chillers.
- Custom rebates:
  - Cooling recovery and other non-prescriptive cooling projects.
- Study funding of up to 75 percent of the study cost, not to exceed $25,000, to identify and quantify energy saving cooling projects.

The main offerings are described below.

Prescriptive Cooling Efficiency Rebates
The program offers rebates for cooling equipment that exceeds the minimum efficiency of ASHRAE 90.1 -2010 standards. Eligible prescriptive equipment includes packaged terminal air conditioners, rooftop unit economizers, water source heat pumps, direct expansion units, variable frequency drive retrofits on chillers, and new chillers. Refrigeration measures are also included in the Cooling Efficiency program. These measures include zero loss energy doors, electronically commutated motor evaporator fans, close the case doors and anti-sweat heater controls. The prescriptive program does not require preapproval.

Custom Cooling Efficiency Rebates
Custom rebates are available for non-prescriptive energy efficiency cooling equipment. To be eligible for a custom rebate, preapproval is required before moving forward with the project. The energy savings are then analyzed and after completion we issue a rebate.

Cooling Efficiency Study Funding
The program offers funding to identify energy efficiency opportunities. Customers must receive preapproval before moving forward with the study. The projected energy savings are then analyzed and after study completion and review rebates are paid. The study rebates are awarded based on projected savings of up to 75 percent of the study costs with a maximum of $25,000.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budget were determined by looking at the Company's overall electric and gas goals, past program participation levels, and the typical ramp-up period for program changes and new offerings. We reviewed the equipment and project

characteristics of historical projects to develop a projected average savings per participant for various program offerings. Reported energy savings for the program are determined by using project-specific inputs of actual use and efficiency.

The main budget drivers include the following:

- Participant Incentives – The budget reflects the rebate levels and projected customer participation in each offering, which was based on past program participation for all programs that offer cooling rebate.
- Trade Incentives – The budget includes incentives for the trades. Trade partners can earn 10 percent of the customers rebate up to $5,000 per project.
- Administration – These budgets are based on past program performance with a slight increase built in for expanded program offerings, engineering, promotion, and participation. The Company occasionally utilizes analytical and consulting services for custom Cooling Efficiency projects.
- Advertising and Promotion – The promotional budget includes spending for several customer and trade communications per year, which are necessary to drive participation and awareness.

Involvement of Community Energy Organizations

Because cooling systems can be very complex, trade support is crucial to achieving our goals. We actively engage trade partners in program design, project implementation, and program promotion through regular meetings and correspondence with our Channel Development Manager. We also partner with local energy groups such as the Minnesota ASHRAE Chapter and host trade partner training events to further local industries understanding of energy efficiency programs.

Custom Efficiency

Description
The Custom Efficiency program offers rebates to the Company's electric and natural gas business customers that implement energy saving projects not available through our prescriptive programs. The program is marketed to all of our business customers regardless of size using direct contact with customers via our sales representatives, email communications, web page, and trade channels.

Energy-saving, non-prescriptive projects encompass installing new equipment, replacing existing equipment, retrofitting equipment, or improving processes that lower a customer's electric or natural gas use. The project list includes, but is not limited to: boilers, compressed air, cooling, lighting, motors, and other technologies. All projects must pass cost-effectiveness tests on an individual basis.

This program also offers study funding to help customers determine project viability and energy savings potential.

Equipment Rebates
Rebate amounts are defined by an engineering examination of the demand and energy savings attributed to the project. The analysis incorporates standard engineering principles (relative to industry standards) and the interactive energy effects of the equipment and/or system components. Successful applicants receive a rebate if their completed project passes cost-effectiveness testing.

Study Funding
Successful applicants receive partial funding based on an engineering assessment of the estimated demand and energy savings of the project.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were determined by looking at the overall electric and gas goals, analyzing historical data, reviewing projects in the pipeline, and evaluating the forecasted economic conditions. We also included other variables such as promotions needed to reach goals, rebate levels, and staffing. Projected customer participation and savings are based on expected average project size and mix of technologies anticipated. The opportunity for program achievement continues to decline as the traditional market base has opted into holistic programs and as technologies migrate from a custom to prescriptive rebate structure.

Involvement of Community Energy Organizations
None.

Data Center Efficiency

Description
The Data Center Efficiency program offers prescriptive and custom rebates to business customers that install energy saving measures in their existing or new data center. The program also offers rebates for data center energy studies. The program is primarily marketed to our enterprise and colocation data center customers through our account managers and Business Solutions Center, but any size data center can participate. We also work closely with our trade partners, specifically engineering firms, technology services firms, mechanical contractors, and manufacturers' representatives to market the program.

The program's main offerings include the following:

- Prescriptive rebates for efficiency improvements falling under any of the end-use prescriptive programs we offer, as well as for Electronically Commutated (EC) motor plug fans, Waterside Economizers, and Virtual Desktop Infrastructure equipment, including thin client and zero client computing.
- Custom rebates are awarded for efficiency measures such as:
    - Air-flow management;
    - Server and IT systems;
    - Cooling systems;
    - Humidification systems;
    - Transformers; and,
    - Uninterruptable Power Supplies (UPS).
- Study funding is available to identify and/or quantify energy savings projects. For customers who are building a new data center, we offer knowledge and resources, free of charge, to help data center owners optimize the efficiency of their facilities during the siting, design, and early operation stages of the new data center. Our consultant guides data center owners and design teams through a series of analyses to identify a set of high energy performance design elements to incorporate into the facility. Custom rebates are available for the efficiency improvements incorporated into the design, similar to the Company's Energy Design Assistance Program.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were determined by looking at the Company's overall electric goal, past participation levels, current pipeline, and expected project lead time. We also reviewed the equipment and characteristics of recent project analyses to develop a projected average savings per participant for various program offerings.

The main budget drivers include the following:

- Rebates – The rebate budget reflects the current rebate levels and projected customer participation based on historical activities.
- Labor – These budgets are based on past program performance.

- Consulting – Fees to hire a consultant to provide the services for new construction projects were based on historical trends within the Energy Design Assistance component of the Business New Construction program as well as the quantity of projects we are forecasting for this track.

Involvement of Community Energy Organizations

The Data Center Efficiency program works with an array of community energy organizations, ranging from trade partners and installers to local industry organizations. The Company hosts program and technical training and information sessions for trade partners and sponsors and presents at local industry chapter organization meetings and events.

Efficiency Controls

Description
The Efficiency Controls program offers custom electric and gas rebates to customers that install automated control systems resulting in energy savings. These systems are centralized networks programmed to monitor and control mechanical and sometimes lighting systems within a building, allowing customers to reduce energy costs by adjusting usage of equipment. The program is marketed to all business customers.

The program offers custom rebates for:

- Installation of automated control systems;
- Addition of control points to an existing system; and,
- Microprocessor-based control panels.

To be eligible for a rebate, customers are required to submit their rebate application and project proposal for preapproval prior to purchase or ordering equipment. The Company evaluates each application, estimates energy savings of the proposed system, and notifies the customer of rebate qualification and estimated rebate amount.

Current market information suggests that customers continue to have a strong interest in energy control systems. Looking forward, the Company expects to see more interest with customers utilizing control systems in ways that will help them shape their overall load profile.

We also anticipate reduced customer demand for digital control system rebates due to the following short term factors:

- Reduced customer interest in rebates as more customers have already converted to newer digital control systems;
- Early rebate program participants (c.2005) are just over halfway through equipment life;
- Customers already using a digital control system have an increased interest in other services, such as data-driven, cloud-based energy reporting systems; and,
- New LED fixtures with integrated controls are far more cost-effective with greater overall energy savings than simply retrofitting controls for existing lighting.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budget were determined by analyzing the overall electric and gas goals, historical program performance, current technology, and market conditions as described above.

The main budget drivers include the following:

- Labor – Internal labor to market and administer program offerings are estimated based on historic spend.
- Consulting – Supporting engineering and staff augmentation to ensure accurate consistent analyses and support any M&V efforts as needed.

Involvement of Community Energy Organizations
None.

Fluid Systems Optimization

Description
The Fluid Systems Optimization program, historically known as the Compressed Air program, offers study funding to perform system diagnostics, as well as prescriptive and custom rebates for the purchase of energy saving equipment. The major systems supported by the program are compressed air, pumping, fans, blowers, vacuum, and hydraulics. System diagnostic studies based on the laws of fluid system dynamics are funded as a means to identify and correct inefficiencies within customers' air and fluid systems. Studies often identify additional measures to improve system efficiency. The program is primarily marketed to mid- and large-sized industrial customers.

The program's main offerings include the following:

- Prescriptive rebates for:
  - Variable speed drive compressors;
  - No loss air drains;
  - Cycling refrigerated dryers;
  - Dew point demand controls; and,
  - Mist eliminators.
- Custom and Recommissioning rebates including, but not limited to:
  - Calibration/tune-up of system set points;
  - Adjustment of valves and dampers;
  - Reducing system demand;
  - Air to electric conversions;
  - Capital equipment replacements and upgrades; and,
  - System redesigns.
- Compressed air supply-side and demand-side studies.
- Additional system studies for:
  - Pumping;
  - Fan systems;
  - Blower systems;
  - Vacuum systems; and,
  - Hydraulic systems.

The main offerings are described in further detail below.

Prescriptive Rebates
Prescriptive rebates are available to the Company's business electric and/or gas customers that install qualifying equipment in the Company's Minnesota service territory. Customers must apply for each prescriptive rebate.

Custom Rebates
The program pays custom rebates for qualifying energy saving measures that are not included under the prescriptive rebate category. Such projects are evaluated under the Custom Efficiency analysis and must follow the rules of the Custom Efficiency program. The Company also offers rebates for qualifying system tune-ups, waste reduction efforts, and non-capital equipment changes that are identified in a study but do not fit into the prescriptive rebate category.

Compressed Air Supply-Side Study
A customer's pre-approved Compressed Air Supply-Side Study cost is eligible for reimbursement after 75 percent of the leaks identified have been repaired and the study has been reviewed by one of the Company's engineers or an authorized consultant. The studies are based on the customer's existing system horsepower and identify a customer's supply baseline and system improvements.

System Studies
The Company will pay study funding of up to 75 percent of the study cost (not to exceed $25,000). A rebate incentive is offered to customers for all implemented measures, regardless of the payback, and the maximum incentive is the customer's out of pocket cost for their study (i.e. study cost minus study rebate).

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined by looking at the Company's overall electric goal and past participation levels.

The main budget drivers include the following:

- Participant Incentives – This budget represents the rebates we will pay for products and studies. This is based on historical participation across the offering and includes predicted growth in the legacy products and new opportunities from the new study offerings.
- Administration – These budgets are based on past program performance with an increase to drive further participation and provide technical engineer support.

Involvement of Community Energy Organizations
The Fluid Systems Optimization program partners with the U.S. Department of Energy (DOE) to provide training on the Compressed Air Challenge program and Fan Systems. We also work with the Hydraulic Institute promoting pump system optimization and creating pumping standards and best practices. We have partnered with the Consortium for Energy Efficiency to establish best practices for industrial systems including blower systems and pumping.

Foodservice Equipment

Description
The Foodservice Equipment program offers prescriptive gas and electric rebates to business customers who purchase and install qualifying energy efficient foodservice equipment. The objective of the program is to encourage business customers to purchase higher efficiency foodservice equipment.

The program's main offerings include prescriptive rebates for the following:

- Gas Equipment
  - Broilers (charbroilers, salamander, upright);
  - Demand controlled ventilation;
  - Dishwashers (gas water heating);
  - Fryers;
  - Ovens (combination, convection, conveyor, rotisserie, rotating rack); and,
  - Pasta cookers.
- Electric Equipment
  - Demand-controlled ventilation;
  - Dishwashers (electric water heating); and,
  - Hot food holding cabinets.

Program Changes
None.

Budget and Goal Considerations
The saving levels were established using the latest Arkansas Technical Reference Manual (TRM) and ENERGY STAR assumptions. We based program participation estimates on historical participation levels.

The main budget drivers include the following:

- Administration – The budgets were based on historical performance.
- Advertising and Promotion – This budget provides funds to build customer and trade awareness of the program through events and direct communication.
- Participant Incentives – The rebate budget reflects the current rebate levels and projected customer participation in each offering.

Involvement of Community Energy Organizations
We participate in Hospitality Minnesota's annual customer and trade event which is supported by the restaurant, lodging, resort, and campground associations.

Heating Efficiency

Description
The Heating Efficiency program offers prescriptive and custom natural gas rebates to business customers that install energy efficiency boilers, furnaces, water heaters, unit heaters, and other system improvements. The program also offers funding to conduct heating engineering assistance studies. The program is primarily marketed through our account managers for our large customers and energy efficiency specialists for our small business customers. We also work closely with our trade partners, specifically manufacturers' representatives, to market the program.

The program's main offerings include the following:

- Prescriptive rebates for:
    - New boilers, furnaces, water heaters, and unit heaters that exceed the minimum efficiency required by energy codes;
    - Optional auxiliary boiler equipment that further improves a new or existing boiler's efficiency; and,
    - Distribution-system improvements, including steam trap repair and replacement and pipe insulation.
- Custom rebates for:
    - Heat recovery and other energy saving projects that lower a customer's natural gas use and pass the required Societal and Participant Tests on a per project basis; and,
    - Heating systems with more than 30 percent process load or larger than 10 million British Thermal Units per Hour (BTUH).
- Study funding up to 75 percent of study cost, not to exceed $25,000, to identify and quantify heating-related energy savings projects.

The main offerings are described below.

Prescriptive Rebates
The program offers prescriptive rebates for boilers, furnaces, water heaters, and unit heaters that substantially exceed the minimum efficiency required by energy codes. Prescriptive rebates are also available for auxiliary boiler equipment to improve a boiler's efficiency or distribution-system improvements to reduce heat loss. New packaged boiler systems do not qualify for auxiliary equipment rebates unless the customer can show that the same boiler is available and qualifies for the base boiler rebate without the auxiliary equipment.

Custom Rebates
The program offers custom rebates for efficiency equipment that is non-prescriptive. These projects require pre-approval and are funded based on anticipated energy savings. The Custom rebate process is more complex than the prescriptive rebate process, as each project is analyzed on an individual basis rather than based on deemed savings.

Study Funding
The program offers two types of study funding for customers interested in identifying and analyzing potential heating-related energy efficiency projects: prescriptive steam trap audits and custom studies. Prescriptive steam trap audits are rebated at $15 per trap and may receive funding up to 100 percent of the audit cost. These audits do not require preapproval; however, all faulty traps

identified in the study must be replaced. Custom studies receive funding based on anticipated savings up to 75 percent of the study cost, not to exceed $25,000. These studies require preapproval and each project is analyzed individually.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goal, and budget were determined by reviewing the Company's overall gas goal, past participation levels, the typical ramp-up period for program changes, and new offerings. We reviewed the equipment chosen and general characteristics of historical projects to develop a projected average savings per participant for various program offerings.

The main budget drivers include the following:

- Rebates – The rebate budget reflects the new measure levels and projected customer participation in each offering, which was based on past program participation for all programs that offer cooling rebate.
- Trade Incentives – These budgets are based on a percentage of anticipated customer rebates. These incentives are paid to motivate trade partners to participate by helping to educate and install energy efficiency improvements.
- Labor – These budgets are based on past program performance with a slight increase build in for expanded program offerings, engineering, and participation.
- Promotion and Advertising – Promotions may include direct mail to customers and trade, training events, email marketing, and trade publications

Involvement of Community Energy Organizations
The Commercial Heating program works with multiple community energy organizations from trade vendors and installers, to the Minnesota Blue Flame Association. The Company meets with the trade annually to assess engagement, program strengths and weaknesses, as well as to gain insights on the market. We specifically work with the Minnesota Blue Flame Association to drive awareness of natural gas conservation topics and increase educational resources for energy-saving heating options.

Lighting Efficiency

Description
The Lighting Efficiency program offers prescriptive and custom rebates to Xcel Energy electric business customers who install qualifying energy efficient lighting equipment in existing or new buildings. The program also offers rebates for Lighting Redesign studies to customers needing assistance to optimize the lighting systems within their facilities. The program is primarily marketed through the Company's account managers. We also work closely with our trade partners, manufacturers' representatives, distributors, and contractors to market the program.

The program's main offerings include the following:

- Prescriptive rebates for products from a pre-defined list of energy-saving LED lighting fixtures and lamps. Typical options include LED fixtures that replace inefficient incandescent, high intensity discharge (HID), and fluorescent fixtures;
- Custom rebates for energy-saving lighting projects that do not fall within the requirements of the prescriptive rebates;
- Study funding of up to 75 percent of study costs (not to exceed $25,000) is available for customers who have facilities that are under or over-lit. Studies identify and quantify lighting solutions that include energy-saving opportunities; and,
- Midstream LED lamp incentives through local distributors that offer instant rebates on qualifying lamp purchases. This program is called the Business LED Instant Rebate.

The main offerings are described below.

Prescriptive Lighting Rebates
The program offers rebates for qualifying lighting equipment that is more efficient than existing equipment in retrofit situations or more efficient than standard equipment in new construction applications. The most applicable lighting measures for a prescriptive rebate format are measures that are commonly installed in the marketplace and have an easily identifiable means to determine energy savings.

Custom Lighting Rebates
Applications for energy-saving lighting projects that do not fit into the prescriptive paths may be reviewed using the Custom Efficiency or Advanced Lighting Control product preapproval application and the accompanying Lighting Evaluation worksheet. Project analysis and preapproval of Custom Efficiency and Advanced Lighting Control lighting projects are required prior to equipment purchase and installation.

Midstream Lighting Rebates
This program offers instant discounts on LED lamp purchases through participating distributors. It is easy for customers to participate because there are no applications or forms to complete. The sales data and the installation address is compiled and submitted to the Company by the participating distributors. The discounted lamp types include LED A-Line, reflector and decorator lamps.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were determined by considering the Company's overall electric goal, past participation levels, and trends in the marketplace. We reviewed the equipment energy savings, costs, and project characteristics of historical projects to develop a projected average cost for each measure. Below is a general breakdown of the various budget components:

- Rebates - The vast majority of the budget is allocated for rebates. This budget reflects the average rebate levels and projected customer participation in each measure.
- Labor - These budgets are based on past program performance with a slight increase built in for expanded program offerings, engineering, and account management involvement. The budget also includes third-party implementer costs for the implementation of Business LED Instant Rebate efforts and technical assistance with complex lighting projects.
- Promotion and Advertising - The promotional budget was derived using expected goals and market trends. Promotions are targeted to customers and trade partners and typically focus on activities, such as new or revised product offerings, case studies featuring successful projects, and educational opportunities.
- Consulting - This budget is applied to consulting and analytical services for lighting projects that are analyzed through the Custom Efficiency program.

Involvement of Community Energy Organizations
None.

Motor and Drive Efficiency

Description
The Motor and Drive Efficiency program offers prescriptive and custom rebates to electric business customers that install National Electrical Manufacturers Association (NEMA) Premium motors, Enhanced NEMA Premium motors, constant speed motor controllers (CSMCs), HVAC and non-HVAC variable frequency drives (VFDs) and water well pump (WWP) VFDs. Rebates for motor and drive system studies are also available. The Motor and Drive Efficiency program offers products to customers that are looking to improve their motor and drive system efficiency and system reliability, while reducing electricity consumption and costs.

The program is primarily marketed through the Company's account managers and Energy Efficiency Specialists to our large and mid-range customers. We also work closely with our trade partners, specifically manufacturers' representatives, to market the program.

The program's main offerings include the following:

- Prescriptive rebates for:
  - New or replacement equipment that meets or exceeds the NEMA Premium efficiency energy standards for Motors;
  - New or replacement equipment CSMCs used to control any constant speed motor that is lightly loaded when the speed cannot vary;
  - HVAC and non-HVAC VFDs used to control the motor speed of fans and pumps;
  - WWP VFDs used to control motor speed for water well pumping in specific applications; and,
  - Clean water pumps that meet the U.S. Department of Energy's (DOE) conservation efficiency standard (those with a Pump Energy Index (PEI) of $\leq$ 1.0 or less).
- Custom rebates for:
  - Projects and equipment that do not meet the prescriptive criteria.
- Study funding up to 75 percent of the study, not to exceed $25,000.

The main offerings are described below.

Prescriptive Rebates
The prescriptive rebates are available to electric business customers with projects that meet the prescriptive requirements of the Motor and Drive Efficiency program.

The program offers prescriptive rebates for HVAC and non-HVAC VFDs or drives, CSMCs and NEMA Premium efficiency motors. As well as alternating current permanent magnet (PMAC) motors that fall under the Enhanced Motor portion of the program and WWP VFDs. The PMAC motors and WWP VFD products were added to the prescriptive portion of the program to reduce the barriers that prevent customers from purchasing the more efficient but higher priced innovative technologies.

Custom Rebates

The custom rebates are available to customers with projects that fall outside the prescriptive program criteria and/or for new technologies that have not gone mainstream in the current marketplace.

Study Rebates
The Motor and Drive Efficiency program offers study funding for customers that want a deeper understanding of how their motors and drives work within their facility.

Program Changes
There are no changes in the measures offered from the modification request approved in 2019. The approved 2019 program was only for a portion of the year; the budget has been updated to reflect anticipated participation for a full year.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were determined by reviewing the programs historical electric goals and historical participation levels. Our analysis included the review of equipment and characteristics of historical projects to develop a projected average savings per participant for various program offerings.

The main budget drivers include the following:

- Participant Incentives – The budget reflects rebates to help offset initial costs associated with the capital investment in energy efficient equipment.
- Administration – These budgets are based on past program performance with a slight increase built in for expanded program offerings, engineering and participation.
- Advertising and Promotion – A small promotional budget was derived using historical data from past activities. Promotions are targeted to customers and typically focus around activities such as new or revised product offerings, or bonus rebates.
- Customer Service – The Company employs consulting and analytical services for motor projects that are analyzed through the Custom Efficiency program, as well as for motor engineering studies.

Involvement of Community Energy Organizations
The Motor Efficiency program works with multiple community energy organizations including trade vendors, distributors and installers. This is done by hosting training sessions for both customers and trade partners. We also participate regularly with Motors Decisions Matter to ensure practices, product offerings and rebates are relatively consistent. Additionally, we work with trade organizations, such as the Building Owners and Managers Association and Electrical Apparatus Service Association, Inc. as a means to promote energy efficiency to their membership.

Multi-Family Building Efficiency

Description
The Multi-Family Building Efficiency (MFBE) program is a joint offering with CenterPoint Energy that provides a streamlined approach to whole-building energy savings in 5+ unit multifamily properties. Offered through one program implementer, it is designed to engage building owners by helping them understand their energy use, achieve immediate energy savings through low-cost improvements, and move beyond the initial measures for whole-building energy savings. The structure is a combined approach of a whole-building energy audit with direct-install phase to engage the building owners and achieve early savings, and a performance-based component to encourage further improvements in the building, then assistance to begin benchmarking their building.

To better understand program performance, in 2018 we completed a program evaluation which included interviewing participants, non-participants, stakeholders and peer utilities. We also hosted a stakeholder meeting with various organizations which included members of the Minnesota Multifamily Affordable Housing Energy Network, renters, building owners/managers and Department of Commerce Division of Energy Resources staff to gain additional insight into program challenges and opportunities.

As a result of our findings, the program will provide rebates with a bonus incentive when energy savings measures are implemented, providing the customer an incentive that is above the utility's standard rebate offerings. Energy savings opportunities will be unique to the building(s) and can be located in either the common areas or residents' units. The program is marketed to building owners/managers and is available to both market rate and affordable housing properties.

The program's main offerings include the following:

- Whole-building energy audit and direct install of low-cost energy savings measures;
- Project consultation;
- Rebates and bonus incentives for energy saving upgrades; and,
- Assistance to begin benchmarking.

The main offerings are described in further detail below.

<u>Whole-building energy audit and direct install of low-cost energy savings measures</u>
The MFBE program target is 5+ unit building owners/managers, those who can make decisions and take action to implement energy efficient improvements in the building as a whole. Eligible properties must have Xcel Energy as their electric service provider and either CenterPoint Energy or Xcel Energy as their natural gas provider. The 5+ unit multifamily building must also have a common entrance, common space(s) and in-unit kitchens to qualify for participation in the program. The determination of whether a property is eligible to participate is reviewed on a case-by-case basis.

To encourage engagement, the program starts with a free whole-building energy audit and the direct install of energy saving measures, with all services being provided by one third-party program implementer. After completion of the energy audit and direct installations, a written report identifying the building's baseline energy use, the audit findings and recommended energy savings opportunities that could receive a rebate and incentive is provided to the building owner/manager.

Direct install measures include:

- In unit LEDs;
- Common area screw-in LEDs;
- Smart Power Strips;
- Water Heater Set-back;
- Kitchen and bath faucet aerators;
- Energy efficient showerheads; and,
- Exterior door weather stripping.

Project consultation

The building owner/manager works with the program implementer to determine the energy improvements preferred for implementation from the audit report. The program implementer will provide review and oversight of equipment efficiency specifications oversee QA/QC to ensure improvements are performed as specified and assists with the rebate and incentive submission.

Rebates and bonus incentives for energy savings upgrades

Participants moving beyond the assessment and direct-install phase of the program and choosing to undertake energy efficiency upgrades are eligible for rebates with a program bonus incentive equal to 30 percent of rebate value for work completed.

Buildings qualifying as low-income (based on the August 2012 guidance document from the Department of Commerce, Division of Energy Resources) are eligible for doubled bonus incentives (60 percent of the rebate value). Although the MFBE program is not a dedicated low-income program, the use of this program adds additional value for these customers and the associated program costs for low-income buildings (including incentive spending and project delivery expenses) may be used for purposes of demonstrating compliance with the statutory low-income spending requirement.

Program Changes

The following table summarizes changes to the program for the 2020 Extension Plan.

Change	**Rationale**
Removed LED exit signs and water heater blankets from direct install measures offered	No opportunities for installation have been identified since the program launch
Adding exterior door weather stripping, water heater set-back and smart power strip measures to the direct install measure offering	Since the program launch, we have found many opportunities for these low-cost measures
Changed the program incentive structure	Based upon program performance, information received in the program evaluation and feedback from customers and stakeholders on the challenges with the program, we have changed the program incentive structure to a bonus incentive and prescriptive/custom rebate.
Adding a limited trial for Renter's Kits	We are adding a limited trial of free energy saving kits for

	individual renters who would like to engage in energy savings when their building owner/manager is not able or willing to participate in MFBE.
Building benchmarking assistance	The program will offer MFBE participants assistance to begin benchmarking their building(s) through the Utilities benchmarking tools available.

Budget and Goal Considerations
The budgets and goals have been adjusted to reflect the program's changes.

The main budget drivers include the following:

- Administration – This budget covers internal labor and expenses for program planning, promotion, implementation and vendor administration.
- Rebates – This budget covers the direct install measure costs, rebates and bonus incentives paid when energy efficient upgrades are achieved.

Involvement of Community Energy Organizations
We are participating in the MN Multifamily Affordable Housing Energy Network, which consists of various community stakeholders and initiated by Fresh Energy, Minnesota Housing, National Resource Defense Council and the National Housing Trust. We are also members of a national ACEEE working group focused on energy efficiency in multifamily properties.

Process Efficiency

Description
The Process Efficiency program is a Strategic Energy Management approach to managing energy for persistent savings and continuous improvement. In addition to capital equipment improvements for energy efficiency and demand response opportunities, the program also stresses system level operational change as well as cultural change from customers' senior management, mid-management and other personnel. Targeted at large to mid-sized industrial customers, these customized resources work to develop a holistic, sustainable energy management plan. This program provides funding for studies to identify and scope energy efficiency opportunities. Rebates are available to customers who implement qualifying energy efficiency recommendations. This program is primarily marketed to industrial customers through account managers. The program targets industrial customers that have at least 0.5 GWh or 2,000 Dth of conservation potential.

Offering
The program offerings are delivered in four phases. Each phase is defined in a Memorandum of Understanding that is customized to reflect the needs of the specific customer.

Phase 1: Identification
The Company performs a high-level analysis to identify opportunities for energy savings in the customer's business practices, facilities, and operations. This is completed at no cost to the customer. Phase 1 is delivered using a third-party provider selected through a Request For Proposal (RFP) process.

Phase 2: Scoping
This phase provides support and resources to further define, measure, and provide recommendations and assistance for energy savings opportunities while working with the customer to optimize the business practices identified in Phase 1. Total funding for Phase 2 is based on estimated savings and a typical customer is asked to contribute up to 25 percent with a maximum amount of $7,500. The purpose of the customer contribution is to ensure management-level engagement and the customer's commitment to a holistic approach. Phase 2 is delivered using third-party technical experts selected through an RFP process, or through technology-specific experts of the customer's choosing.

Phase 3: Implementation
The Company will work with the customer to put together an energy management plan which includes conservation goals, energy conservation and demand reduction projects. This phase includes a customized rebate and bonus schedule that rewards deep savings and/or a system-wide approach.

Upon project completion, customers receive rebates for improvements that qualify for any of our prescriptive or custom programs. The savings are included in the Process Efficiency program achievements, but mirror the rules and rebate levels of our other programs. If the improvements do not qualify for rebates due to program rules, we claim the project savings in a manner consistent with our study driven credit policy.

Phase 4: Energy Performance Services

Phase 4 is an option for customers who are interested ongoing commissioning and/or continuous improvement. Specifically, this phase will provide consulting services that support the customer through the process of installation, integration, and commissioning of energy information systems in an effort to demonstrate repeated and consistent improvements in energy usage. These services are offered to develop a baseline energy model and measurement and verification of energy savings due to behavior change and low-cost/no cost operational improvements. This offering can be done in conjunction with the Phase 2 offering or later in the engagement process.

Policies
Due to the holistic nature of this program, several policies have been previously filed and approved by the Department and continue to remain in effect:

- Bundling: When customers identify multiple measures for installation, a bundle can be evaluated to see if it qualifies for a rebate versus each individual component. This allows measures with too short of a payback for a rebate to be leveraged to drive projects with too long a payback for the customer to install so that both are implemented.
- Preapproval dates: Custom-type measures in Process Efficiency require a custom analysis, but the actual date the project is submitted and the analysis is completed does not disqualify a project if it was initiated after the customer entered into the program. This is due to the extensive resources used by the program to identify and scope ways to drive energy efficiency into how a customer does business. The goals and awareness created during Phases 1 and 2 can result in projects that drive energy savings in business areas that act without immediately notifying the personnel in contact with Xcel Energy.
- Rebate bonuses: We will use the rebate structure of the other end-use programs and then incorporate additional rebate bonuses for system optimization and/or exceeding annual achievement targets.
- Facility-level metering: We have worked in advance with the Department to define the methodology of how we to take credit under this metering scenario. Facility-level metering provides us the ability to accurately account for all savings generated by installation of a measure and incorporate the savings that may be driven plant-wide that we have been unable to accurately capture historically.
- Behavioral savings: We use the Department's Average Savings Method to count behavioral savings created through single entity-based behavioral change efforts. This also could apply to technical projects that require specific behaviors to maintain persistent energy savings throughout their lifetime.

Program Changes
None.

Budget and Goal Considerations
We determined the program's participation, energy savings goals, and budgets by examining historic participation levels, project and participation cycles, and costs.

The main budget drivers include the following:

- Administration – These costs are driven by marketing, sales, engineering, and external labor resources to support the Company's heavy engagement with the customer, as well as cover the costs of those projects requiring metered verification.

- Customer Service – The Company utilizes third-party resources to deliver the program's identification and scoping phases.
- Participant Incentives – The program has a robust rebate budget due to the size of projects likely to be initiated through the Process Efficiency program. In addition to standard rebates, Process Efficiency offers lucrative bonus rebates for exceeding energy savings and/or implementing projects on a system-wide approach.

Involvement of Community Energy Organizations

The Process Efficiency program works with Community Energy Organizations to promote the program and deliver its offerings. In particular, the Trillion BTU financing delivered by the St. Paul Port Authority and the Company collaborate to help customers fund large capital projects when financing is a barrier to implementation. We consider leveraging other resources as they become available through community and other organizations, and consider integrating their offerings into our program and customer's energy management plans.

Recommissioning

Description
The Recommissioning program offers study funding and electric and natural gas implementation rebates to commercial customers who optimize their existing equipment to make it more energy efficient. The program is primarily marketed through the Company's account managers, Business Solutions Center, and recommissioning study providers.

The program's main offerings include the following:

- Study funding of up to 75 percent of study cost (not to exceed $25,000) to identify and quantify recommissioning-related energy saving measures;
- Rebates for implementing recommissioning or building system tune up measures identified through a study;
- Building benchmarking tools to provide customers with a streamlined, consistent process for obtaining whole building energy usage data and measure the energy efficiency of buildings; and,
- Rebates to off-set the cost of Building Operator Certification training.

The main offerings are described in further detail below.

Recommissioning Study Path
Customers may receive rebates for both the study and implementation of their recommissioning measures. Our study funding helps customers pay a study provider to identify the recommissioning opportunities that exist within their building. Typical measures that are identified include, but are not limited to:

- Adjustment of outside air and return air dampers;
- Calibration/tune-up of Energy Management System points;
- Eliminating simultaneous heating and cooling;
- Optimum start/stop of air handlers and makeup air units (early shutdown in the
- evening, late start in the morning);
- Resetting of a chiller's condenser water temperature; and,
- Resetting the chilled water and hot water supply temperatures.

Fast Track Implementation Path
This path is for customers who have either performed a study outside of our program or have identified recommissioning measures within their building without an Xcel Energy-funded study. To qualify, we review their recommissioning savings opportunities to determine implementation rebates. We perform the same detailed review as we do for studies that we fund. Because our review helps customers make decisions, we claim Study-Driven credit for the resulting savings, no matter what the payback is, when customers implement the recommendations.

Refrigeration Recommissioning Path
This path is focused on analyzing grocery and convenience store refrigeration systems to determine how their refrigeration systems (i.e. compressors, condensers, display cases, suction and discharge temperatures) can be adjusted and optimized to save energy. Due to the nature of the recommended

measures, implementation of the energy savings recommendations occur as the provider is conducting the analysis.

Building Benchmarking Offering

This offering is a streamlined and consistent approach for building owners to access whole-building usage data and measure the energy efficiency of their building(s). The service relies upon ENERGY STAR Portfolio Manager to assist the Company's customers in benchmarking their buildings. Key features of the offering include:

- Building owner authorization;
- Tenant identification;
- Data privacy rule implementation;
- Consumption data aggregation and normalization; and,
- And automated data transfer to the ENERGY STAR Portfolio Manager.

Building Operator Certification Offering

Rebates offered to encourage the training and certification of building operators in the Company's Minnesota electric and/or natural gas service territory through the Building Operator Certification (BOC) program. Rebates are paid to participants who complete Level I or Level II of the BOC training. Energy savings are captured on a per-participant basis and are derived through the training's influence on building operators to identify energy efficient opportunities and make energy conscious decisions.

The Department has previously approved the following policies, which are specific to Recommissioning:

- Documentation of implementation: If it is too burdensome for the customer to provide invoices for a project, we will accept their signature as documentation of implementation as long as the customer is willing to forego any potential rebate.
- Study-driven credit: If a customer implements measures that have less than a nine month payback or greater than a 15 year payback, the customer will not receive a standard implementation rebate (customer may be eligible for a bonus rebate if measure is implemented within 9 months) but we will claim those study-driven savings. We believe that our help identifying and analyzing energy efficiency measures provides sufficient influence on the customer's decision to implement those measures.
- Nine month bonus incentive: Because most recommissioning measures have a less than nine month payback, the Recommissioning program offers a bonus incentive of $0.03/kWh and $3/Dth for customers who implement recommended recommissioning measures within nine months of the study approval date (date on the customer's study approval letter).
- Secondary credit: We will offer rebates and take credit for measures that have secondary benefits in addition to on-site energy benefits. These secondary benefits could include purchase chilled water, city water, etc. The electricity savings embedded in these secondary benefits will be added to the on-site reduction.

Program Changes

None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined by reviewing past participation levels for the program.

The main budget drivers include the following:

- Rebates – The budget includes costs for study rebates, implementation rebates, and the nine month implementation bonus. Historically, we have paid out more in study rebates than implementation rebates.
- Labor – These budgets are based on historical actuals for the program.
- Promotion and Advertising – This budget is for customer mailings, literature and trainings.
- Consulting – We offer a vendor incentive to encourage study providers to aid customers in implementing their recommended recommissioning measures.

Involvement of Community Energy Organizations
We value feedback from customers and study providers and make an effort to gather their input to ensure the program is effective. As ideas are generated, the team reviews and implements if feasible. The program team and trade relations manager meet formally and informally with active trade allies to discuss the program and obtain feedback as necessary.

Self-Direct Efficiency

Description
The Self-Direct Efficiency program provides our larger electricity and natural gas business customers with the opportunity to self-manage their energy saving projects. For this responsibility and their efforts, we offer higher rebates whose dollar value is based on the amount of energy savings achieved.

Participants must have the ability to perform the project design, conduct engineering review, analyze their measurement and verification (M&V) results, commission their work, and validate and report the associated energy savings for any projects included in this program.

This program is targeted toward self-sufficient customers with an interest and capability to oversee their own energy efficiency improvement projects, as opposed to those who desire full-service via holistic products like Process Efficiency. The program gives self-sufficient retailers and public service providers, larger property management companies, manufacturers, and multi-national corporations the opportunity to plan efficiency around their business model.

Customer eligibility requirements include a minimum aggregated monthly peak load of at least 2 MW and/or an aggregated annual energy usage of at least 10 GWh and/or 100,000 Dth. Customers may bundle multiple projects in their energy management plan to meet the eligibility requirements. Qualified customers will identify their energy savings initiatives and submit an application, proposed energy saving plan, monitoring plan, and pre-project energy usage data to Xcel Energy for review and preapproval. We will issue a preapproval receipt with their rebate offer.

After the fully installed and operational project is completed, customers submit their project completion documents (application, final report. and monitoring results) for review and final approval by the Company, whereupon a rebate check based on the achieved savings, is issued. The Company reserves the right to request additional information and make amendments regarding the project scope and expectations, as warranted, with the objective of understanding and coming to mutual agreement.

Qualified customers will be allowed to participate in other CIP programs offered by the Company, but will not be eligible for a rebate for the same efficiency measure through another program.

Program Changes
None.

Budget and Goal Considerations
The budgets were developed based on anticipated expenditures to review prospective customer projects. The anticipated sales cycle from project initiation to completion is about 18 to 24 months, and it represents a risk of stranded investments to Xcel Energy if a customer withdraws before completing their project. We will mitigate this risk by monitoring the customer's commitment throughout the process.

The main budget drivers include the following:

- Administration – This budget includes the costs of internal labor which were estimated using historical spending.
- Participant Incentives – The rebate budget is a variable but not posted for this program because of historical intermittent participation.

Involvement of Community Energy Organizations

We anticipate that some customers will hire local consulting engineering companies to help design and manage their projects, and we also anticipate customers in area energy initiatives will be involved as well.

Turn Key Services

Description
The Turn Key Services program is designed to remove hurdles for our business customers of all sizes when identifying and implementing energy efficiency projects. The program is primarily promoted through our energy efficiency specialists and account managers. We work closely with our third-party consultants to fulfill the program.

The program's main offerings include the following:

- Prescriptive rebates for the end-uses rebated in our other prescriptive programs;
- Custom rebates for any measure eligible for rebates under our other custom programs; and,
- A subsidized audit that identifies energy saving opportunities. Customers pay a portion of the audit cost based on their size.

The main offerings are described in further detail below.

Identification of Measures
Customers signing up for an assessment will receive an ASHRAE Level I audit. This assessment is a walkthrough of the entire facility and involves an analysis of the customer's utility bills and includes graphs that show how much energy is being used by each end use. The audit will identify simple low/no cost opportunities in addition to higher cost conservation opportunities. An ENERGY STAR Benchmarking score will be calculated for all applicable building segments. All opportunities will also include energy savings estimates, cost savings and applicable rebates.

Implementation Services
The program will offer a variety of services that customers may choose from depending on their specific needs to help them implement their projects. Services include, but are not limited to:

- Attending internal stakeholder customer meetings to obtain approval;
- Assistance with prioritizing projects;
- Financial analysis of implementing measures;
- Bidding process review;
- Coordination of implementation and pre-metering, if necessary;
- Verification of installation and post-metering, if necessary; and,
- Paperwork compilation and rebate submission.

Funding
Participants will be eligible for prescriptive and custom rebates for installed and implemented energy efficiency measures. In addition, we will subsidize audits and implementation services to encourage customers to move beyond the barriers to participation.

Consistent with other custom type projects, we anticipate there will be projects identified through this program that are custom in nature and payback to the customer is less than nine months. The Company will claim study-driven credit for these projects.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were determined by reviewing historical program performance and study participation.

The main budget drivers include the following:

- Administration – This budget includes labor estimates which are based on historical spending.
- Third Party Customer Services – This cost includes the assessments, scoping, and project management services provided directly to the customer.
- Promotion – This cost includes promotional outreach tactics to increase awareness and encourage participation. It is always important to build a pipeline of audits for Turn Key to help with future goals.
- Participant Incentives – The rebate budget reflects the assumed participation across multiple end-use programs based on projects implemented in 2015.

Involvement of Community Energy Organizations
The Turn Key Services program employs the services of a third-party company to deliver the assessments and the project scoping and implementation assistance for the program.

Electric Rate Savings

Description
The Electric Rate Savings program is offered to business customers that can reduce their electric loads during control periods by at least 50 kW. In return for reducing their loads, they receive a monthly discount on their controllable demand charges through a tariffed rate from January through December.

Tariffed rate discounts are tiered level program enrollments based on the total number of hours per year that customers agree to be interrupted. Tiered level groups contain sub-level groups A, B and C each with an exclusive discounted controllable demand charge rate. All new customers enrolling in the Electric Rate Savings program begin in Tiered level groups and sub-groups are reviewed annually for every program participant to determine appropriate sub-level group discount. Participants save as much as 50 percent on demand charges over the year. Currently, the Electric Rate Savings program is promoted directly through the Company's account management and Business Solutions Center team.

Program Changes
None.

Budget and Goal Considerations
The program's participation, energy savings goals, and budgets were estimated using historical program performance and emerging market influences expected in the near future. The budget for this program includes labor costs for associated services, with the remaining costs attributed to customer communications.

Every year a program information packet is sent to each participating customer, explaining any program changes, reminders of their responsibility as an interruptible customer on a control day, and historical information. Due to the possibility of year-round controls within Midcontinent Independent System Operator's (MISO) territory and a required annual real power test, program growth is not expected. Additionally, environmental rules for the operation of back-up generators are likely to have an adverse effect on participation. As a result, the budget for the program will remain steady in an effort to maintain current participation levels for 2020.

The main components of the program budget include:

- Administration – This category includes labor costs for internal sales, sales support and fulfillment, marketing administration and planning, equipment installation and maintenance, project planning and implementation.
- Advertising and Promotion – We have budgeted to conduct an annual customer mailing, test event mailings, customer town meetings, and program collateral materials.

Involvement of Community Energy Organizations
None.

Peak Partner Rewards

Description
Peak Partner Rewards (PPR) is a new program that offers bill credits and access to electric load profile data to business customers that agree to reduce their electrical loads when the electric grid experiences peak demand periods. The program differs from the Company's other demand response programs for business customers through its incentive structure, which emphasizes actual performance during control periods and through the increased level of data the customer can access about their load profile and incentive.

Participating customers sign a contract agreeing to reduce load at their facility during peak demand periods. This load is determined by the customer based on their ability to manage operations within their facility. The kW commitment can vary each month, however during the summer months of June through September the participants commitment cannot be less than 25 kW. The initial contract term is 12 months followed by an annual term that is automatically renewed each year. A sixty day written notice is required from the customer in order to cancel their participation.

The PPR offering includes the following incentives:

- Reservation Incentive – A monthly kW bill credit ($/kW) calculated by multiplying a capacity payment by the participant's contractual monthly load reduction obligation.
- Performance Incentive –An incentive calculated by multiplying an energy payment ($/kWh) by the participant's total energy reduction during the event period(s).
- Load Profile Data Access – Customers who participate in the program receive an additional benefit of having access to their electric load profile data in near real time.

Peak demand periods (events) are triggered as a result of capacity, contingency and/or economic constraints upon the electrical system. Peak periods are typically defined as June through September between the hours of 2:00 p.m. and 6:00 p.m. However, events may occur in any month throughout the year during any hour. In addition to events called for a specific need, each customer may be subject to up to two test events each calendar year. The purpose of test events is to insure participants are able to deliver the load reductions committed and verify energy savings for the program.

A key asset enabling this program is the Company's Demand Response Management System (DRMS). This system is the platform from which all of the Company's demand response programs are managed. In addition to managing events and providing customer notification, the system provides program participants with the additional benefit of near real time access to their load profile data through a customer portal. Having this data allows participants to manage their energy use during events to insure they comply with their contractual requirements as well as maximize their potential incentive. All load reduction calculations are automated through the DRMS.

To enable this process, monitoring equipment will be installed on the customer's meter. Though each participant's configuration may vary depending on their unique circumstance, this equipment generally consists of a "pulse" device to transmit data from the customer's revenue meter back to the Company's DRMS. Installation of monitoring equipment takes approximately 60 days.

Program Changes
This is a new program offering beginning in 2020.

Budget and Goal Considerations
The program's participation, energy savings goals, and budget were developed based on the Company's ongoing experience with a PPR program in its Colorado territories.
The main budget drivers include the following:

- Rebates – This category includes the Reservation and Performance Incentives paid to participating customers.
- Administration – This category covers costs associated with day-to day operations of the program as well as consulting from Company staff to assist customers in identifying controllable loads and an appropriate load reduction value.
- Equipment & Installation – This category reflects the cost to purchase and install monitoring equipment at each participant's facility. Expenditure is expected to be greatest in the early years of the program as the participant base is built. Future expenditures will reflect costs of growing the program incrementally and any ongoing equipment maintenance for current participants.
- Promotion and Advertising – Marketing and communication materials are created to communicate the features and benefits of the program. These marketing materials include a program guide summarizing key features and benefits and a PPR website accessible on the Company's website to provide more extensive program information. Additionally, the Company will utilize its program management, account management, and Business Solutions Center teams to recruit customers. However, budget has been included for a 3rd party recruitment vendor to assist with these efforts if needed.

Involvement with Community Energy Organizations
PPR was one of several programs discussed during demand response stakeholder engagement meetings as part of Docket No. RP-15-21. The following are design criteria discussed in those meetings and how this program meets those criteria:

1. "Compensate demand response appropriately given the specific benefits it provides." Incentive levels for PPR are established based on the Company's average avoided generation ($/kW-year) and energy ($/MWh) costs during peak demand periods. Specific periods modeled included typical peak periods (2-6 PM summer weekdays) as well as actual control periods from 2014-January 2019.
2. "Ensure pricing and expectations are clear, concise, and transparent for customers." The Company is developing a program operations plan which outlines pricing, expectations, and procedures related to program implementation. The operations plan will include a customer contract that will clearly outline expectations. Information regarding the program will also be available in marketing materials and a program website, as discussed above.
3. "Provide flexibility and options for customers." PPR provides the customer flexibility in the following ways: it does not specify how the customer must meet load reduction obligations, allows them to designate load reduction obligations by month, and provides them with real-time data through a customer portal to make informed decisions.

Saver's Switch® for Business

Description
Saver's Switch for Business is a load management program available to business electric customers with central air conditioning. Participating customers receive a monthly discount on their June through September bills. In exchange for the discounts, participants allow the Company to cycle their air conditioner on and off during control events, which typically occur on hot, humid summer days. Air conditioners are controlled via a radio operated switch installed by a licensed electrician on or near the customer's air conditioner. The switches utilize an adaptive algorithm designed to ensure a 50 percent reduction in air conditioner load during a control event. In the past decade, the company has issued relatively few control events. The program allows for up to 300 control hours each year.

With the potential for deploying a new advanced meter reading system in Minnesota, the Company aims to test new 2-way communicating Saver's Switches in the state. The goals of the new switches are improving signal reception rate over the current paging base technology and improving visibility to failing switches in the field.

Program Changes
None.

Budget and Goal Considerations
The program budget and savings were developed based on equipment and installation costs for the number of switches to be installed or replaced. For the foreseeable future, in addition to recruiting new participants, we intend to replace switches older than 15 years. We also conduct inspections of additional older switches to verify functionality and, if needed, replace with new hardware. The overall participant target is met with a combination of new installations and maintenance replacements.

The main budget drivers included the following:

- Administration – This budget category covers the costs of internal labor for program planning and implementation, as well as the costs of external contract labor and software maintenance.
- Customer Service – The program uses a third-party to install the switches.
- Advertising and Promotion to generate awareness of Saver's Switch.
- Measurement and Verification – The program hires a third-party to conduct data collection for measurement and verification to determine the savings per switch.

Involvement of Community Energy Organizations
None.

Business Education

Description
The Business Education program focuses on creating awareness of energy efficiency and providing business customers with information on how they can reduce energy use in their buildings. The program encourages customers to make Xcel Energy their first contact when considering equipment or process upgrades, and engages customers to make changes that lower their energy use. It focuses on removing the barriers to adoption of energy efficiency measures by educating customers and their employees on the impacts of their energy use and offering information on how to take action to achieve long-term energy savings.

The program is primarily marketed to small- and mid-sized business customers through sponsorships and customer outreach, direct mail and email newsletters, and the Company's Energy Efficiency Specialists in our Business Solutions Center.

The program's main offerings include the following:

- Sponsorship and customer outreach; and,
- Digital communications.

Sponsorships and Customer Outreach
A variety of grassroots community events, sponsorships, and workshops are utilized by the program to promote energy efficiency rebates and strategies to a wide range of customers. This in-person, one-on-one customer outreach is critical to driving onsite customer leads and program signups.

Digital Communications
The program takes part in targeted digital communications to reach a variety of small business customers, taking into account the wide range of industries and customer segments. Examples of digital communications include:

- Targeted email campaigns;
- Energy efficiency newsletters; and,
- Social media.

Program Changes
None.

Budget and Goal Considerations
The program's participation goals and budgets were determined by estimating direct mail and email campaign read and open rates, educational material requests, as well as community outreach activation and sponsorship.

The main budget drivers include the following:

- Administration – This budget provides funds for internal staff and external fulfillment.
- Promotion – This budget includes funds for direct mail promotion of no cost/low cost energy-saving tips, energy efficiency events, sponsorships, and activation

Involvement of Community Energy Organizations

The Business Education program participates in a variety of community-hosted customer outreach events. The program provides displays, staffing, and materials to promote energy efficiency to attendees.

Small Business Lamp Recycling

Description
The Small Business Lamp Recycling program encourages electric customers in Minnesota to recycle their spent fluorescent bulbs instead of discarding them, to ensure that mercury does not get into the environment.

The program's main offerings include the following:

- Free compact fluorescent light bulb recycling at participating local hardware stores and partnering county hazardous waste facilities; and,
- Coupons for 50¢ off the recycling fee for each fluorescent tube and HID bulb at participating hardware stores. The coupons are available at participating hardware stores and on the xcelenergy.com website.

The Small Business Lamp Recycling Program is marketed primarily through the Company's Home Lighting program website, promotions, and participating hardware stores. A search feature allows customers to search by zip code to find the nearest recycling locations.

The Company follows the requirements of Minn. Stat. 216B.241, subd 5, which necessitates public utilities to notify customers that fluorescent recycling is the law. Every Small Business Lamp Recycling and Home Lighting promotional piece includes a disclaimer regarding the statute, such as, "Fluorescent lamps contain small amounts of mercury that are harmful to the environment. In Minnesota, it is illegal to dispose of spent mercury bulbs in household trash receptacles."

Program Changes
None.

Budget and Goal Considerations
The budget was developed based on historical spending and the expected number of bulbs to be recycled in the coming years. The main budget drivers include the following:

- Administration – This provides funds for internal labor for planning and program implementation.
- Promotion and Advertising – We market this program with the Home Lighting promotions.

Involvement of Community Energy Organizations
None.

Residential Segment

Description
The Residential Segment reflects a diverse population across electric and natural gas customers. In this Extension Plan, the Residential portfolio will offer a comprehensive set of programs including prescriptive rebates for equipment, whole home solutions for new and existing homes and educational offerings.

Programs
The Residential Segment proposes numerous program offerings for this Extension Plan, including direct impact programs and indirect programs in which customers can choose to participate. We will continue to offer all programs from the 2019 program year while offering new opportunities for participating in energy efficiency.

Overall Goals
The Residential Segment is the Company's second largest segment in the Plan, consisting of more than 30 percent of both planned electric and gas savings achievements:

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Residential	1,262,520	$29,703,346	46,161	141,542,491	608,321	$8,383,050	310,621
Total CIP Portfolio	1,397,081	$102,371,401	116,706	454,160,800	632,668	$18,730,192	786,334

The segment portfolio is designed to provide all residential customers with an opportunity to participate. The Company anticipates the majority of energy and demand savings within the Residential Segment will come from several key programs in 2020, including: Home Lighting, Energy Feedback, Residential Cooling, Refrigerator Recycling and Residential Heating.

Market Analysis
A strong economy was taken into account when determining program savings plans and consumers' ability and willingness to invest in higher efficiency equipment and invest in whole-home solutions.

Marketing/Advertising/Promotion
The Company relies heavily on trade allies, end-use equipment vendors, and our call center representatives to drive energy efficiency and load management participation in the Residential Segment. To support our marketing efforts we will employ an integrated approach to communications with tactics reinforcing the key messages over time. Those key messages include our clean energy commitment, reduced energy consumption, lower utility bills and environmental impact. A strategic plan for mass market advertising and promotions including event planning will help us to reach our customers and to encourage program participation.

Overall Policies
The Residential Segment does not have any unique, segment-based policies. Each program will enforce its participation and equipment eligibility rules and requirements.

Stakeholder Involvement

The Company continues to regularly meet with many organizations to refine our existing programs, shape new programs, and discuss partnership opportunities. These organizations include other utilities and industry experts such as:

- CenterPoint Energy;
- Great River Energy;
- Center for Energy and Environment;
- Minnesota Energy Resources Corporation;
- American Council for an Energy Efficient Economy;
- U.S. Department of Energy and ENERGYSTAR;
- Consortium for Energy Efficiency;
- Slipstream (formerly WECC); and,
- Air Conditioning Contractors Association.

Efficient New Home Construction

Description
The Efficient New Home Construction program encourages home builders to construct energy efficient residential homes by providing incentives for achieving total energy savings of at least 10 percent better than code.

This program applies to builders of residential single-family, duplex, triplex, fourplex, town homes, and condominium units that have individual heating systems and residential meters for the Company's gas and/or electric service. We use a third-party implementer to recruit raters and to provide product training for raters and builders. The third-party implementer is responsible for collecting and reviewing building information from the raters and providing information to the Company for use in determining savings. The implementer also maintains all of the collected data in its own database. Builders hire their own RESNET-certified house raters who coordinate with their own RESNET providers.

The program's main offerings include the following:

- Builder rebates for the Company's heating homes achieving a total energy savings level of at least 10 percent above the level established by code;
- Builder rebates for electric-only homes achieving a total energy savings level of at least 10 percent above the level established by code;
- Appliance rebates for qualifying homes with Xcel Energy electric service; and,
- Rater incentives.

The main offerings are described in further detail below:

Xcel Energy Heating Customers
Homes must test out at a minimum of 10 percent total energy savings above code and must have positive therm savings. Homes not reaching that minimum threshold are not eligible to participate and no incentives or payments will be issued to the builder or the rater. Rebates for this program are paid to the builder.

Electric-only Homes
For homes built in the Company's electric-only service territory that are not Xcel Energy heating customers, the builder receives a rebate when the home achieves the minimum 10 percent total energy savings above code and has positive kWh savings.

Appliance Rebates
The following appliances are eligible for rebates in homes that successfully participate in either of the offers above and where Xcel Energy is the electric provider:

- ENERGY STAR®-rated clothes washer;
- ENERGY STAR-rated radon mitigation fans; and,
- ENERGY STAR-rated refrigerators.

Rater Incentive

The program pays an incentive to raters for each home they submit to the program. This incentive recognizes the additional work required for data collection and entry.

Program Changes
None.

Budget and Goal Considerations
The program's budgets and electric and gas energy savings goals were determined by cost estimates based on historical program expenses and forecasted participation rates.

The main budget drivers include the following:

- Administration – This category funds project planning and implementation along with program management. This includes the payment for the data aggregator serving the program.
- Advertising and Promotion – The program's direct promotion through mass market promotion, energy efficient building practice training, and sales support materials are supported with these funds.
- Participant Incentives – These funds cover builder rebates.

Involvement of Community Energy Organizations
None.

Energy Efficient Showerheads

Description
The Energy Efficient Showerheads program provides free high-efficiency showerheads and bathroom and kitchen faucet aerators to help reduce energy costs and water use for the Company's residential customers with gas or combination service. The program is primarily marketed to residential customers and single-family homes through email and direct mail. Eligible customers are contacted and offered a free kit, valued at approximately $10-$14 depending on the specific combination of measures. The kit is shipped to customers who respond to the offer within the promotional period. Kit contents include a combination of showerheads, kitchen and bath aerators, Teflon tape, and illustrated installation instructions. Eligible customers may also order free basic showerheads and aerators, or purchase showerheads with additional features at a discounted rate from the Company's online store.

The Company contracts with third-parties to manage all customer responses and distribute the energy efficient showerheads and aerators. The third-parties are recognized distributors of energy efficiency-related products in the United States. Customer responses are tracked by the providers, given to us following the distribution, and kept in a tracking system to calculate savings.

The program's main offerings include the following:

- 1.5 GPM high efficiency showerhead;
- 1.5 GPM kitchen aerator; and,
- 1.0 GPM bathroom aerator.

The main offerings are described below.

- Customers who have two bathrooms and have not yet participated in the program or participated more than six years ago are eligible to receive a kit containing:
    - Two 1.5 GPM high efficiency showerheads;
    - One 1.5 GPM kitchen aerator; and,
    - Two 1.0 GPM bathroom aerators.
- Customers who have one bathroom and have not yet participated in the program or participated more than six years ago are eligible to receive a kit containing:
    - One 1.5 GPM high efficiency showerhead;
    - One 1.5 GPM kitchen aerator; and,
    - One 1.0 GPM bathroom aerator.
- Customers who have not yet participated in the program or participated more than six years ago may also individually purchase some or all of the items included in the two bathroom kit from the Xcel Energy store.

Customers responding to the promotional offer must indicate if they have one or two bathrooms in their home and what fuel serves their water heater (gas, electric or unknown). Other kit combinations may be developed based on customer demand and eligibility determined by past participation. Each new participant is allowed one kit and customers may participate in the program once every 10 years. However, previous measure life was deemed at 6 years and therefore past participants are eligible for the free measures after 6 years.

Program Changes
None.

Budget and Goal Considerations
The product budget was developed based upon the expected participation level. Using the past program performance as a guide, the cost of the measures, fulfillment, postage, and all necessary marketing efforts were included to develop the budgets.

The main budget drivers include the following:

- Administration – This covers the costs of external fulfillment, web development, rebate costs, project planning, and implementation.
- Advertising and Promotion – The program uses direct mail and email to attract customers.
- Measurement and Verification – This category provides funds to survey participating customers.

Involvement of Community Energy Organizations
None.

Energy Feedback

Description
The Energy Feedback program is a behavioral conservation program. The program provides a targeted direct mailing ("Report") to a designated group of residential customers, giving them specific information and recommendations on ways to reduce their energy consumption. Customers receive new information with each Report. Savings are quantified by comparing the energy consumption of the recipient group to that of a non-participating control group. The program also offers an online web portal that features even more ways for customers to learn about energy use in their homes and possibilities for reduction. The web portal is available to all customers, with the only qualification being enrollment in My Account.

The program's main offerings include the following:

Personalized Energy Usage Reports
These individualized reports are mailed and/or emailed to customers on a cadence prescribed by their tenure in the program. Reports provide:

- Customer's energy use compared to other, nearby customers who had similar usage profiles and home characteristics (occupancy, heating fuel, square footage, etc.) prior to program enrollment;
- Targeted efficiency recommendations based on home profile data available; and,
- Other information such as consumption graphs or year to year bill comparisons.

Recipients are selected from among the Company's residential customers and may "opt out" of the program at any time upon request.

Online Portal
This feature is available to all residential customers. It provides the same information as energy usage reports on demand, along with more detail and other options. When going to the web portal, customers can:

- See their neighbor comparison;
- See graphs showing energy consumption by fuel type by bill period or day;
- Perform a self-guided audit which provides insight into how energy is used in the home;
- Receive personalized energy tips and advice on energy efficiency improvements to make; and,
- Aggregate points based on activities and actions customers undertake. These points are redeemable for gift cards to retailers, including energy efficiency retailers.

Customers are encouraged to visit log in to My Account and access their energy usage portal through the use of emails, targeted messaging, and social channels.

Program Changes
The Company has chosen a new vendor for its energy usage reports. This change will be complete on January 1, 2020. This should lead to better customer engagement, experience, significantly reduced cost, and no reduction in energy savings. Despite the projected reduction in cost, the 2020

program budget will remain the same. The magnitude of this reduction, coupled with internal costs for program transition, are both variable. This uncertainty underpins keeping the budget identical.

Budget and Goal Considerations
The goals were developed based on prior years' savings, attrition, and refill data. Costs were supplied by the new vendor for delivery of the reports and for hosting the portal.

The main budget driver for the program is:

- Administration – This budget provides for program management and implementation along with data management and program development. Labor is expected to be five percent of the budget.

Involvement of Community Energy Organizations
None.

Home Energy Squad

Description
The Home Energy Squad program offers custom installation services to electric and gas customers seeking to improve their homes' energy efficiency and comfort, and to lower their utility bills. The program directly installs a number of moderate-impact, low-cost measures for gas and electric customers. The program is designed to assist customers' efforts to overcome barriers related to making energy improvements, including confusion about product choices, varying costs, and finding qualified installers. The program charges a flat fee and offers customers the choice among measures within a suite of energy-saving items.

The program's main offerings include the following:

- Electric measures, including:
  - LEDs; and,
  - Programmable thermostat installation (see next bullet).
- Heating and cooling measures, including:
  - Weather-stripping of external doors; and,
  - Programmable thermostat installation and programming, and setback of pre-existing programmable thermostats.
- Hot water measures including:
  - High efficiency showerheads and faucet aerators; and,
  - Temperature assessment and setback of water heater; and,
  - Water heater blankets.
- Optional measures for customer purchase including:
  - Dehumidifiers, installation and recycling;
  - Smart thermostat;
  - Additional, installed thermostats; and,
  - Electronics timer.

The main offerings are described below:

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined by cost estimates based potential number of participants and historical program expenses. The main budget drivers include the following:

- Administration – This category funds program administration costs through third-party vendors, as well as third-party labor for the installation of energy efficient measures in customers' homes.
- Promotion and Advertising – This category covers print, broadcast and interactive advertising, and event promotion.

Involvement with Community Energy Organizations
Xcel Energy partners with CenterPoint Energy to serve their common customers.

Home Lighting

Description
The Home Lighting program provides resources for customers to purchase energy-efficient LED light bulbs. Energy-efficient bulbs are an easy and inexpensive way for customers to save electricity. The Company provides an avenue for customers to purchase discounted energy-efficient bulbs through local retailers.

The Company motivates customers to purchase LEDs by offering in-store retail discounts. The discounts are provided through collaboration with bulb manufacturers and retailers. The three entities combine resources to offer instant rebates enabling customers to purchase a variety of energy-efficient bulb models, such as A-lines, reflectors, globes, and LED fixtures, at a discounted price. The discount varies depending on the type of bulb and the manufacturer/retailer partner. . The customer receives the discounted price at the cash register, which means there is no mail-in rebate form, making it especially easy to participate. Incentives are paid upstream and the discounts are passed on directly to the customer.

In this Extension Plan, the Company will continue to focus marketing dollars toward increasing awareness of LED bulbs by helping educate customers about the product benefits, what to look for when purchasing an LED, and the changing marketplace. By informing customers about the numerous benefits of LED bulbs, we expect to further drive sales of LED bulbs. The Company will continue to use various media channels to reach customers such as: radio, TV, in-store signage, publications, bill onserts, social media, internet, and sponsorship of community events. The peak sales period for energy efficient bulbs is in the fall and winter, when lighting is used more, as such, most of the promotions are scheduled during these peak buying periods.

The Company currently partners with a number of retailers, including: Home Depot, Walmart, Costco, Ace Hardware, and Menards. We use an RFP process each year to select participating retailers and enable partnerships with a variety of retailers (including big box, mass merchandiser, hardware stores and grocery outlets), which helps ensure optimal pricing and reduces free-ridership. The Company also uses a third-party to implement the RFP and to help manage the program. The implementer is primarily responsible for tracking the product sales details, including the location, types and quantities of bulbs sold each year and calculating the energy savings.

Program Changes
None.

Budget and Goal Considerations
The energy savings and budget target for the product was derived by analyzing the market potential and historical sales data, while considering new technologies, available retail channels, and participating customer segments. Below is a general breakdown of the various budget components:

- Rebates - The vast majority of the budget is allocated for rebates. This budget reflects the average rebate levels and projected customer participation.
- Labor - These budgets are based on past program performance.
- Promotion and Advertising - Home Lighting is promoted widely to our customers via our advertising and promotional campaigns, including TV, radio, social media, and community

events. Education on the benefits of LEDs and how to get a discount is our primary focus of advertising and promotion. Costs are based on the necessary tactics to achieve these goals.

- Admin - This budget includes third-party implementer costs.

Involvement of Community Energy Organizations
None.

Insulation Rebate

Description
The Insulation Rebate program offers prescriptive electric and natural gas rebates to customers who upgrade the insulation and air-sealing in their homes. The program captures natural gas and electric savings on existing single-family and multi-unit homes, up to four units, that professionally install insulation with a Building Performance Institute (BPI)-certified installer or other certified insulation installer.

The Insulation Rebate program is marketed primarily through a mix of social media, bill onserts, the Company's website, and cross-marketing opportunities with other Xcel Energy programs.

The program's main offerings include the following prescriptive rebates:

- Attic insulation;
  - Must have a pre R-value of 20 or less; and,
  - Must have a post R-value of 44 or greater.
    - Homes with existing insulation of R-21 or greater must add at least R-25 of additional insulation.
- Wall insulation;
  - Must have empty wall cavity; and,
  - Must have a post R-value of 12 or more.
- Air-sealing, which must be done in conjunction with either attic or wall insulation; and,
- A blower door test must precede and exit the project.

Offering
Participating customers must contract for insulation services with a BPI-certified insulation contractor and insulation certification that follow the BPI certification practices and criteria in order to qualify for a rebate. Additionally, air sealing is no longer a stand-alone measure and must be done in conjunction with either attic or wall insulation. We rely upon a dealer network to aid in the success of the program. The Trade Relations Manager offers program-specific trainings and information sessions to the insulation trade.

An online registry of BPI or certified insulation contractors is available for customers to choose a certified insulation contractor on the Company's web page for this program. In order to qualify for rebates, customers must choose an insulation contractor from this online registry.

Program Changes
None.

Budget and Goal Considerations
The program's budgets and electric and gas energy savings goals were determined based on historical program performance. Marketing dollars focus on cross-marketing opportunities with the Company's other programs and social media, both of which are proven cost-effective strategies for this program.

The main budget drivers include the following:

- Administration – This category funds program planning and implementation, channel management, and rebate processing.
- Advertising and Promotion – The program utilizes social media, contractor training, and cross-utility marketing to promote the program, and uses direct and indirect promotions such as community outreach events in partnership with other electric and natural gas rebate programs.
- Participant Incentives – These funds cover the costs of customer rebates.
- Measurement and Verification – The program uses these funds to perform verification of submitted paperwork.

Involvement of Community Energy Organizations
The Xcel Energy residential trade relations manager is involved with the Minnesota Building Performance Association and the Xcel Energy trade partners network to help advance the program.

Refrigerator Recycling

Description
The Refrigerator Recycling program offers residential electric customers prescriptive rebates and pick-up services to dispose of their operable, inefficient refrigerator, freezer, room air conditioner, and dehumidifier units in an environmentally safe and compliant manner. The program is designed to educate customers about these inefficient appliances and the potential long-term cost and energy savings from removing them.

The main offerings are described below.

The program offers free pickup, recycling, and a prescriptive rebate for the following:

- Any functional refrigerator; or,
- A freezer operating as a standalone unit.

The program offers free pickup and recycling, in conjunction with a refrigerator or freezer, for the following:

- Any functional residential room air conditioner; and,
- Any functional residential dehumidifier.

The program is limited to two refrigerators and/or freezers removed per household per year. The program takes energy credit for each freezer or refrigerator based on its age and unit type. The Company utilizes the services of a qualified third-party vendor to perform the following services:

- Unit collection, recycling, transportation and storage;
- Qualification of unit at the time of scheduled pick up;
- Appliance processing and materials recycling;
- Issuance of incentive payments;
- Implementation of all customer service related to above activities;
- Product tracking and reporting; and,
- Supporting Measurement and Verification requirements.

The vendor is required to comply with all local, state and federal requirements. This includes maintaining all permits and licenses required for any facilities, equipment and personnel used for this product. The vendor is bound by contract to de-manufacture and recycle all units received; none may be re-sold or placed back in service. The adherence to this process ensures that recycled units will not re-enter the market.

The Company and the third-party vendor both market the program. The target market consists of customers who are disposing of their functioning refrigerator and/or freezer. Generally these customers have a single-family home with two or more individuals in the household. The marketing strategy utilizes seasonal campaigns to promote the product. Product demand often peaks in the summer months, which is associated with customer home improvement and cleaning projects. Deployment of promotional tactics coincides with these seasonal time periods, with contingency plans if goals are not made by third quarter of each year. Additionally, the third-party vendor will survey participants annually to determine customer satisfaction and verify energy savings.

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined from historical program results and costs per participant. The main budget drivers include the following:

- Administration – The program uses a third-party vendor to implement the program, including: marketing planning, online scheduling, call center operations, appliance collection, transportation and storage, qualification of appliances, appliance processing, materials recycling, issuing of customer incentive payments, all customer service aspects related to recycling, product tracking, all reporting to Xcel Energy and environmental and compliance entities, supporting measurement and verification, and compliance with all local, state and federal requirements.
- Participant Incentives – The program pays customer rebates with these funds.
- Labor – This budget category is used for internal marketing and rebate operations labor.
- Promotion and Advertising – This effort includes: bill inserts, direct mail, print, outdoor, broadcast and online advertisements, community outreach, and social media.

Involvement of Community Energy Organizations
None.

Residential Cooling

Description
The Residential Cooling program encourages customers to purchase new energy efficient cooling equipment, installed using Quality Installation (QI) standards regarding proper sizing, airflow, duct sealing, and refrigeration charge. The program provides an incentive to the Company's electric customers to purchase qualifying central air conditioning (AC) or air source heat pump (ASHP) equipment and have it installed by QI standards. Ground source heat pumps (GSHP) are eligible for rebates when customers purchase and install qualifying equipment; however, these are not subject to QI requirements. Additionally, ductless mini-split heat pumps may receive a rebate based on certain criteria.

The program's main offerings include prescriptive rebates for the following:

- Central Air Conditioners & Air Source Heat Pumps with Quality Installation;
- Ground Source Heat Pumps; and,
- Ductless Mini-Split Heat Pumps.

The main offerings are described below.

Equipment	Criteria
Central AC Only	13 – 14.9 SEER with QI
ASHP Only	14 – 14.9 SEER with QI
Central AC & ASHP	15+ SEER/min 12.5 EER with QI
Central AC & ASHP	16+ SEER/min 13 EER with QI
GSHP	14.1 EER Closed Loop
Ductless Mini-Split Heat Pump	15.0 – 26.0 SEER, 9 – 12 HSPF

To be eligible for the AC and ASHP program incentives, customers must use a participating contractor for the installation. Participating installation companies have at least one installer who has taken and passed an online QI assessment. The Company also accepts, but does not require, North American Technician's Excellence (NATE) certification to become a participating contractor. A list of participating contractors is available to customers from the Company. GSHP and Ductless Mini-Split Heat Pump incentives are eligible to customers using any contractor.

Program Changes
None.

Budget and Goal Considerations
The budget for the Residential Cooling program was developed based on historical costs per participant and estimated according to expected participation. Taking into consideration the economic state of the market, the program goals reflect steady participation.

The main budget drivers include the following:

- Administration – This category funds administration labor, materials, postage and rebate processing labor, and measure and verification.

- Promotion – The program utilizes low-cost promotions including bill onserts, email marketing, direct mail marketing, social media, blogs, and Trade Partner outreach.
- Participant Incentives – These category funds customer rebates for qualifying products.

Involvement of Community Energy Organizations
The Residential Cooling program works closely with the Minnesota Heating and Cooling Association and the Minnesota Building Performance Organization to align best practices and to help communicate and educate the trade about our programs. Additionally, Xcel Energy is a member of ACCA and the Heating, Air-conditioning and Refrigeration Distributors International (HARDI), both national organizations.

Residential Heating (Heating System Rebate)

Description
The Residential Heating program offers prescriptive electric and natural gas rebates to the Company's natural gas customers that install new high-efficiency furnaces and hot water boilers. The program is designed to encourage customers to choose high-efficiency heating equipment through a tiered rebate schedule.

The program is marketed primarily to homeowners via various forms of mass media messaging and an extensive trade ally network that serves as in-home spokespeople for the program while selling new equipment. This program is also cross-marketed with the Insulation Rebate and Water Heating Rebate programs.

The program's offerings include prescriptive rebates for the following:

- Natural gas forced-air furnaces; and,
  - Add-on replacement and new construction.
- Natural gas hot-water boilers
  - Add-on replacement and new construction.

The Company's residential natural gas customers that install natural gas forced-air furnaces or hot water boilers are eligible to participate in this offering.

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budgets were determined by analyzing historical program trends as well as industry market forecasts.

The main budget drivers include the following:

- Participant Incentives – Rebates represent the largest portion of the budget. The rebate schedule was developed to encourage participation and differentiate between efficiency levels. There is a marked increase in budget from previous years due to the tiered rebate schedule that should increase participation at the higher efficiency levels, which results in greater savings per unit.
- Administration – Labor charges are predominantly represented by product management and rebate processing.
- Advertising and Promotion – Advertising is generally covered via cross promotion among other programs. Promotional spending includes: event promotion, community outreach, and HVAC dealer trade shows as well as other ad-hoc opportunities.

Involvement of Community Energy Organizations
We collaborate with the Minnesota Heating & Cooling Association and HVAC distributors to help advance the program.

School Education Kits

Description
The School Education Kits program offers a multi-component kit that combines classroom activities and in-home projects to fifth or sixth grade students and their parents to teach them about energy and water conservation. The program targets schools within the Company's Minnesota service territory that receive both electric and natural gas service and to those teachers and students who enroll in the program through third-party implementers.

The program's main offering is the Take Action Kit, which includes the following components:

- Natural Resources Fact Chart;
- Digital water/air thermometer;
- FilterTone alarm;
- Energy efficiency showerhead (1.5 GPM);
- Kitchen aerator (1.5 GPM);
- Bathroom aerator (1.0 GPM);
- Teflon tape;
- Two 9-Watt LED light bulb;
- Two 11-Watt LED light;
- Flow rate test bag;
- LED night light;
- Parent comment card; and,
- Think, Talk, Take Action! Wristband.

This prescriptive program provides direct impact savings, helps to build awareness of energy conservation at a young age, and provides energy and water savings to customers of various income levels. Traditional marketing tactics are not needed since schools are selected to ensure maximum outreach. Once schools are selected and enrolled, a third-party implementer recruits and trains the teachers, provides all materials, distributes the kits, and continues ongoing support if the teachers have questions while implementing the program. Classroom support is available via fax, phone, email and a toll-free 800 number.

Teachers can enroll through a variety of channels. If teacher response is insufficient, the third-party provider implements contingencies for additional outreach. Upon enrollment, teachers dictate to the third-party when in the school year they would like to use the program materials and provide accurate enrollment numbers. The third-party staff remains in contact with teachers throughout the school year to assist teachers as needed, as well as to ensure return of the surveys that provide Measurement and Verification results. It can take up to three months to receive the results from each elementary school depending on when the teachers begin the activity.

Program Changes
In 2020, the Company will partner with CenterPoint Energy to offer kits to customers in our shared service territories for each utilities respective fuel type. This change will expand the number of electric measures congruent with the number of kits provided. The 2020 electric savings, participation, and budget goals for School Education Kits have all been updated to reflect this

change. It is important to note that the measures being added to reflect the partnership with CenterPoint Energy are measures already offered by the Company. As such, while updated forecasts have been provided for these measures, there are no new updates to the 2019 approved energy and demand savings calculation methodologies indicated in the Deemed Savings Technical Assumptions for this program.

Budget and Goal Considerations

The program's participation, electric and natural gas energy savings goals, and budgets were estimated using historical program results and proposed third-party costs. The main budget drivers include the following:

- Administration – This funds the program's internal labor and external fulfillment by our third-party implementer, which includes: project planning, turn-key coordination, implementation, marketing, tracking of installations/surveys, call center and online help centers, measurement and verification of the program, and enrollment/reporting.
- Participant Incentives – This category covers the costs of the kit contents.

Involvement of Community Energy Organizations

The program team works with the Company's Community Affairs department, Account Management group, and local community non-profits to identify participating schools. We also look for additional opportunities when available for cross promotion, outreach, or cost sharing.

Water Heater Rebate

Description
The Water Heater Rebate program offers prescriptive rebates to customers that purchase and install qualifying high efficiency electric or natural gas water heating equipment for residential use. Customers may choose to self-install units rather than working with a plumber.

We intend to market the program using a variety of communication tools, including: HVAC trade partner communication, email newsletters, tradeshows, and point-of-purchase materials at retailers. The program is cross-promoted with the Company's other residential heating-related programs.

The program's main offerings include the following:

Equipment	Criteria
Natural Gas Storage Tank Water Heater	0.69+ UEF, High Draw
Natural Gas Storage Tank Water Heater	.64+ UEF, Medium Draw
Natural Gas Tankless Water Heater	.87+ UEF, High or Medium Draw
Electric Heat Pump Water Heater	N/A
Electric Heat Pump Water Heater (Grid-Enabled)	CTA 2045 compatible

Customers must receive natural gas service from the Company to receive a rebate for a natural gas water heater and must receive electric service from the Company to receive a rebate for an electric heat pump water heater. The program is applicable only for the purchase of qualifying, new natural gas tank water heaters, tankless natural gas water heaters, or electric heat pump water heaters installed in new or replacement applications. Grid-enabled heat pump water heaters – those manufactured with a CTA 2045 port on the tank (or which are compatible with an adapter with a CTA 2045 port) receive an additional rebate. Units with tanks larger than 55 gallons are not eligible. While most standard tank water heaters do not pass the cost-benefit tests, they are included as a part of the Water Heater Rebate program to spur customer demand for high efficiency equipment in the marketplace and to satisfy customer choice. For customers using electric water heating, there had not recently been a cost-effective technology for customers to improve their water heater efficiency beyond that of a baseline efficiency level (electric resistance water heating). Heat pump water heaters have emerged as a cost-effective and energy efficient electric technology for this program.

Program Changes
In 2020, the program will add heat pump water heaters as a cost-effective energy savings measure option for customers using electric water heating.

Budget and Goal Considerations
The program's participation and savings goals were developed based on historical program performance. The budget was determined based on the costs needed to rebate the expected number of eligible units and the appropriate rebate amounts per efficiency level.

The main budget drivers include the following:

- Administration – This category represents internal labor for project planning and implementation, as well as external contract labor, materials, and postage.

- Advertising and Promotion – This program is promoted via trade partner communication, email newsletters, tradeshows, and point-of-purchase materials.
- Participant Incentives – The majority of the budget goes to pay customer rebates.

Involvement of Community Energy Organizations
Xcel Energy is an active member in the Consortium for Energy Efficiency's Coalition of ENERGY STAR Water Heaters. The Company is committed to assisting this group's mission of inspiring changes in the market through the promotion of energy efficient technologies.

Whole Home Efficiency

Description
The Whole Home Efficiency program offers prescriptive electric and gas rebates to residential customers who take a whole-house approach to improving the energy efficiency of their existing, single-family homes. The program offers customers personal assistance from beginning to end of their projects, direct contractor resources, rebates to reduce the project cost, direct install options, and independent verification of the improvements after completion.

Customers must be both electric and natural gas customers of Xcel Energy to participate. An energy audit through Xcel Energy or by a company-approved contractor must precede the project and must include a blower door test. The program is marketed primarily through the Company's Home Energy Audit program and secondarily through the trades, with the objective of helping customers find and prioritize energy efficiency improvements in their homes.

The program's main offerings include prescriptive rebates for:

- Air leakage reduction;
- Attic and wall insulation;
- Boilers and furnaces;
- Central air conditioners and ductless mini-split heat pumps;
- Clothes washers;
- Programmable thermostats;
- Refrigerators; and,
- Water heaters.

The program also offers direct install for:

- LEDs;
- Energy efficient showerheads;
- Faucet aerators; and,
- Water heater blankets.

To receive rebates, customers are required to install either attic insulation or comprehensive wall insulation, defined as at least 75 percent of the exterior walls of the home. Customers then need to select two other improvements, not including the direct install options. The customer can receive rebates for a whole-house project within one year of signing up for the program. All improvements are verified by the auditor doing the final inspection. Customers must use company-approved contractors, and those contractors receive training about the program and its required processes. Customers also have the opportunity to have some measures directly installed as part of the final project inspection. We see this as a way to add value for the customer and take advantage of the inspector's presence in the home. Integrating these measures that also exist in other programs provides a more comprehensive whole-house approach, and also decreases customer confusion and frustration with program overlap and eligibility.

Program Changes

Change	Rationale
Add heat pump electric water heater incentives	To match the water heater technologies offered prescriptive Water Heater Rebate program

Budget and Goal Considerations

The program's budgets and electric and gas energy savings goals were determined using cost and savings estimates based on discussions with vendor and by historical program performance. Changes to the budget reflect anticipated participation with the newly added water heater measures.

The main budget drivers include the following:

- Administration – This category covers program planning and implementation as well as program management.
- Advertising and Promotion – The program is marketed through advertising and support materials, including brochures and welcome kits.
- Participant Incentives – This category covers rebates and costs for direct install measures.
- Measurement and Verification – The program funds a third-party to inspect 100 percent of projects completion and to do the exit blower door test.

Involvement of Community Energy Organizations

Some projects completed through Whole Home Efficiency go to community redevelopment funds.

Residential Demand Response

Description
The Company offers multiple demand response products through its Residential Demand Response program: Saver's Switch®, AC Rewards, and Smart Thermostat Optimization. Each product uses different strategies to target a reduction in system load during demand peaks.

Saver's Switch for Residential Customers
The Saver's Switch product gives participating customers bill discounts in exchange for allowing the Company to reduce their air conditioning and, if applicable, water heater usage on days of peak system demand. During a control event (typically a hot, humid day or evening), air conditioners are cycled on and off in a manner designed to reduce energy and demand. Enrolled electric water heater load is shed entirely for the duration of the control event, which can occur at any time of year. Air conditioners and water heaters are controlled via a radio operated switch installed by a licensed electrician on or near the customer's central air conditioning unit. Participants in the air conditioning program have the option of enrolling a qualifying electric water heater. The program's main offerings include the following:

- Participating air conditioning customers receive a 15 percent discount off the electric energy charges on their bills between June and September; and
- Water heater participants receive 2 percent off the same charges year-round.

Saver's Switch has operated in Minnesota since 1990. Many of the switches installed early in the program are now beyond their estimated 15-year useful life. In this Extension Plan, we intend to continue to use the Virtual Visit tool to identify switches that need to be replaced, switches identified as needing to be replaced will be on an ongoing basis. We also plan to proactively replace switches more than 15 years old.

AC Rewards
AC Rewards, which launched in 2017, also seeks to reduce energy and demand through a reduction in air conditioning load, but through thermostat adjustment instead of switch-based air conditioner control. Participants can receive up-front rebates for enrolling a qualifying thermostat, and receive annual bill credits, in exchange for allowing the Company to temporarily adjust the set point on the thermostat during control events. Currently, certain thermostats from Honeywell and Ecobee are eligible for enrollment.

AC Rewards participants retain the ability to override individual control events, except in the case of a system emergency. The Company can remove the participants that are deemed to overriding too many events.

Smart Thermostat Optimization

The Smart Thermostat Optimization product offers retrofit and new device rebate incentives to residential customers who purchase and install ENERGY STAR® connected thermostats. This strategy contributes to the Residential Demand Response program by increasing the number of thermostats that are eligible for AC Rewards in the Company's service territory and by reducing heating and cooling energy use throughout the year. Even if customers with ENERGY STAR®

connected thermostats do not choose immediately to enroll in AC Rewards, they will be able to do so at any time during the entire lifetime of their smart thermostats.

Thermostats meeting the ENERGY STAR® Connected Thermostat specification have demonstrated the ability to achieve energy savings through HVAC equipment runtime reductions, specifically an 8 percent or higher reduction in heating equipment runtime and a 10 percent or higher reduction for cooling equipment runtime.

Program Changes

The Company is updating the Residential Demand Response offering in this Extension Plan to include:

- Smart Thermostat Optimization: Adding the measures from the standalone Thermostat Optimization product into the Residential Demand Response program. For 2019 this product had been approved as a standalone program; for 2020 all measures will be moved back into Residential Demand Response and the standalone program discontinued. Goals for the standalone Thermostat Optimization program are set at 0 for 2020. Participation goals have also been revised and updated and measures expanded to provide more granular forecasts and information by channel options (e.g., direct installation and bring your own thermostat (BYOT)).
- AC Rewards: Looking over data from the launch in 2017 to present, participation has not tracked as previously thought; goals have taken this into account with adjusting expected participation and kW impacts for these measures. Plans include continuing to proactively engage with marketing efforts and to add qualifying thermostat providers and channels. Additionally, we aim to expand the lineup of eligible devices for AC Rewards beyond the current Honeywell and Ecobee offerings.
- Residential Saver's Switch: In 2020 we anticipate expanding the water heater option to include cellular operated controllers, and have added three measures to reflect this technological trend. While this is a different control technology from the radio operated switches that have been deployed in past years. The water heater controls themselves are unchanged; they are controlled identically to all other participating water heaters.

Change	**Rationale**
Expanded the existing 2019 Smart Thermostat Optimization measure "Install Energy Star certified smart thermostat – AC & ELEC HEAT" into three channels below for electric technical assumptions:	
• Direct Install Smart Thermostat EE - AC & Electric Heating	Optimizing thermostat product to capture energy efficiency savings
• BYOT EE - AC & Gas Heating - Electric Only Customers	Optimizing thermostat product to capture energy efficiency savings
• BYOT EE - AC & Electric Heating	Optimizing thermostat product to capture energy efficiency savings

Expanded the existing 2019 Smart Thermostat Optimization measure "Install Energy Star certified smart thermostat – AC & Gas" into channels below for gas and electric technical assumptions	
• Direct Install Smart Thermostat EE - Gas Heating Gas Only Customer	Optimizing thermostat product to capture energy efficiency savings
• Direct Install Smart Thermostat EE – AC & Gas Heating – Electric only & Combo	Optimizing thermostat product to capture energy efficiency
• BYOT EE – AC & Gas Heating - Combo Customer	Optimizing thermostat product to capture energy efficiency savings
• BYOT EE – AC & Gas Heating – Gas Heating Combo Customer	Optimizing thermostat product to capture energy efficiency savings
Expanded the existing 2019 Smart Thermostat Optimization measure "Install Energy Star certified smart thermostat – Gas Only" into channels below for gas technical assumptions	
• Direct Install Smart Thermostat EE – Gas Heating Gas Only Customer	Optimizing thermostat product to capture energy efficiency savings
• BYOT EE - Gas Heating Gas Only Customer	Optimizing thermostat product to capture energy efficiency savings
Adding DR Heat Pump Water Heater	Saver's Switch measure for CTA-2045 enabled heat pump water heaters – new technology
Adding DR Grid-Enabled Electric Resistance Water Heater	Saver's Switch measure for CTA-2045 enabled electric resistance water heaters – new technology
Adding DR Grid-Enabled Electric Resistance Water Heater – Retrofit	Saver's Switch measure for existing water heaters that can be retrofitted in order to become CTA-2045 enabled – new technology

Budget and Goal Considerations

The main budget drivers include the following:

- Administration – This budget category will cover the costs of internal labor for program planning and implementation, as well as the costs of external contract labor and software maintenance.
- Customer Services – The program uses third-parties to install the switches and thermostats that require professional installation ("direct installation channel")
- Advertising and Promotion – The Saver's Switch program will have a limited promotional budget in this Plan, as most of the installations will be from the replacement of old switches The thermostat products includes marketing efforts as providers, channels, and devices are expanded.
- Measurement and Verification – The program hires a third-party consultant to conduct measurement and verification to determine the savings per switch achieved each year.

Involvement of Community Energy Organizations

Products under the Residential Demand Response program were discussed as one of the several options during demand response stakeholder engagement meetings as part of the Company's resource planning process. More information on this process and stakeholder involvement can be found in Docket No. E002/RP-19-368.

Consumer Education

Description
The Consumer Education program is an indirect-impact program that provides residential customers with the information and resources to reduce their energy use. As the Residential Segment is diverse, Xcel Energy uses a variety of different approaches to educate consumers on energy efficiency.

The program's main offerings include the following:

- Annual community, sports, conservation events, and local community event outreach with energy efficiency messages;
- Sponsorship of seminars and conferences supporting residential energy efficiency and conservation.
- Publication of reference materials; and,
- Social media.

The program focuses on renewing existing partnerships and establishing new partnerships with an enhanced focus on digital communication. In addition, the program employs social media strategies to drive active engagement in energy efficiency through Facebook, Twitter and other digital channels. By continuing to diversify the communication channels, the program increases the residential customer knowledge base and provides a greater variety of resource options and services.

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were developed through identification of customer growth patterns, costs to produce materials, the reach of promotions, and sponsorship costs. Participants are established through targeted outreach to customer segments and use of multiple channels for delivery of energy efficiency messaging.

The main budget drivers include the following:

- Administration – This category represents the internal labor needed for program planning and implementation.
- Promotion – Promotional events, sponsorships, and outreach activation costs are the primary budget driver for this program.

Involvement of Community Energy Organizations
None.

Home Energy Audit

Description
The Home Energy Audit program offers substantially discounted energy auditing services to residential customers in single-family homes. The purpose of this program is to improve energy savings by influencing homeowner and renter behaviors through conservation education. This program is marketed through seasonal advertising and bill inserts as increases in monthly energy bills tend to drive program activity. We take advantage of local "green event" opportunities and direct mail campaigns as needed.

The program's main offerings include the following two tiers of audits:

- Home Walkthrough ($30); and,
- Standard Audit with Infrared ($60).

The main offerings are described below.

Home Walkthrough Audits
The Home Walkthrough begins with the auditor's review and analysis of the customer's billing history and a discussion surrounding any concerns or questions that the customer may have regarding home energy usage and related comfort. The auditor performs an assessment of the interior and exterior of the home and provides a review of the top recommendations to the homeowner. This option is free to income-qualifying customers. An electronic personalized audit report is emailed to the customer highlighting the top recommendations and providing rebate program information.

Standard Audit with Infrared
The Standard Audit with infrared includes all Home Walkthrough audit components, as well as a blower door test and a combustion appliance zone (CAZ) test. The blower door test is conducted in every home and the CAZ test is performed only if atmospherically vented appliances are present. The audit also includes an infrared scan to evaluate internal structures such as drywall and insulation and to determine temperature differences where insulation is present, missing, or not working effectively. In order for the infrared scan to be effective there needs to be a certain differential between the indoor and outdoor air temperatures. The infrared scan is offered when applicable.

Customers may get a Home Walkthrough audit every three years, or upgrade to a more extensive audit more frequently. The charges to the customer are assessed on bills after the audit is completed.

Program Changes
None.

Budget and Goal Considerations
The program's participation and budgets were determined by historical program participation targets and expenses.

The main budget drivers include the following:

- Administration – The budget includes the costs of internal labor and external contract labor to support the program. This also includes the costs of the third-party auditors, as well as the payments made by customers for their audits.
- Advertising and Promotion – The program includes a modest promotional budget to steer customers to the audits.

Involvement of Community Energy Organizations
The Company contracts with a third party to implement the Home Energy program. The implementer is responsible for program promotion, audit scheduling, auditor recruiting and subcontracting, paperwork administration and program tracking.

Residential Lamp Recycling

Description
The Residential Lamp Recycling program encourages electric customers in Minnesota to recycle their spent fluorescent bulbs to ensure that hazardous materials such as mercury do not enter the environment.

The program's main offerings include the following:

- Free compact fluorescent light (CFL) bulb recycling at participating local hardware stores and partnering county hazardous waste facilities; and,
- Coupons for 50¢ off the recycling fee for each fluorescent tube and HID bulb at participating hardware stores. The coupons are available at participating hardware stores and Company's website.

The Residential Lamp Recycling program is marketed primarily through the Company's website, Home Lighting program promotions, and participating hardware stores. A search feature allows customers to search by zip code to find the nearest recycling locations.

The Company follows the requirements of Minn. Stat. 216B.241, subd 5, which necessitates public utilities to notify customers that fluorescent recycling is the law. Every Residential Lamp Recycling and Home Lighting promotional piece includes a disclaimer regarding the statute, such as, "Fluorescent lamps contain small amounts of mercury that are harmful to the environment. In Minnesota, it is illegal to dispose of spent mercury bulbs in household trash receptacles."

Program Changes
None.

Budget and Goal Considerations
The budget was developed based on historical spending and the expected number of bulbs to be recycled in the coming years. The main budget drivers include the following:

- Administration – This provides funds for internal labor for planning and program implementation.
- Promotion and Advertising – We market this program with the Home Lighting promotions.

Involvement of Community Energy Organizations
None.

Low-Income Segment

Description
The goal of the Low-Income Segment is to educate income-eligible customers about their energy usage and how to reduce their monthly utility bills. To address this customer group, which primarily resides in single- and multi-family rental homes, the Company provides materials and assistance to help ease the energy-cost burden, making permanent changes in low-income residences that help improve comfort and lower costs.

Programs
The Low-Income Segment will continue to offer three programs in 2020: Home Energy Savings (HESP), Low-Income Home Energy Squad, and Multi-Family Energy Savings (MESP). The programs offer analyses of both gas and electric consumption to income-qualified customers and provide them with products and services that assist in lowering their monthly energy bills. Through HESP, customers may also be eligible for replacement of appliances based on the condition of the existing units identified during the analysis phase. MESP offers electric home energy efficiency measures and educational information to apartment dwellers. Third-party program implementers will deliver all three programs' operations.

Overall Goals
Most of the energy savings within the Segment will come from energy efficient lighting, insulation, and appliances. The table below provides a breakdown of the Segment participation, budget and savings goals in relation to our total CIP portfolio.

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Low-Income	5,783	$2,490,344	374	3,259,191	2,054	$1,901,318	14,697
Total CIP Portfolio	1,397,081	$102,371,401	116,706	454,160,800	632,668	$18,730,192	786,334

Market Analysis
The interest in and need for low-income energy efficiency services continues, and we anticipate customers struggling to pay their monthly bills. This segment plays a vital role by providing programs and services to help lower energy bills and improve the comfort of low-income homes.

Marketing/Advertising/Promotion
We seek to economize promotional and advertising spends as we strive to build awareness of our low-income offerings as participating community agencies manage enrollment. In this Extension Plan, the low-income programs will be marketed through a variety of activities including neighborhood community events, workshops, and partnerships with local non-profits.

Overall Policies
To participate in the Low-Income Segment programs, customers must have incomes that fall below 50 percent of the State Median Income guidelines or below 200 percent of Federal Poverty levels, whichever income level is greater. The Segment does not have additional unique policies. Each program will enforce its participation and equipment eligibility rules and requirements.

Stakeholder Involvement

The Low-Income Segment programs will continue to be delivered through third party vendors. We also work with a variety of community outreach groups such as local food shelves and other organizations providing services to low income residents.

Home Energy Savings

Description
The Home Energy Savings program (HESP) offers free home energy education and improvement services to income-qualifying customers. Participating customers receive a home visit and energy bill analysis to inform them about the benefits of energy conservation. Based on the findings in the home visit, we determine the customer's eligibility for other offerings, including home weatherization and appliance replacements.

To qualify for participation in HESP, Xcel Energy customers must:

- Have a household income that is at 50 percent of the State Median Income guidelines or at 200 percent of the federal poverty level, whichever is greater; and
- Properties with two to four housing units, at least 50 percent of the households must have incomes below 50 percent of the State Median Income guidelines or 200 percent of the federal poverty level, whichever is greater.
- Rental properties must agree to maintain affordable rent in order to receive benefits from this program.

The program is implemented through third-party providers who are responsible for customer recruitment, enrollment, income eligibility confirmation, subcontractor management, program forecasting, tracking, and reporting. The program is promoted by the Company through advertising and promotion efforts including out-of-home, direct mail, radio, and online. It is also supported with efforts by our Customer Care and Low-Income Assistance departments.

The program's main offerings include the following:

- Free electric home services, including:
    - Home energy educational visits;
    - Installation of LED bulbs;
    - Refrigerator replacements and recycling;
    - Freezer replacements and recycling;
    - Window/wall AC replacements and recycling;
    - Electronically commutated motors installed in new furnaces; and,
    - Attic insulation for electrically heated homes.
- Free natural gas home services including:
    - Attic insulation and air-sealing;
    - Wall insulation;
    - Furnace or boiler replacement; and,
    - Water heater replacement.

The main offerings are described in further detail below.

<u>Electric Home Services</u>
The home energy educational visits are available to all income-qualified customers in the Company's electric service territory and may be provided during a Low-Income Home Energy Squad visit. These visits include:

- Analysis of the electric bill;

- Home energy assessment and education;
- Installation of LED bulbs;
- Inspection and evaluation of major appliances;
- Written energy savings recommendations; and,
- Distribution of energy conservation educational materials.

Appliance replacements are available to those customers whose appliances meet the following criteria:

- Customer must own the appliance or provide a signed waver to allow replacement and recycling of the old inefficient appliance;
- Appliance must be used on a regular basis;
- Appliance must be in working condition;
- Refrigerators must be the primary unit in the home unless the customer agrees to recycle a second working appliance as well; and,
- Window/wall AC units may have a maximum EER rating of 8.5.

Evaluation and installation of electric weatherization services is also available in electrically-heated homes.

Natural Gas Home Services

These services are available to all income-qualified customers in the Company's natural gas service territory:

- Standard energy audit including blower door testing;
- Detailed specifications for all weatherization measures;
- Insulation of attic and bypass sealing to an R-value of 44;
- Insulation of walls to an R-value of 14 or greater; and,
- Carbon monoxide detector installed with any weatherization job.

We provide funding for the replacement of old inefficient furnaces, boilers and water heaters with the following:

- Furnaces with a minimum AFUE of 92 percent;
- Boilers with a minimum AFUE of 84 percent; and
- Natural gas water heaters with an UEF of 0.68 or higher.

Program Changes

None.

Budget and Goal Considerations

The program's participation and energy savings goals and budgets were based on historical program data.

The main budget drivers include the following:

- Administration – Covers internal labor and expenses for program planning, promotion, implementation and vendor administration.
- Rebates - Covers the cost of the equipment/measures installed.

Involvement of Community Energy Organizations

The Company continuously works to build relationships with existing agencies, non-profit organizations, and communities throughout the state. These partnerships allow us to improve program awareness and increase program participation. We are also members of a national ACEEE working groups focused on energy efficiency for low income residents.

Low Income Home Energy Squad®

Description
The Low-Income Home Energy Squad program offers installation services to electric and gas customers who seek to improve their homes' comfort and lower their utility bills. The program is marketed to income-qualifying customers, directly installing a number of moderate-impact, low-cost measures for the Company's gas and electric customers. The program pays for the equipment and labor costs to install a number of appropriate, moderate, impact measures. The program helps to remove barriers for customers that make energy improvements.

The program's main offerings include the following:

- Electric measures, including:
  - LEDs.
- Heating and cooling measures, including:
  - Weather-stripping of external doors; and,
  - Programmable thermostat installation and programming, and setback of pre-existing programmable thermostats.
- Hot water measures including:
  - High efficiency showerheads and faucet aerators; and,
  - Temperature assessment and setback of water heater; and,
  - Water heater blanket
- Optional measures for customer purchase including:
  - Dehumidifiers, installation and recycling; and,
  - Smart thermostat; and,
  - Electronics timer.

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined by cost estimates based on vendor proposals, potential number of participants, and historical program expenses. The main budget drivers include the following:

- Administration – This budget funds program administration costs through third-party vendors, as well as third-party labor for the installation of energy efficient measures in customers' homes.
- Promotion and Advertising – This category covers print, interactive advertising, and event promotion.

Involvement with Community Energy Organizations
Xcel Energy partners with many communities and cities via its Partners In Energy initiative.

Multi-Family Energy Savings Program

Description
The Multi-Family Energy Savings program (MESP) offers free education and services to qualifying 5+ unit multi-family buildings. MESP provides electric services to income-qualifying renters and is designed to reach these tenants and support low-income housing through building-wide projects. The program offers information on additional energy saving actions the building residents can take beyond the program, and free in-unit energy upgrades, including LEDs and electric appliance replacements.

To qualify, multi-family buildings with five or more units in our electric territory must meet the following criteria: For properties with five or more units, at least 66 percent of the households must have incomes below 50 percent of the State Median Income (based on the August 2012 low income CIP guidance document from the Department of Commerce, Division of Energy Resources).The program is administered by a third-party implementer that can provide services throughout the Company's Minnesota electric service territory. The program is responsible for customer recruitment, enrollment, income eligibility confirmation, subcontractor management, program forecasting, tracking, and reporting. The program is promoted through outreach with multifamily stakeholders and associations. Minimal promotional activities have been necessary to date, but tactics that would be deployed if needed are direct mail campaigns and sales calls to qualifying buildings.

The program's main offering is free electric equipment and installations, including:

- LEDs;
- Refrigerator replacements and recycling;
- Freezer replacements and recycling;
- Window air conditioner (AC) replacements and recycling; and,
- Wall/sleeve AC replacements and recycling.

The main offerings are described in further detail below.

This offering provides tenant educational materials, building energy assessments, and in-unit LED installation to qualified buildings. In addition, appliance replacement and recycling is provided to those buildings/units where the appliances meet the following criteria:

- Appliance must be used on a regular basis;
- Appliance must be in working condition;
- Refrigerator must be the primary one used in the unit, unless customer agrees to recycle a second working appliance as well; and,
- Window/wall AC units must have an EER rating of 8.5 or less to be replaced.

Appliances that are replaced through this program continue to be the property of the original owner. For example, refrigerators owned by the building owner continue to be property of the building owner and AC units owned by the tenant continue to be property of the tenant.

Program Changes
None.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were based on historical program data.

The main budget drivers include the following:

- Administration – Covers internal labor and expenses for program planning, promotion, implementation and vendor administration.
- Rebates – Covers the cost of the equipment/measures installed.

Involvement of Community Energy Organizations
We are participating in the MN Multifamily Affordable Housing Energy Network, which consists of various community stakeholders and initiated by Fresh Energy, Minnesota Housing, National Resource Defense Council and the National Housing Trust. We are also members of two national ACEEE working groups focused on energy efficiency for low income residents and in multifamily properties.

Planning Segment

Description
The Planning Segment includes indirect-impact efforts that are not directly affiliated with a specific program. The overall purpose of the Planning Segment is to:

- Increase awareness and participation in our programs through CIP-specific advertising and promotional messages;
- Provide software and hardware tools and processes to make it easier for internal staff and customers to manage and participate in our programs;
- Provide strategic direction for Xcel Energy's DSM portfolio;
- Ensure CIP-related regulatory compliance;
- Guide the Company's internal policy issues related to CIP; and,
- Train the Company's Marketing & Sales staff for effective performance.

Programs
The Planning Segment includes Advertising & Promotion, Application Development and Maintenance, CIP Training, and Regulatory Affairs.

Overall Goals
The budgets for this Segment were developed based on historical costs and anticipated market increases for future costs. As an indirect-impact Segment, there are no savings goals associated with these efforts. Budget goals are provided in the table below:

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Planning	0	$8,151,775	0	0	0	$2,228,824	0

Market Analysis
Not applicable.

Marketing/Advertising/Promotion
Not applicable. See the description for Advertising and Promotion for additional details.

Overall Policies
Not applicable.

Stakeholder Involvement
Not applicable.

Advertising & Promotion

Description
The Advertising & Promotion budget drives awareness of electric and gas energy solutions options with broad appeal among all types of customers. The budget is allocated internally between residential and business segments to support their respective program objectives. Within the Company's CIP portfolio, the objective of the advertising and promotion strategy is to ensure that the Company's energy solutions are top-of-mind during customer energy and purchasing decisions, educate and encourage customers to consider the lifetime value rather than only initial costs of various energy options. We strive to inform and influence how customer attitudes and actions impact their energy use on an ongoing basis and encourage them to take energy actions for their homes and businesses. The budget's main offerings are described below:

Various media types help us reach customers at different stages of the efficiency decision-making process. Through these various media channels, the Company strives to:

- Build awareness via broadcast media;
- Capture attention through print and digital media, sponsorship, and events; and,
- Create engagement via interactive media and direct marketing.

Among our advertising and promotion strategies, we:

- Drive web visits for program information and educational content;
- Encourage engagement with our digital media and direct-marketing efforts;
- Maintain awareness, likeability and favorable opinion of our offerings;
- Create an emotional connection by appealing to individual needs and barriers;
- Sponsor cost-effective events and outreach; and,
- Maintain traditional outreach via marketing tactics that deliver the most cost-effective impact.

Program Changes
The increased budget included in this Extension Plan is necessary to help boost achievement expectations as the Company's lighting program savings begin to decrease and the Company strives to drive and sustain deeper energy savings across the portfolio. In aggregate, they compose 6.1% of the Company's requested 2020 electric DSM budget and 8.4% of the Company's requested 2020 natural gas DSM budget. These will give the Company necessary budget flexibility to create and begin the process of expanding our messages in the marketplace.

	Approved for 2019	Proposed for 2020 (Electric)	Approved for 2019	Proposed for 2020 (Gas)
Advertising & Promotion Budget	$3,300,000	$6,286,899	$808,360	$1,564,532

Budget and Goal Considerations
The budget was determined by using cost estimates from past projects, vendor proposals, current customer counts, current conservation advertising budgets, known costs for creating new campaigns, and other general industry pricing knowledge. As the Company continues to optimize

the marketing mix, the budget gives us the flexibility to choose the tactics and tools necessary to effectively promote customer solutions in balance with increasing costs.

The main budget drivers include the following:

- Administration – This category covers the internal labor necessary for advertising and promotion marketing campaigns.
- Advertising and Promotion – These funds are spent directly on the Company's advertising and promotion strategies to support individual programs and cross-marketing among programs.

Involvement of Community Energy Organizations

The Advertising & Promotion budget provides support to the Residential, Low-Income, and Business Segment programs that partner with non-profit agencies and community organizations.

Application Development and Maintenance

Description
The Application, Development, and Maintenance (ADM) budget supports the Company's extensive data and process management necessary to market, manage and deliver energy efficiency programs and report program achievement by utilizing several different computer systems that require regular maintenance and sometimes new functionality. In this Extension Plan, we intend to perform enhancements and updates to our current systems to maintain and improve the quality of our reporting. These changes are necessary to introduce additional reporting flexibility and efficiencies, improve back-office processes, and improve process management by injecting efficiencies into current operations.

As ADM is an internal Information Technology (IT) program to support the Company's software and maintenance data and reporting capabilities, it is not marketed externally or offer rebates to customers.

The Company's ADM work is performed by a combination of in-house software developers and system administrators, and contracted external resources. The budget represents software purchases and labor required to configure and integrate the software with existing systems and processes.

Program Changes
None.

Budget and Goal Considerations
Administration – The budgets were developed using historical trends for existing system maintenance work and by identifying project-specific funds for new system development work for the Company to ensure that as technology advances, the costs incurred also increase. The budget increase aims to keep our existing systems and processes at optimal levels of performance. All expenditures for the portfolio – including internal labor and software licenses – are covered by this budget.

Involvement of Community Energy Organizations
Not applicable.

CIP Training

Description
The CIP Training program allows the Company's internal staff within marketing, engineering, regulatory, operations and sales the opportunity for continued education. These education opportunities include learning more about energy efficient electric and natural gas equipment as well as new advances in technology and changes in the energy efficiency industry. These trainings are necessary to enhance the Company's knowledge base. The Company's staff may attend internal or external training sessions, conferences and seminars on various technologies, industry best practices, and energy efficiency and conservation topics. Continued education enables us to stay up-to-date on the latest technologies and trends in the energy efficiency industry to better serve our customers. The CIP training budget allows us to overcome future challenges and help us meet our conservation goals.

The CIP Training program is an internal program to support the Company's training efforts to keep staff aware of new technologies and transformations in the energy efficiency industry. This program is not marketed externally and does not offer rebates to customers.

Program Changes
None.

Budget and Goal Considerations
The program budget was developed by evaluating historical spending for staff to attend both internal and external conferences and seminars on energy efficiency education. The main budget drivers include the following:

Program Administration – This budget covers the internal labor, materials and travel expenses for the Company's staff to attend internal and external conferences, seminars, and training sessions.

Involvement of Community Energy Organizations
Not applicable.

Regulatory Affairs

Description
Regulatory Affairs manages all of the Company's DSM regulatory filings, directs and prepares cost-benefit analyses, provides results of energy conservation achievements, manages electric and gas potential studies, and analyzes and prepares cost recovery reports. The group also provides procedures for effectively addressing requirements for the DSM regulatory process. These functions are needed to ensure a cohesive and high-quality DSM portfolio that meets legal requirements, as well as the expectations of our customers, regulators, and staff.

In addition, Regulatory Affairs supports the DSM component of resource planning, rate cases, and certificates of need, and provides strategic evaluation planning and internal policy guidance. These functions are needed to ensure the cost-effectiveness of DSM, to ensure the quality of DSM impact estimates, help generate ideas for future DSM projects, establish programmatic consistency, and manage DSM-related marketing information.

Budget and Goal Considerations
Program budgets were developed based on historical spending. Included in the Regulatory Affairs budgets are materials, administration, and outside consulting costs. Budgets have increased slightly to recognize we spent most, or exceeded, of what was budgeted in the Company's previous Triennial Plan.

The main budget drivers include the following:

- Administration – This budget category covers the internal labor and materials, software fees, and outside consulting and contracting necessary to deliver all DSM-related regulatory filings in Minnesota.

Program Changes
None.

Involvement of Community Energy Organizations
The Regulatory Affairs group works with third-party alternative filers, community organizations, and other interested parties as applicable. In addition, we regularly attend energy efficiency stakeholder meetings and assist with legislative policy.

Research, Evaluations, & Pilots Segment

Description
The Research, Evaluations, and Pilots Segment includes indirect research and development efforts that are not directly affiliated with a specific direct impact program. This Segment provides research, evaluation, and screening of new DSM products and concept testing.

Under this Segment, Market Research and Product Development:

- Evaluates achieved energy and demand savings;
- Quantifies the various levels of market potential for programs;
- Analyzes overall effects of Xcel Energy's CIP portfolio on customer usage and overall system peak demand and system energy usage;
- Develops new DSM programs;
- Researches, pilots, and monitors new conservation products to determine conservation opportunity;
- Provide overall informational support for DSM;
- Evaluate the processes and impacts of DSM Programs;
- Measure overall customer satisfaction with Xcel Energy's various DSM efforts;
- Provide segment and target market information; and,
- Examine in further depth the various assumptions used within program design and management.

Portions of this Segment are subject to the Research and Development spending cap of 10 percent of our minimum-spending requirement. For the most part, Market Research projects fall outside of Research & Development, except for market potential studies, as the information is not intended exclusively to assist in developing new programs and mainly addresses existing programs through efforts such as program evaluations. All of Product Development projects and costs are included within the R&D category and subject to the cap, except for pilot programs.

Programs
This Segment is comprised of the Market Research and Product Development teams.

Overall Goals
The budgets for Market Research and Product Development were based on past spending and adjusted for planned expenditures. Pilot projects may be proposed as either direct or indirect impact. Two pilots are included in this Extension Plan and savings related to these pilots are presented in the following table:

	Electric				Gas		
Segment	**Participation**	**Budget**	**Gen kW**	**Gen kWh**	**Participation**	**Budget**	**Dth**
Research, Evaluations, & Pilots	38,201	$3,751,148	1,577	7,052,207	13	$596,233	4,568

Market Analysis
Not applicable.

Marketing/Advertising/Promotion
Not applicable.

Overall Policies
Not applicable.

Stakeholder Involvement
We involve external parties (government, manufacturers, vendors, installers) in our product development process. We also seek the input of manufacturers, vendors, and installers as we build the technical assumptions for each product in order to test for cost effectiveness.

Energy Information Systems Pilot

Description
The Energy Information Systems (EIS) pilot offers custom electric and gas rebates and consulting services to customers that implement behavior change and low cost/no cost operational improvements. The pilot is primarily marketed to large commercial and industrial customers and currently has 17 participants.

The pilot's main offerings include the following:

- Consulting services to help a customer select an EIS solution;
- Consulting services to support the customer through process of installation, integration, and commission of the EIS;
- A 30 percent incentive towards the purchase and installation of the EIS;
- Consulting services to develop a baseline energy model and M&V plan for the facility;
- Measurement and verification of energy savings due to behavior change and low-cost/no cost operational improvements;
- Ongoing consulting services for a period of up to 36 months of participation; and,
- Custom rebates for energy savings due to behavior change and low-cost/no cost operational improvements.

EIS will use a three-phase approach to implement the process and capture deeper energy savings:

PHASE 1: Setup
Before the customer selects an EIS solution provider, the Company will work with the customer to identify the metering and communications needs, existing sources of data, and opportunities to improve data collection through new metering or data logging equipment for the site. At this time, the Company and the customer will establish a common understanding of goals for the metering solution as well as the definition for how efficiency for each building and system is characterized. The Company will help the customer select an EIS tool provider that meets their specific needs. The Company will pre-qualify EIS providers to ensure solutions will enable accurate and reliable M&V for the program. Once the system installation is verified and approved, the Company will pay an installation incentive to help cover the up-front cost of the EIS.

PHASE 2: Treatment
Once the EIS is operational it will take a period of time to sufficiently capture the data required to inform the identification of energy efficiency opportunities. These opportunities are expected to arise in a variety of behavioral, operational, and capital forms.

- Behavioral – with visibility and tighter management of energy performance metrics, occupants and end users are expected to be more engaged in reducing energy consumption
- Operational – low cost /no cost measures associated with tune-up of equipment or scheduling of equipment operating times
- Capital – expansion of controls systems or new/improved end-use equipment and systems

Frequent communication with the customer and thorough documentation throughout this phase will be required to ensure that new measures are discovered and implemented.

PHASE 3: Verification
On an annual basis, an analysis will be compiled that delineates savings achievements from each primary measure identified in Phase 2. Capital measures will be analyzed and incented though the Company's prescriptive and custom programs. Behavioral and low cost/no cost operational measures will be analyzed using a "top-down" method through the multi-variable regression modeling capabilities embedded in the EIS tool.

To ensure persistence of savings, the Company will follow appropriate monitoring guidelines and participants will be held to those requirements in return for eligibility toward incentives related to energy-efficiency activities pursued.

Along with identification of behavioral and low cost/no cost energy savings opportunities, the Company anticipates that EIS pilot will identify additional capital improvement opportunities that will be captured in other DSM products as well.

The customer's formal acknowledgement of planned participation in the pilot begins with the customer signing a Memorandum of Understanding (MOU) prior to beginning Phase 1. The Company views the signing of the MOU to formally establish a date of influence for all projects completed under the umbrella of the product.

Research questions the Company hopes to address with this pilot:

- How much will participants' electricity and natural gas use be reduced when an EIS is integrated into participants' strategic energy management (SEM) practices?
- Can an EIS enable efficiencies in the identification and verification of energy savings measures, and therefore reduce the total cost of program delivery to achieve these savings or achieve savings that otherwise would not occur?
- What types of measures do EIS typically assist in identifying, and does the additional information help drive increased measure implementation?
- Can EIS data enable the Company to identify, isolate and measure behavior-based energy savings measures?
- Are the measurement and verification methods to measure participants' savings robust and precise?

Program Changes
None.

Budget and Goal Considerations
The pilot's participation and energy savings goals and budget were determined from industry research which indicates that up to 20 percent energy savings is possible through the implementation of an EIS[1] In the projections for this pilot, the Company assumes 10 percent energy savings to be achieved over the course of five years of engagement relating to behavioral and low cost/no cost

[1] "Energy information systems (EIS): Technology costs, benefit, and best practice uses," Granderson, Lin, Piette, November 2013.

operational measure savings. The remaining 10 percent of expected savings are anticipated to come through capital measures and will be realized through the Company's prescriptive and custom programs.

The main budget drivers are from rebates and the consulting services provided directly to customers.

Involvement of Community Energy Organizations
None.

ENERGY STAR® Retail Products Platform Pilot

Description
The ENERGY STAR® Retail Products Platform program is intended to test a national, mid-stream incentive approach to driving transformation of the appliance and consumer electronics market. The program is part of an effort coordinated by the U.S. Environmental Protection Agency (EPA) to incentivize retailers to promote efficient products to drive increased market penetration of ENERGY STAR products. With EPA coordination, the program first launched as a pilot in 2016 and included participating utilities and energy efficiency program implementers from California, Oregon, Washington, Idaho, Montana, New York, Vermont, Wisconsin, Hawaii, and New Jersey.

The program engages retailers through midstream incentive payments to increase the demand and supply for the most energy efficient residential plug-load and appliance products on the market, driving greater sales of select ENERGY STAR-certified products to customers. With a combination of incentives and engagement, retailers will assort, stock, and promote more energy efficient models than they would have absent the program. The shift in product availability will generate energy savings as utility customers purchase and install these more efficient models in their homes.

The program's main offerings include the following:

- Retailer incentives for Energy Star certified:
    - Basic Air Conditioners;
    - Advanced Clothes Washers;
    - Advanced Refrigerators;
    - Basic and Advanced Freezers; and,
    - Advanced Electric Clothes Dryers.

Program Changes
In 2019, the Company removed sound Bars, Air Cleaners and Gas Dryers and reduced the incentives for most products to help improve the utility cost test score. The electric budget decreased to $226,321 in approved rebate spending due to eliminated measures and decreases in rebate levels and the gas budget was moved to $0 after July 1, 2019 with the removal of Gas Dryers. As part of this Extension Plan, we have included a full-year budget that reflects these approved mid-year 2019 changes.

Budget and Goal Considerations
The program's participation and energy savings goals and budget were determined by adjusting the projected participation levels, promotion, and administration expenses that were approved for mid-year 2019 to reflect the full year of 2020, similar to the budget changes mentioned above. The main budget drivers include the following:

- Retailer Incentives- The rebate budget reflects the current retailer incentive levels and projected customer participation, which was based on past participation and retailer sales history.
- Administration – This category reflects the costs to manage and verify the retailer sales data to ensure Energy Star qualified product sales are incented.

Involvement of Community Energy Organizations
None.

Measurement & Verification

This section documents our efforts to measure and verify direct-savings of electric and gas programs to ensure that reported savings are as accurate as possible while balancing measurement and verification (M&V) robustness against cost. M&V costs have been budgeted within each program's overall budget.

Prescriptive projects are subjected to realization rates, a calculated metric that compares verified savings with reported savings, then is applied to all reported program savings to come up with total program impacts. Custom projects all adhere to pre-established M&V policy and threshold under Docket Number E, G999/CIP-06-1591. For programs not specifically listed in this document, project M&V is not conducted due to budgetary or logistical constraints, but may be validated in periodic program evaluations.

- **Rebate Application Validation (All Programs)**

  Step 1: Applications are validated prior to data entry and sent back to the customer or account manager if any data is missing or incorrect.

  Step 2: Daily audit is conducted on all rebates after data entry but before rebate is issued. Errors are corrected and rebate is paid.

- **Measurement & Verification (General)**

  Verifies on an ongoing basis during performance year the gross energy and demand savings.
  - **Prescriptive programs** using deemed savings technical assumptions have random sample field inspections to verify that the measure is installed and operating and the key parameters of the technical assumption match the rebate.
  - **Custom programs** go through stages of engineering review of the savings calculations. Random samples are sent to an outside engineering firm for further review. Projects with savings greater than 1 GWh or 20,000 Dth are pre- and post-metered, as are some projects that are metered at engineering discretion to verify assumptions for new technologies or other variables.
  - **Exception programs** conduct M&V as it makes sense from a financial, accuracy, logistical and customer investment standpoint.

Prescriptive Process

For most of the programs, the verification 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 percent and 20 percent given a confidence level of 90 percent around the realization rate and is weighted to select larger projects. The number of randomly selected participants in the sample may increase or decrease during the year to ensure that the realization rate accuracy approximates the precision goals for the program. Sampling bias caused by poor response rates and deliberate exclusion of sample projects is reduced through a quality control process. Rebate forms notify all customers that their respective premises and measures are subject to verification inspections.

The realization rate is a calculated value that compares the verified savings with reported savings. The realization rate for a project is the ratio of the verified savings to the savings reported on the rebate application. The realization rate for the program as a whole is the ratio of the program's total verified savings to the total rebate reported savings. The program realization rate is applied to all program savings per fuel to determine program impacts.

The process is as follows:

Step 1: Customer submits rebate application and required documentation to the Company after measure is installed.

Step 2: Rebate Operations reviews all business and residential program rebate applications, supporting documentation, and vendor invoices. They check the customer information, equipment eligibility and proper rebate amounts. If information is missing or incorrect, the application is sent back to the account representative or customer to make changes.

Step 3: If project qualifies for rebate, Rebate Operations enters rebate application form data into the rebate tracking system and authorizes rebate payment. Prior to authorizing rebates, all applications are verified in a daily audit.

Step 4: On a monthly basis the third-party verification contractor (VC) pulls a list of all projects completed during the period.

Step 5: VC selects random samples, notifies the Company of the sample selections, and manages statistically valid sample process to achieve a 90% confidence level with 10% precision.

If it is not possible to achieve 90/10, a confidence and precision level of 90/20 is acceptable.

Step 6: VC contacts customer to schedule the inspection.

Step 7: VC visits site and verifies the savings factors and equipment information for that measure. VC also re-runs the rebate calculation worksheet for each project to ensure the inputs and outputs of the calculator are correct.

Step 8: VC documents discrepancies and submits report to the Company.

Step 9: Product management and technical staff evaluate the nature of the discrepancy and take appropriate follow-up actions.

Step 10: VC calculates realization rate for each project and cumulative year-to-date realization rate for each program.

Step 11: Corrective action such as communication of program requirements, changes to program rules or identification of intentional misuse of the programs are undertaken based on these audit results as necessary.

Applicable Prescriptive Programs

Including prescriptive projects of programs with prescriptive and custom components.

Business Programs

- Commercial Efficiency;
- Cooling Efficiency;
- Data Center Efficiency;
- Fluid System Optimization;
- Foodservice Equipment;
- Heating Efficiency;
- Lighting Efficiency;

- Motor Efficiency;
- Process Efficiency; and,
- Turn Key Services.

Residential Programs

- Residential Heating;
- Insulation Rebate;
- Low-Income Home Energy Savings;
- Multi-Family Energy Savings;
- Residential Cooling;
- Residential Demand Response (Smart Thermostat measures) and,
- Water Heating Rebate.

Programs and/or Components with Variation from Prescriptive Process

- **The Boiler Tune-Up and Tune-Up Plus** measures from the Heating Efficiency program do not have audits performed.
- **Business New Construction - Energy Efficient Buildings (EEB) component**, EEB differs from the prescriptive process in that preapproval is required prior to equipment install, invoices are not required, and all projects are field verified by the third party implementer.
- **Energy Feedback, Whole Home Efficiency, Home Energy Squad, Low-Income Home Energy Squad, Refrigerator Recycling**, **Multi-Family Building Efficiency,** the third-party implementers are responsible for ensuring verification of measures.
- For **Efficient New Home Construction**, 100 percent of homes are verified through the Residential Energy Services Network (RESNET) rating and quality assurance protocols.
- For **Home Lighting**, all retailers provide sales data on quantity and type of bulbs sold.
- Select programs utilize third-party program implementers or survey companies to complete follow-up surveys to a sample of the participants to confirm and track whether the equipment was installed. An installation rate is applied to the program's annual savings.
- For **School Education Kits**, participants conduct and submit surveys.
- For **Energy Efficient Showerhead** program, third-party implementer reports on quantity of showerheads distributed. The third-party survey company reports on installation rates.

<u>General Custom Process</u>

Project Identification

<u>Step 1:</u> Project identification and scoping.

<u>Step 2:</u> Customer submits preapproval application to the Company.

Preapproval

<u>Step 3:</u> An engineer (or outside engineering firm) reviews the application and calculates the energy and demand savings based on the technical assumptions specific to that measure and the resulting rebate.

<u>Step 4:</u> Xcel Energy engineers review the calculations, regardless of whether internal or external engineers completed Step 3.

Step 5: We select a random sample of committed projects and send this list to an outside engineering firm (if Xcel Energy engineer performed Step 3) to review the calculations.
Step 6: If the outside engineering firm disagrees with our engineer's analysis, they discuss the project and reach a consensus on the calculations.
Step 7: We send out a preapproval or rejection letter stating the preapproved demand and energy savings along with the rebate amount.

Monitoring

Step 8: If monitoring is needed, an Xcel Energy engineer drafts an M&V plan and sends a monitoring agreement for customer review and approval signature.
Step 9: If the customer does not have the appropriate meter structure, a third-party engineering firm installs metering equipment and collects the pre-data as set forth in the monitoring agreement.
Step 10: After the designated pre-monitoring period, the customer completes the project installation and contacts the account manager.
Step 11: The third-party engineering firm collects post-installation monitoring data and sends pre- and post-data to the Company.

Site Verification

Step 12: For managed accounts, the customer's account manager works with the customer to verify project installation and removal of old equipment, and obtain invoices or alternate cost documentation for submission to our DSM staff.

Approval and Rebate Payment

Step 13: For non-monitored projects, the invoices are reviewed and if the installed measure specifications match the proposed measure specifications, then the preapproved rebate is awarded. If project incremental costs changed by >10%, or the scopechanged, the project is reevaluated (return to Step 3).
Step 14: For monitored projects, an engineer (or third-party engineering firm) determines actual savings based on monitoring results.
Step 15: For monitored projects, if an Xcel Energy engineer completes the analysis, 100% of projects are sent to third-party engineering firm for review.
Step 16: If the third-party engineering firm disagrees with our engineer's analysis, they discuss the project and reach consensus on the calculations.
Step 17: For monitored projects, if the incremental cost and savings (customer Dth, customer kW savings, and customer kWh) vary by <= 10% of the preapproved estimated savings, the preapproved rebate is
paid and the monitored savings and actual costs are claimed.
A new analysis is conducted if the actual
savings vary by >10%. The rebate paid is based on actual savings, and we claim the post-monitored results.
Step 18: Project savings are reported in the year that the rebate is awarded.

Applicable Custom Programs

Including custom and behavioral projects of programs with these components.

- Commercial Efficiency;

- Cooling Efficiency;
- Custom Efficiency;
- Data Center Efficiency;
- Efficiency Controls;
- Fluid System Optimization;
- Heating Efficiency;
- Lighting Efficiency;
- Motor Efficiency;
- Process Efficiency; and
- Turn Key Services.

Exceptions

Programs with special design elements are verified using processes unique to the program. The M&V process for these products is described below.

Business New Construction – We contract with a third-party consultant to develop the energy efficiency recommendations and M&V. Field verification is performed to ensure that the strategies are installed per the design intent. The rebate is not paid until savings are verified.

The following process shows the steps taken throughout the EDA process to ensure proper installation and energy savings:

Step 1: Application submittal.
Step 2: Meetings take place with the customer and design team.
Step 3: Consultant completes energy modeling to identify conservation packages.
Step 4: Construction documents are reviewed for measures identified through the energy model. The design team and customer are notified whether these measures were found within these documents.(Enhanced Track only)
Step 5: The customer completes construction.
Step 6: Consultant visits site and verifies that specified measures were installed. Selected equipment and systems are monitored for a two week timeframe, as appropriate, to evaluate performance variables against modeling assumptions.
Step 7: For projects with individual measures that have savings greater than or equal to 1.0 GWh or 20,000 Dth per year, the individual measures must be considered "selected equipment" as defined in Step 6 above.
Step 8: The actual results are used to determine the final rebate.
Step 9: Rebate is issued to customer based on final savings.

Recommissioning, Heating System Optimization and Study Driven Program (general process)

The customer hires an engineering firm to conduct a study of the building to determine energy savings for each measure. An Xcel Energy engineer then reviews and verifies 100% of the identified opportunities for savings calculation accuracy prior to approving and paying a rebate for the study.

When opportunities are implemented, an Xcel Energy engineer verifies that the implemented measures match what was approved and edits any changes implemented that do not exactly match the approved study. For Recommissioning, the customer needs to notify us when this happens. For

other programs, the quantity/equipment detail on the invoices may be used.

Self-Direct Program
Qualifying customers submit M&V plans with their applications. M&V plans, which may include pre-installation monitoring, are reviewed and approved by an Xcel Energy engineer (or outside engineering firm).

Load Management
Electric Rate Savings
Customer participation and compliance is verified via the specialized meters deployed. This allows us to confirm the amount of load shed at each control event.

Residential Demand Response and Business Saver's Switch
The Residential Demand Response (Saver's Switch and AC Rewards) and Business Saver's Switch programs contract with a third-party to conduct annual load research on a sample of participant sites. This research measures the amount of load relief realized when a control is implemented.

In territories where the automated meter reading system is available, we are able to test residential Saver's Switches remotely to identify sites with failed switches. We anticipate continuing this process annually going forward to ensure a healthy switch population.

Market Research

Description
Market Research drives a variety of specific projects that are used to support effective design and implementation of DSM programs and services. This enhances understanding of current and potential customers, market segmentation, and engagement drivers. Additional research is conducted through procurement of third-party consultants who review primary and secondary data while purchased market research subscriptions offer energy efficiency and/or marketing resources that provide strategic information regarding customers, DSM products, and business direction for Xcel Energy DSM efforts. This research falls into four categories:

- Program Support Activities which primarily provide overall DSM informational support for several programs or segments;
- Program Evaluations which provide individual specific program process and / or impact studies;
- Program Assumptions Analysis which deeply examine the various assumptions used in program design, management, and assessment; and,
- Portfolio Potential Studies that survey existing and emerging energy consuming technologies in homes and businesses to project how the DSM portfolio will evolve in the future.

Although research needs may change during the course of the Plan, we plan the following market research activities in 2020:

- Program Support Activities
    - E Source membership provides unbiased, objective research and advisory services that help advance efficiency programs and improve the customer experience.
    - Purchased segmentation information provides specific demographic fields helpful in effectively identifying potential business and residential customers capable of benefiting from existing and planned DSM programs.
    - Home Use Study provides valuable information regarding saturation of various home appliances and technologies in residential homes.
    - Residential media research tracking the effectiveness and reach of DSM advertising efforts by asking customers reactions and recall of specific campaigns.
- Program Evaluations: Comprehensive evaluations are completed by independent third-party consultants for specific programs each year. Factors that are taken into consideration in determining the priority and schedule of program evaluations include, but are not limited to: program tenure in Minnesota, savings achieved per participant and relative to total goals, program expenditures compared to total budgets, uncertainty and/or risk associated with savings or technical assumptions, and availability of other studies regarding the particular measures. We plan to conduct the following evaluation activities in 2020:
    - Energy Efficient Showerheads evaluation
    - Home Lighting multi-state study examining market effects of lighting programs
    - A/C Rewards modified comprehensive evaluation
    - Continuation of Residential Cooling evaluation from 2019

Program Changes
The Company originally included a 2019 evaluation for Residential Heating in our 2017-2019 CIP Triennial Plan. However, based on the amount of potential for cooling-related measures identified in

the statewide potential study, the Company has shifted this evaluation to Residential Cooling and delayed the study by six months to survey customers and trade after the completion of the 2019 cooling season. This change does not affect or change the 2020 budget for this program.

Budget and Goal Considerations
The Market Research budget was developed based on historical project costs for similar research and/or studies of similar scope.

The main budget drivers include the following:

- Administration which covers the internal staff and external professional services needed for project planning and implementation.
- Measurement and Verification which provides funding for program evaluations.

Involvement of Community Energy Organizations
While it is not anticipated at this time based on the programs proposed for evaluation, the Company will engage previously-involved stakeholders to review evaluation plans where the evaluator identifies community-focused research objectives.

Product Development

Description
Product Development identifies, assesses, and develops new energy efficiency and demand response products and services for eventual inclusion as new programs, products, and measures as part of our Conservation Improvement Program. This work enables the Company to keep up-to-date and advance important new energy saving technologies for customers. The group also develops improvements to existing products.

The product development process begins with new ideas for energy conservation measures from customers, regulators, energy professionals, Company staff, and others. Before a new product is approved, the group researches new ideas, evaluates them for savings potential, screens, and, in certain cases, tests particular product ideas as we work through the development process.

During this Extension Plan, Product Development will continue to develop new products and expand existing products to help meet the Company's savings goals. Products or programs are selected for development based on several criteria including, but not limited to: energy efficiency potential, level of effort to development, longevity of the offering (i.e. how long until a product becomes the industry standard), market barriers, and risk (technological, market) among others.

Program Changes
None.

Budget and Goal Considerations
Product Development is an indirect-impact program and, therefore, generally does not set any participation or energy savings goals. In instances where Product Development develops pilots with savings goals, the Company seeks Department approval to claim direct-impact savings in those cases.

The program budgets were developed by reviewing historical program expenditures and estimating the time involved in completing future efforts. The main budget drivers include the following:

- Research and Development (R&D) – This category funds internal Product Development staff.
- Administration – Product Development contracts with external consultants to assist in project planning and implementation.

Involvement of Community Energy Organizations
Product Development collaborates with a number of local and national organizations, including:

- Minneapolis Sustainable Growth Coalition (MSGC): Product Development regularly works with MSGC to gain feedback on product prototypes from our commercial and industrial customers.
- Clean Energy Partners: Product Development is part of a partnership convened by Clean Energy Partners to implement several work plans that pilot products with our commercial and industrial customers.

- Zero-Energy District Accelerator: We are working through the accelerator to collaborate and support communities that are pursuing zero-energy districts, including: the National Western Center, River Mile, the Ford Community, and Rice Creek Commons.
- US Department of Energy (DOE): Product Development regularly works with DOE to increase awareness of emerging technologies, overcome barriers to emerging technology adoption, and to determine future research needs. Additionally, Product Development regularly supports research sponsored by DOE with in-kind time and resources.
- The National Renewable Energy Laboratory (NREL): Product Development regularly works with NREL to increase awareness of emerging technologies, overcome barriers to emerging technology adoption, and to determine future research needs.
- Center for Energy and Environment (CEE): Product Development regularly works with CEE to increase awareness of emerging technologies, overcome barriers to emerging technology adoption, and to determine future research needs. Additionally, Product Development supports research performed by CEE with in-kind time and resources.
- Consortium for Energy Efficiency: Product Development is part of a coalition of utilities in North America that work to accelerate consideration and adoption of emerging technologies into energy efficiency programs across the industry and into the market.
- Midwest Energy Efficiency Alliance: Product Development is part of a collaborative network advancing energy efficiency in the Midwest for sustainable economic development and environmental stewardship.
- Western Cooling Efficiency Center (WCEC) at UC Davis: Product Development is a sponsoring member of WCEC, which performs laboratory and field research on novel cooling technologies.
- Emerging Technologies Coordinating Council (ETCC): Product Development regularly works with the ETCC to increase awareness of emerging technologies and overcome barriers to emerging technology adoption.

Assessments

Description
The Assessments Segment accounts for monetary assessments from the Minnesota Department of Commerce, Division of Energy Security. Minn. Stat. § 216B.241, subd(s). 1d, e and f assess each utility a fee for technical assistance, applied research and development grants, and facility energy efficiency.

Program Changes
None.

Budget and Goal Considerations and Participation Development
Budgets for this Extension Plan are based on the direct and indirect assessment invoices received during the 2017-2019 CIP Triennial Plan period.

The main budget drivers include the following:

- Other – All regulatory assessments are budgeted to this category.

Involvement of Community Energy Organizations
None.

Electric Utility Infrastructure

Description
The Minnesota Next Generation Energy Act of 2007 ("Act") created the opportunity for an electric utility to claim savings from projects that improve the efficiency of the utility's infrastructure or system towards its electric savings goal, provided that the utility files a plan to achieve savings of at least one percent of retail sales through direct energy conservation programs. The Act also authorized a new rate schedule for recovery of electric utility infrastructure project costs, but does not require that a utility create a specific rate schedule in order to claim the related energy savings.

Electric utility infrastructure ("EUI") projects are defined in Minn. Stat. § 216B.1636 as electric utility-owned projects that:

1) Replace or modify existing electric utility infrastructure, including utility-owned buildings, if the replacement or modification is shown to conserve energy or use energy more efficiently, consistent with section 216B.241, subd. 1c; or,
2) Conserve energy or use energy more efficiently by using waste heat recovery converted into electricity as defined in section 216B.241, subd. 1, paragraph (n).

Minn. Stat. § 216B.241, subd. 1c, also clarifies that EUI projects "must result in increased energy efficiency greater than that which would have occurred through normal maintenance activity." Sample projects include distribution system improvements that reduce line losses and heat rate improvements that increase the efficiency of energy production, such as process optimization and equipment design modifications.

In addition to contributing towards our CIP goals, EUI projects typically have the following benefits:

- Direct energy consumption savings;
- Reduced maintenance costs;
- Extended equipment life; and,
- Better power plant performance.

The energy savings translate to less natural gas or coal that is needed to produce electricity, which reduces greenhouse gas emissions and fuel costs, thereby lowering the environmental impact and overall cost of generation.

Because we are expecting to meet the 1.5 percent goal through customer programs, EUI projects will likely play a minor role in this Extension Plan. However, savings from EUI projects may become increasingly important over time as the savings potential from traditional programs continues to decline.

Given the minor role expected for EUI in this Extension Plan and uncertainties in project funding and timing, we are not proposing specific savings goals or budgets for this Segment. Should we complete any EUI projects during the Plan, we will report the results in our annual CIP Status Report and will follow the Department's EUI policy guidance.

Program Changes
None.

Budget and Goal Considerations
As discussed earlier, we are not proposing any budgets or savings goals for this segment.

Involvement of Community Energy Organizations
In 2017, the Company and other stakeholders participated in the Department's EUI stakeholder process in order to better understand existing state policies concerning EUI, examine incentives/disincentives to improving EUI efficiency, and recommend policy changes or clarifications to leverage EUI efficiency to help meet Minnesota's efficiency goals.

ELECTRIC CIP TOTAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$57,971,500	$57,971,500	$57,971,500	$57,971,500
T & D	N/A	$36,407,102	$36,407,102	$36,407,102	$36,407,102
Marginal Energy	N/A	$135,903,923	$135,903,923	$135,903,923	$135,903,923
Environmental Externality	N/A	N/A	N/A	N/A	$48,092,370
Subtotal	N/A	$230,282,525	$230,282,525	$230,282,525	$278,374,895
Participant Benefits					
Bill Reduction - Electric	$360,563,203	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$38,550,214	N/A	N/A	$38,550,214	$38,550,214
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$43,459,050	N/A	N/A	$39,588,834	$39,588,834
Subtotal	$442,572,467	N/A	N/A	$78,139,048	$78,139,048
Total Benefits	$442,572,467	$230,282,525	$230,282,525	$308,421,573	$356,513,943
Costs					
Utility Project Costs					
Customer Services	N/A	$2,650,395	$2,650,395	$2,650,395	$2,650,395
Project Administration	N/A	$31,400,821	$31,400,821	$31,400,821	$31,400,821
Advertising & Promotion	N/A	$10,694,664	$10,694,664	$10,694,664	$10,694,664
Measurement & Verification	N/A	$1,398,800	$1,398,800	$1,398,800	$1,398,800
Rebates	N/A	$38,550,214	$38,550,214	$38,550,214	$38,550,214
Other	N/A	$1,740,895	$1,740,895	$1,740,895	$1,740,895
Subtotal	N/A	$86,435,790	$86,435,790	$86,435,790	$86,435,790
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$360,563,203	N/A	N/A
Subtotal	N/A	N/A	$360,563,203	N/A	N/A
Participant Costs					
Incremental Capital Costs	$104,192,714	N/A	N/A	$103,345,379	$103,345,379
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$104,192,714	N/A	N/A	$103,345,379	$103,345,379
Total Costs	$104,192,714	$86,435,790	$446,998,992	$189,781,168	$189,781,168
Net Benefit (Cost)	$338,379,753	$143,846,735	($216,716,468)	$118,640,405	$166,732,775
Benefit/Cost Ratio	4.25	2.66	0.52	1.63	1.88

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

2020 ELECTRIC GOAL

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	39.61%
Gross Load Factor at Customer	E	17.46%
Transmission Loss Factor (Energy)	F	7.268%
Transmission Loss Factor (Demand)	G	8.155%
Societal Net Benefit (Cost)	H	$677

Program Summary per Participant		
Gross kW Saved at Customer	I	0.18 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.08 kW
Gross Annual kWh Saved at Customer	(B x E x I)	270 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	291 kWh

Program Summary All Participants		
Total Participants	J	1,395,410
Total Budget	K	**$86,435,790**
Gross kW Saved at Customer	(J x I)	246,291 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**106,206 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	376,641,420 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**406,160,800 kWh**
Societal Net Benefits	(J x I x H)	**$166,732,775**

Utility Program Cost per kWh Lifetime	**$0.0169**
Utility Program Cost per kW at Gen	**$814**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Total Gas CIP With Indirect Participants**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$11,167,363
Incentive Costs =	$7,132,831
16) Total Utility Project Costs =	$18,300,194
17) Direct Participant Costs ($/Part.) =	$45
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$2
Escalation Rate =	2.16%
20) Project Life (Years) =	309.8
21) Avg. Dth/Part. Saved =	1.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	632,668
24) Total Annual Dth Saved =	786,334
25) Incentive/Participant =	$11.27

Cost Summary	**2020**
Utility Cost per Participant =	$28.93
Cost per Participant per Dth =	$59.50
Lifetime Energy Reduction (Dth)	243,576,656
Societal Cost per Dth	$0.14

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($30,615,313)	0.57
Utility Cost Test	$23,983,131	2.40
Societal Test	$37,569,638	2.06
Participant Test	$59,840,535	3.09

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Total Gas CIP Direct Participants Only**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$7,198,979
Incentive Costs =	$7,027,256
16) Total Utility Project Costs =	$14,226,235
17) Direct Participant Costs ($/Part.) =	$127
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$7
Escalation Rate =	2.16%
20) Project Life (Years) =	293.1
21) Avg. Dth/Part. Saved =	3.3
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	221,793
24) Total Annual Dth Saved =	738,814
25) Incentive/Participant =	$31.68

Cost Summary	**2020**
Utility Cost per Participant =	$64.14
Cost per Participant per Dth =	$57.31
Lifetime Energy Reduction (Dth)	216,534,574
Societal Cost per Dth	$0.15

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($26,688,709)	0.59
Utility Cost Test	$24,610,513	2.74
Societal Test	$37,253,778	2.16
Participant Test	$54,504,753	2.93

ELECTRIC CIP CONSERVATION TOTAL — 2020 ELECTRIC GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$57,971,500	$57,971,500	$57,971,500	$57,971,500
T & D	N/A	$36,407,102	$36,407,102	$36,407,102	$36,407,102
Marginal Energy	N/A	$135,903,923	$135,903,923	$135,903,923	$135,903,923
Environmental Externality	N/A	N/A	N/A	N/A	$48,092,370
Subtotal	N/A	$230,282,525	$230,282,525	$230,282,525	$278,374,895
Participant Benefits					
Bill Reduction - Electric	$360,563,203	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$38,550,214	N/A	N/A	$38,550,214	$38,550,214
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$43,459,050	N/A	N/A	$39,588,834	$39,588,834
Subtotal	$442,572,467	N/A	N/A	$78,139,048	$78,139,048
Total Benefits	$442,572,467	$230,282,525	$230,282,525	$308,421,573	$356,513,943
Costs					
Utility Project Costs					
Customer Services	N/A	$2,650,395	$2,650,395	$2,650,395	$2,650,395
Project Administration	N/A	$31,400,821	$31,400,821	$31,400,821	$31,400,821
Advertising & Promotion	N/A	$10,694,664	$10,694,664	$10,694,664	$10,694,664
Measurement & Verification	N/A	$1,398,800	$1,398,800	$1,398,800	$1,398,800
Rebates	N/A	$38,550,214	$38,550,214	$38,550,214	$38,550,214
Other	N/A	$1,740,895	$1,740,895	$1,740,895	$1,740,895
Subtotal	N/A	$86,435,790	$86,435,790	$86,435,790	$86,435,790
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$360,563,203	N/A	N/A
Subtotal	N/A	N/A	$360,563,203	N/A	N/A
Participant Costs					
Incremental Capital Costs	$104,192,714	N/A	N/A	$103,345,379	$103,345,379
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$104,192,714	N/A	N/A	$103,345,379	$103,345,379
Total Costs	$104,192,714	$86,435,790	$446,998,992	$189,781,168	$189,781,168
Net Benefit (Cost)	$338,379,753	$143,846,735	($216,716,468)	$118,640,405	$166,732,775
Benefit/Cost Ratio	4.25	2.66	0.52	1.63	1.88

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	39.61%
Gross Load Factor at Customer	E	17.46%
Transmission Loss Factor (Energy)	F	7.268%
Transmission Loss Factor (Demand)	G	8.155%
Societal Net Benefit (Cost)	H	$677

Program Summary per Participant

Gross kW Saved at Customer	I	0.18 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.08 kW
Gross Annual kWh Saved at Customer	(B x E x I)	270 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	291 kWh

Program Summary All Participants

Total Participants	J	1,395,410
Total Budget	K	**$86,435,790**
Gross kW Saved at Customer	(J x I)	246,291 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**106,206 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	376,641,420 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**406,160,800 kWh**
Societal Net Benefits	(J x I x H)	**$166,732,775**

Utility Program Cost per kWh Lifetime	**$0.0169**
Utility Program Cost per kW at Gen	**$814**

ELECTRIC CIP LOAD MANAGEMENT TOTAL — 2020 ELECTRIC GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$57,975,617	$57,975,617	$57,975,617	$57,975,617
T & D	N/A	$36,409,661	$36,409,661	$36,409,661	$36,409,661
Marginal Energy	N/A	$135,905,612	$135,905,612	$135,905,612	$135,905,612
Environmental Externality	N/A	N/A	N/A	N/A	$48,092,981
Subtotal	N/A	$230,290,890	$230,290,890	$230,290,890	$278,383,871
Participant Benefits					
Bill Reduction - Electric	$360,568,729	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$38,570,476	N/A	N/A	$38,570,476	$38,570,476
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$43,459,050	N/A	N/A	$39,588,834	$39,588,834
Subtotal	$442,598,256	N/A	N/A	$78,159,310	$78,159,310
Total Benefits	$442,598,256	$230,290,890	$230,290,890	$308,450,200	$356,543,182
Costs					
Utility Project Costs					
Customer Services	N/A	$2,650,395	$2,650,395	$2,650,395	$2,650,395
Project Administration	N/A	$31,400,821	$31,400,821	$31,400,821	$31,400,821
Advertising & Promotion	N/A	$10,694,664	$10,694,664	$10,694,664	$10,694,664
Measurement & Verification	N/A	$1,398,800	$1,398,800	$1,398,800	$1,398,800
Rebates	N/A	$38,570,476	$38,570,476	$38,570,476	$38,570,476
Other	N/A	$1,740,895	$1,740,895	$1,740,895	$1,740,895
Subtotal	N/A	$86,456,052	$86,456,052	$86,456,052	$86,456,052
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$360,568,729	N/A	N/A
Subtotal	N/A	N/A	$360,568,729	N/A	N/A
Participant Costs					
Incremental Capital Costs	$104,209,487	N/A	N/A	$103,362,151	$103,362,151
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$104,209,487	N/A	N/A	$103,362,151	$103,362,151
Total Costs	$104,209,487	$86,456,052	$447,024,781	$189,818,203	$189,818,203
Net Benefit (Cost)	$338,388,769	$143,834,838	($216,733,891)	$118,631,997	$166,724,979
Benefit/Cost Ratio	4.25	2.66	0.52	1.62	1.88

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	39.61%
Gross Load Factor at Customer	E	17.46%
Transmission Loss Factor (Energy)	F	7.267%
Transmission Loss Factor (Demand)	G	8.155%
Societal Net Benefit (Cost)	H	$677

Program Summary per Participant

Gross kW Saved at Customer	I	0.18 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.08 kW
Gross Annual kWh Saved at Customer	(B x E x I)	270 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	291 kWh

Program Summary All Participants

Total Participants	J	1,395,410
Total Budget	K	**$86,456,052**
Gross kW Saved at Customer	(J x I)	246,299 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**106,214 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	376,646,959 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**406,164,927 kWh**
Societal Net Benefits	(J x I x H)	**$166,724,979**

Utility Program Cost per kWh Lifetime	**$0.0169**
Utility Program Cost per kW at Gen	**$814**

BUSINESS SEGMENT TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$33,064,860	$33,064,860	$33,064,860	$33,064,860
T & D	N/A	$20,836,993	$20,836,993	$20,836,993	$20,836,993
Marginal Energy	N/A	$103,233,122	$103,233,122	$103,233,122	$103,233,122
Environmental Externality	N/A	N/A	N/A	N/A	$37,744,756
Subtotal	N/A	$157,134,974	$157,134,974	$157,134,974	$194,879,730
Participant Benefits					
Bill Reduction - Electric	$263,794,383	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$24,513,446	N/A	N/A	$24,513,446	$24,513,446
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$39,684,253	N/A	N/A	$40,602,971	$40,602,971
Subtotal	$327,992,083	N/A	N/A	$65,116,418	$65,116,418
Total Benefits	$327,992,083	$157,134,974	$157,134,974	$222,251,392	$259,996,148
Costs					
Utility Project Costs					
Customer Services	N/A	$1,745,900	$1,745,900	$1,745,900	$1,745,900
Project Administration	N/A	$13,007,307	$13,007,307	$13,007,307	$13,007,307
Advertising & Promotion	N/A	$1,168,219	$1,168,219	$1,168,219	$1,168,219
Measurement & Verification	N/A	$831,468	$831,468	$831,468	$831,468
Rebates	N/A	$24,513,446	$24,513,446	$24,513,446	$24,513,446
Other	N/A	$1,072,836	$1,072,836	$1,072,836	$1,072,836
Subtotal	N/A	$42,339,176	$42,339,176	$42,339,176	$42,339,176
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$263,794,383	N/A	N/A
Subtotal	N/A	N/A	$263,794,383	N/A	N/A
Participant Costs					
Incremental Capital Costs	$80,383,448	N/A	N/A	$80,383,448	$80,383,448
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$80,383,448	N/A	N/A	$80,383,448	$80,383,448
Total Costs	$80,383,448	$42,339,176	$306,133,559	$122,722,624	$122,722,624
Net Benefit (Cost)	$247,608,635	$114,795,798	($148,998,585)	$99,528,768	$137,273,523
Benefit/Cost Ratio	4.08	3.71	0.51	1.81	2.12

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	59.14%
Gross Load Factor at Customer	E	29.69%
Transmission Loss Factor (Energy)	F	6.613%
Transmission Loss Factor (Demand)	G	7.048%
Societal Net Benefit (Cost)	H	$1,503

Program Summary per Participant		
Gross kW Saved at Customer	I	1.03 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.65 kW
Gross Annual kWh Saved at Customer	(B x E x I)	2,671 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	2,860 kWh

Program Summary All Participants		
Total Participants	J	88,906
Total Budget	K	**$42,339,176**
Gross kW Saved at Customer	(J x I)	91,308 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**58,094 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	237,490,362 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**254,306,910 kWh**
Societal Net Benefits	(J x I x H)	**$137,273,523**

Utility Program Cost per kWh Lifetime	**$0.0102**
Utility Program Cost per kW at Gen	**$729**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Business Segment with Indirect Participants**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$2,660,746
Incentive Costs =	$2,492,612
16) Total Utility Project Costs =	$5,153,358
17) Direct Participant Costs ($/Part.) =	$657
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$30
Escalation Rate =	2.16%
20) Project Life (Years) =	35.1
21) Avg. Dth/Part. Saved =	20.5
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	22,280
24) Total Annual Dth Saved =	456,448
25) Incentive/Participant =	$111.88

Cost Summary	2020
Utility Cost per Participant =	$231.30
Cost per Participant per Dth =	$43.36
Lifetime Energy Reduction (Dth)	16,002,278
Societal Cost per Dth	$0.89

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($10,118,538)	0.65
Utility Cost Test	$14,074,883	3.77
Societal Test	$18,106,868	2.28
Participant Test	$17,295,925	2.17

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Business Segment Direct Participants Only**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$2,660,746
Incentive Costs =	$2,492,612
16) Total Utility Project Costs =	$5,153,358
17) Direct Participant Costs ($/Part.) =	$4,463
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$201
Escalation Rate =	2.16%
20) Project Life (Years) =	32.1
21) Avg. Dth/Part. Saved =	139.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	3,280
24) Total Annual Dth Saved =	456,448
25) Incentive/Participant =	$759.96

Cost Summary	**2020**
Utility Cost per Participant =	$1,571.18
Cost per Participant per Dth =	$43.36
Lifetime Energy Reduction (Dth)	14,638,971
Societal Cost per Dth	$0.97

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($10,081,126)	0.66
Utility Cost Test	$14,112,295	3.79
Societal Test	$18,106,868	2.28
Participant Test	$17,258,513	2.16

BUSINESS SEGMENT ENERGY EFFICIENCY TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$27,922,883	$27,922,883	$27,922,883	$27,922,883
T & D	N/A	$17,636,258	$17,636,258	$17,636,258	$17,636,258
Marginal Energy	N/A	$103,192,142	$103,192,142	$103,192,142	$103,192,142
Environmental Externality	N/A	N/A	N/A	N/A	$37,731,477
Subtotal	N/A	$148,751,282	$148,751,282	$148,751,282	$186,482,759
Participant Benefits					
Bill Reduction - Electric	$263,668,289	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$24,087,177	N/A	N/A	$24,087,177	$24,087,177
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$39,684,253	N/A	N/A	$40,602,971	$40,602,971
Subtotal	$327,439,720	N/A	N/A	$64,690,149	$64,690,149
Total Benefits	$327,439,720	$148,751,282	$148,751,282	$213,441,431	$251,172,908
Costs					
Utility Project Costs					
Customer Services	N/A	$1,715,900	$1,715,900	$1,715,900	$1,715,900
Project Administration	N/A	$9,923,139	$9,923,139	$9,923,139	$9,923,139
Advertising & Promotion	N/A	$714,539	$714,539	$714,539	$714,539
Measurement & Verification	N/A	$656,468	$656,468	$656,468	$656,468
Rebates	N/A	$24,087,177	$24,087,177	$24,087,177	$24,087,177
Other	N/A	$1,072,836	$1,072,836	$1,072,836	$1,072,836
Subtotal	N/A	$38,170,059	$38,170,059	$38,170,059	$38,170,059
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$263,668,289	N/A	N/A
Subtotal	N/A	N/A	$263,668,289	N/A	N/A
Participant Costs					
Incremental Capital Costs	$80,383,448	N/A	N/A	$80,383,448	$80,383,448
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$80,383,448	N/A	N/A	$80,383,448	$80,383,448
Total Costs	$80,383,448	$38,170,059	$301,838,349	$118,553,507	$118,553,507
Net Benefit (Cost)	$247,056,272	$110,581,223	($153,087,066)	$94,887,924	$132,619,401
Benefit/Cost Ratio	4.07	3.90	0.49	1.80	2.12

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	64.55%
Gross Load Factor at Customer	E	53.15%
Transmission Loss Factor (Energy)	F	6.613%
Transmission Loss Factor (Demand)	G	7.086%
Societal Net Benefit (Cost)	H	$2,603

Program Summary per Participant		
Gross kW Saved at Customer	I	3.66 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	2.54 kW
Gross Annual kWh Saved at Customer	(B x E x I)	17,052 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	18,259 kWh

Program Summary All Participants		
Total Participants	J	13,913
Total Budget	K	**$38,170,059**
Gross kW Saved at Customer	(J x I)	50,958 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**35,399 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	237,242,713 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**254,041,762 kWh**
Societal Net Benefits	(J x I x H)	**$132,619,401**

Utility Program Cost per kWh Lifetime	**$0.0092**
Utility Program Cost per kW at Gen	**$1,078**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Business Segment Energy Efficiency Total**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$2,660,746
Incentive Costs =	$2,492,612
16) Total Utility Project Costs =	$5,153,358
17) Direct Participant Costs ($/Part.) =	$4,463
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$201
Escalation Rate =	2.16%
20) Project Life (Years) =	148.5
21) Avg. Dth/Part. Saved =	139.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	3,280
24) Total Annual Dth Saved =	456,448
25) Incentive/Participant =	$759.96

Cost Summary	**2020**
Utility Cost per Participant =	$1,571.18
Cost per Participant per Dth =	$43.36
Lifetime Energy Reduction (Dth)	67,785,187
Societal Cost per Dth	$0.21

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($10,081,126)	0.66
Utility Cost Test	$14,112,295	3.79
Societal Test	$18,106,868	2.28
Participant Test	$17,258,513	2.16

BUSINESS NEW CONSTRUCTION — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$3,936,829	$3,936,829	$3,936,829	$3,936,829
T & D	N/A	$2,497,783	$2,497,783	$2,497,783	$2,497,783
Marginal Energy	N/A	$11,164,541	$11,164,541	$11,164,541	$11,164,541
Environmental Externality	N/A	N/A	N/A	N/A	$3,947,648
Subtotal	N/A	$17,599,154	$17,599,154	$17,599,154	$21,546,801
Participant Benefits					
Bill Reduction - Electric	$28,805,593	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$2,722,945	N/A	N/A	$2,722,945	$2,722,945
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$31,528,538	N/A	N/A	$2,722,945	$2,722,945
Total Benefits	$31,528,538	$17,599,154	$17,599,154	$20,322,099	$24,269,746
Costs					
Utility Project Costs					
Customer Services	N/A	$750,000	$750,000	$750,000	$750,000
Project Administration	N/A	$568,979	$568,979	$568,979	$568,979
Advertising & Promotion	N/A	$94,000	$94,000	$94,000	$94,000
Measurement & Verification	N/A	$286,000	$286,000	$286,000	$286,000
Rebates	N/A	$2,722,945	$2,722,945	$2,722,945	$2,722,945
Other	N/A	$250,000	$250,000	$250,000	$250,000
Subtotal	N/A	$4,671,924	$4,671,924	$4,671,924	$4,671,924
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$28,805,593	N/A	N/A
Subtotal	N/A	N/A	$28,805,593	N/A	N/A
Participant Costs					
Incremental Capital Costs	$8,489,292	N/A	N/A	$8,489,292	$8,489,292
Incremental O&M Costs	$56,198	N/A	N/A	$56,198	$56,198
Subtotal	$8,545,490	N/A	N/A	$8,545,490	$8,545,490
Total Costs	$8,545,490	$4,671,924	$33,477,517	$13,217,414	$13,217,414
Net Benefit (Cost)	$22,983,048	$12,927,230	($15,878,364)	$7,104,684	$11,052,332
Benefit/Cost Ratio	3.69	3.77	0.53	1.54	1.84

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	72.94%
Gross Load Factor at Customer	E	44.57%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$2,009

Program Summary per Participant		
Gross kW Saved at Customer	I	45.10 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	35.37 kW
Gross Annual kWh Saved at Customer	(B x E x I)	176,094 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	188,537 kWh

Program Summary All Participants		
Total Participants	J	122
Total Budget	K	**$4,671,924**
Gross kW Saved at Customer	(J x I)	5,502 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**4,316 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	21,483,430 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**23,001,531 kWh**
Societal Net Benefits	(J x I x H)	**$11,052,332**

Utility Program Cost per kWh Lifetime	**$0.0102**
Utility Program Cost per kW at Gen	**$1,083**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Business New Construction**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$239,064
Incentive Costs =	$145,441
16) Total Utility Project Costs =	$384,505
17) Direct Participant Costs ($/Part.) =	$38,363
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	20.0
21) Avg. Dth/Part. Saved =	934.4
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	25
24) Total Annual Dth Saved =	23,360
25) Incentive/Participant =	$5,817.66

Cost Summary	**2020**
Utility Cost per Participant =	$15,380.22
Cost per Participant per Dth =	$57.52
Lifetime Energy Reduction (Dth)	467,207
Societal Cost per Dth	$2.56

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($933,539)	0.69
Utility Cost Test	$1,706,597	5.44
Societal Test	$2,192,362	2.83
Participant Test	$1,826,503	2.90

COMMERCIAL EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$3,090,603	$3,090,603	$3,090,603	$3,090,603
T & D	N/A	$1,950,577	$1,950,577	$1,950,577	$1,950,577
Marginal Energy	N/A	$12,467,913	$12,467,913	$12,467,913	$12,467,913
Environmental Externality	N/A	N/A	N/A	N/A	$4,348,802
Subtotal	N/A	$17,509,094	$17,509,094	$17,509,094	$21,857,896
Participant Benefits					
Bill Reduction - Electric	$30,933,295	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$2,892,511	N/A	N/A	$2,892,511	$2,892,511
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$1,019,970	N/A	N/A	$1,019,970	$1,019,970
Subtotal	$34,845,777	N/A	N/A	$3,912,481	$3,912,481
Total Benefits	$34,845,777	$17,509,094	$17,509,094	$21,421,575	$25,770,378
Costs					
Utility Project Costs					
Customer Services	N/A	$75,000	$75,000	$75,000	$75,000
Project Administration	N/A	$679,221	$679,221	$679,221	$679,221
Advertising & Promotion	N/A	$25,000	$25,000	$25,000	$25,000
Measurement & Verification	N/A	$30,000	$30,000	$30,000	$30,000
Rebates	N/A	$2,892,511	$2,892,511	$2,892,511	$2,892,511
Other	N/A	$7,500	$7,500	$7,500	$7,500
Subtotal	N/A	$3,709,232	$3,709,232	$3,709,232	$3,709,232
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$30,933,295	N/A	N/A
Subtotal	N/A	N/A	$30,933,295	N/A	N/A
Participant Costs					
Incremental Capital Costs	$10,369,388	N/A	N/A	$10,369,388	$10,369,388
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$10,369,388	N/A	N/A	$10,369,388	$10,369,388
Total Costs	$10,369,388	$3,709,232	$34,642,527	$14,078,620	$14,078,620
Net Benefit (Cost)	$24,476,389	$13,799,862	($17,133,434)	$7,342,955	$11,691,758
Benefit/Cost Ratio	3.36	4.72	0.51	1.52	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	17.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	80.06%
Gross Load Factor at Customer	E	67.65%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$2,647

Program Summary per Participant		
Gross kW Saved at Customer	I	24.27 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	20.89 kW
Gross Annual kWh Saved at Customer	(B x E x I)	143,842 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	154,007 kWh

Program Summary All Participants		
Total Participants	J	182
Total Budget	K	**$3,709,232**
Gross kW Saved at Customer	(J x I)	4,417 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**3,803 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	26,179,272 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**28,029,199 kWh**
Societal Net Benefits	(J x I x H)	**$11,691,758**

Utility Program Cost per kWh Lifetime	**$0.0076**
Utility Program Cost per kW at Gen	**$975**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Commercial Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$282,179
Incentive Costs =	$230,703
16) Total Utility Project Costs =	$512,882
17) Direct Participant Costs ($/Part.) =	$33,219
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$5,288
Escalation Rate =	2.16%
20) Project Life (Years) =	14.9
21) Avg. Dth/Part. Saved =	895.3
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	46
24) Total Annual Dth Saved =	41,186
25) Incentive/Participant =	$5,015.29

Cost Summary	**2020**
Utility Cost per Participant =	$11,149.62
Cost per Participant per Dth =	$49.55
Lifetime Energy Reduction (Dth)	612,933
Societal Cost per Dth	$2.95

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($1,288,048)	0.70
Utility Cost Test	$2,439,488	5.76
Societal Test	$5,051,526	3.79
Participant Test	$4,992,619	4.27

COMMERCIAL REFRIGERATION EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$143,434	$143,434	$143,434	$143,434
T & D	N/A	$90,050	$90,050	$90,050	$90,050
Marginal Energy	N/A	$725,953	$725,953	$725,953	$725,953
Environmental Externality	N/A	N/A	N/A	N/A	$254,447
Subtotal	N/A	$959,437	$959,437	$959,437	$1,213,885
Participant Benefits					
Bill Reduction - Electric	$1,608,836	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$141,165	N/A	N/A	$141,165	$141,165
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$135,074	N/A	N/A	$7,045	$7,045
Subtotal	$1,885,075	N/A	N/A	$148,210	$148,210
Total Benefits	$1,885,075	$959,437	$959,437	$1,107,647	$1,362,094
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$209,780	$209,780	$209,780	$209,780
Advertising & Promotion	N/A	$9,969	$9,969	$9,969	$9,969
Measurement & Verification	N/A	$1,821	$1,821	$1,821	$1,821
Rebates	N/A	$141,165	$141,165	$141,165	$141,165
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$362,735	$362,735	$362,735	$362,735
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,608,836	N/A	N/A
Subtotal	N/A	N/A	$1,608,836	N/A	N/A
Participant Costs					
Incremental Capital Costs	$505,497	N/A	N/A	$505,497	$505,497
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$505,497	N/A	N/A	$505,497	$505,497
Total Costs	$505,497	$362,735	$1,971,571	$868,232	$868,232
Net Benefit (Cost)	$1,379,578	$596,702	($1,012,134)	$239,415	$493,862
Benefit/Cost Ratio	3.73	2.65	0.49	1.28	1.57

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	11.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	16.59%
Gross Load Factor at Customer	E	17.36%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$371

Program Summary per Participant		
Gross kW Saved at Customer	I	3.88 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.69 kW
Gross Annual kWh Saved at Customer	(B x E x I)	5,897 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	6,314 kWh

Program Summary All Participants		
Total Participants	J	343
Total Budget	K	**$362,735**
Gross kW Saved at Customer	(J x I)	1,330 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**237 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	2,022,621 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**2,165,547 kWh**
Societal Net Benefits	(J x I x H)	**$493,862**

Utility Program Cost per kWh Lifetime	**$0.0141**
Utility Program Cost per kW at Gen	**$1,529**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Commercial Refrigeration Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$21,810
Incentive Costs =	$9,812
16) Total Utility Project Costs =	$31,621
17) Direct Participant Costs ($/Part.) =	$619
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$49
Escalation Rate =	2.16%
20) Project Life (Years) =	11.5
21) Avg. Dth/Part. Saved =	28.9
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	51
24) Total Annual Dth Saved =	1,472
25) Incentive/Participant =	$192.38

Cost Summary	**2020**
Utility Cost per Participant =	$620.02
Cost per Participant per Dth =	$42.92
Lifetime Energy Reduction (Dth)	16,941
Societal Cost per Dth	$3.15

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($54,174)	0.61
Utility Cost Test	$54,275	2.72
Societal Test	$82,360	2.54
Participant Test	$106,288	4.37

COOLING EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$2,073,573	$2,073,573	$2,073,573	$2,073,573
T & D	N/A	$1,313,889	$1,313,889	$1,313,889	$1,313,889
Marginal Energy	N/A	$2,779,054	$2,779,054	$2,779,054	$2,779,054
Environmental Externality	N/A	N/A	N/A	N/A	$1,049,842
Subtotal	N/A	$6,166,517	$6,166,517	$6,166,517	$7,216,359
Participant Benefits					
Bill Reduction - Electric	$7,727,764	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,940,471	N/A	N/A	$1,940,471	$1,940,471
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$38,737	N/A	N/A	$38,737	$38,737
Subtotal	$9,706,971	N/A	N/A	$1,979,208	$1,979,208
Total Benefits	$9,706,971	$6,166,517	$6,166,517	$8,145,725	$9,195,567
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$457,668	$457,668	$457,668	$457,668
Advertising & Promotion	N/A	$63,260	$63,260	$63,260	$63,260
Measurement & Verification	N/A	$18,000	$18,000	$18,000	$18,000
Rebates	N/A	$1,940,471	$1,940,471	$1,940,471	$1,940,471
Other	N/A	$197,000	$197,000	$197,000	$197,000
Subtotal	N/A	$2,676,399	$2,676,399	$2,676,399	$2,676,399
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$7,727,764	N/A	N/A
Subtotal	N/A	N/A	$7,727,764	N/A	N/A
Participant Costs					
Incremental Capital Costs	$4,505,535	N/A	N/A	$4,505,535	$4,505,535
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$4,505,535	N/A	N/A	$4,505,535	$4,505,535
Total Costs	$4,505,535	$2,676,399	$10,404,163	$7,181,934	$7,181,934
Net Benefit (Cost)	$5,201,437	$3,490,118	($4,237,646)	$963,791	$2,013,634
Benefit/Cost Ratio	2.15	2.30	0.59	1.13	1.28

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	18.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	78.44%
Gross Load Factor at Customer	E	24.67%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$722

Program Summary per Participant

Gross kW Saved at Customer	I	1.54 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	1.30 kW
Gross Annual kWh Saved at Customer	(B x E x I)	3,336 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	3,572 kWh

Program Summary All Participants

Total Participants	J	1,806
Total Budget	K	**$2,676,399**
Gross kW Saved at Customer	(J x I)	2,787 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**2,351 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	6,024,804 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**6,450,540 kWh**
Societal Net Benefits	(J x I x H)	**$2,013,634**

Utility Program Cost per kWh Lifetime	**$0.0225**
Utility Program Cost per kW at Gen	**$1,138**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Cooling Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$15,000
Incentive Costs =	$33,579
16) Total Utility Project Costs =	$48,579
17) Direct Participant Costs ($/Part.) =	$38,413
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	15.0
21) Avg. Dth/Part. Saved =	1989.3
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	3
24) Total Annual Dth Saved =	5,968
25) Incentive/Participant =	$11,192.86

Cost Summary	2020
Utility Cost per Participant =	$16,192.86
Cost per Participant per Dth =	$27.45
Lifetime Energy Reduction (Dth)	89,519
Societal Cost per Dth	$1.45

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($161,776)	0.73
Utility Cost Test	$382,556	8.87
Societal Test	$497,710	4.82
Participant Test	$462,673	5.01

CUSTOM EFFICIENCY — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$665,180	$665,180	$665,180	$665,180
T & D	N/A	$420,577	$420,577	$420,577	$420,577
Marginal Energy	N/A	$2,255,194	$2,255,194	$2,255,194	$2,255,194
Environmental Externality	N/A	N/A	N/A	N/A	$790,382
Subtotal	N/A	$3,340,951	$3,340,951	$3,340,951	$4,131,333
Participant Benefits					
Bill Reduction - Electric	$5,672,045	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$341,571	N/A	N/A	$341,571	$341,571
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$6,923,777	N/A	N/A	$6,923,777	$6,923,777
Subtotal	$12,937,393	N/A	N/A	$7,265,348	$7,265,348
Total Benefits	$12,937,393	$3,340,951	$3,340,951	$10,606,300	$11,396,681
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$988,068	$988,068	$988,068	$988,068
Advertising & Promotion	N/A	$36,796	$36,796	$36,796	$36,796
Measurement & Verification	N/A	$16,491	$16,491	$16,491	$16,491
Rebates	N/A	$341,571	$341,571	$341,571	$341,571
Other	N/A	$2,464	$2,464	$2,464	$2,464
Subtotal	N/A	$1,385,389	$1,385,389	$1,385,389	$1,385,389
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$5,672,045	N/A	N/A
Subtotal	N/A	N/A	$5,672,045	N/A	N/A
Participant Costs					
Incremental Capital Costs	$1,386,935	N/A	N/A	$1,386,935	$1,386,935
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$1,386,935	N/A	N/A	$1,386,935	$1,386,935
Total Costs	$1,386,935	$1,385,389	$7,057,434	$2,772,324	$2,772,324
Net Benefit (Cost)	$11,550,458	$1,955,562	($3,716,483)	$7,833,975	$8,624,357
Benefit/Cost Ratio	9.33	2.41	0.47	3.83	4.11

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	18.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	73.96%
Gross Load Factor at Customer	E	53.00%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$8,760

Program Summary per Participant		
Gross kW Saved at Customer	I	18.93 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	15.06 kW
Gross Annual kWh Saved at Customer	(B x E x I)	87,904 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	94,116 kWh

Program Summary All Participants		
Total Participants	J	52
Total Budget	K	**$1,385,389**
Gross kW Saved at Customer	(J x I)	984 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**783 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	4,571,010 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**4,894,015 kWh**
Societal Net Benefits	(J x I x H)	**$8,624,357**

Utility Program Cost per kWh Lifetime	**$0.0152**
Utility Program Cost per kW at Gen	**$1,770**

Conservation Improvement Program (CIP)

BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Custom Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$122,199
Incentive Costs =	$103,360
16) Total Utility Project Costs =	$225,559
17) Direct Participant Costs ($/Part.) =	$64,744
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$2,613
Escalation Rate =	2.16%
20) Project Life (Years) =	19.5
21) Avg. Dth/Part. Saved =	810.1
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	21
24) Total Annual Dth Saved =	17,011
25) Incentive/Participant =	$4,921.90

Cost Summary	**2020**
Utility Cost per Participant =	$10,740.90
Cost per Participant per Dth =	$93.18
Lifetime Energy Reduction (Dth)	331,141
Societal Cost per Dth	$4.47

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($617,713)	0.71
Utility Cost Test	$1,268,034	6.62
Societal Test	$1,589,211	2.07
Participant Test	$1,306,198	1.96

DATA CENTER EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$583,095	$583,095	$583,095	$583,095
T & D	N/A	$364,495	$364,495	$364,495	$364,495
Marginal Energy	N/A	$3,270,690	$3,270,690	$3,270,690	$3,270,690
Environmental Externality	N/A	N/A	N/A	N/A	$1,147,277
Subtotal	N/A	$4,218,280	$4,218,280	$4,218,280	$5,365,556
Participant Benefits					
Bill Reduction - Electric	$6,931,472	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$665,624	N/A	N/A	$665,624	$665,624
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$331,419	N/A	N/A	$332,673	$332,673
Subtotal	$7,928,515	N/A	N/A	$998,297	$998,297
Total Benefits	$7,928,515	$4,218,280	$4,218,280	$5,216,576	$6,363,853
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$526,163	$526,163	$526,163	$526,163
Advertising & Promotion	N/A	$27,603	$27,603	$27,603	$27,603
Measurement & Verification	N/A	$66,220	$66,220	$66,220	$66,220
Rebates	N/A	$665,624	$665,624	$665,624	$665,624
Other	N/A	$71,800	$71,800	$71,800	$71,800
Subtotal	N/A	$1,357,410	$1,357,410	$1,357,410	$1,357,410
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$6,931,472	N/A	N/A
Subtotal	N/A	N/A	$6,931,472	N/A	N/A
Participant Costs					
Incremental Capital Costs	$2,104,432	N/A	N/A	$2,104,432	$2,104,432
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$2,104,432	N/A	N/A	$2,104,432	$2,104,432
Total Costs	$2,104,432	$1,357,410	$8,288,882	$3,461,842	$3,461,842
Net Benefit (Cost)	$5,824,083	$2,860,870	($4,070,603)	$1,754,734	$2,902,011
Benefit/Cost Ratio	3.77	3.11	0.51	1.51	1.84

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	11.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	78.46%
Gross Load Factor at Customer	E	88.91%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$2,549

Program Summary per Participant

Gross kW Saved at Customer	I	14.23 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	12.01 kW
Gross Annual kWh Saved at Customer	(B x E x I)	110,854 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	118,688 kWh

Program Summary All Participants

Total Participants	J	80
Total Budget	K	**$1,357,410**
Gross kW Saved at Customer	(J x I)	1,139 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**961 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	8,868,355 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**9,495,027 kWh**
Societal Net Benefits	(J x I x H)	**$2,902,011**

Utility Program Cost per kWh Lifetime	**$0.0124**
Utility Program Cost per kW at Gen	**$1,413**

EFFICIENCY CONTROLS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$209,233	$209,233	$209,233	$209,233
T & D	N/A	$131,583	$131,583	$131,583	$131,583
Marginal Energy	N/A	$3,292,533	$3,292,533	$3,292,533	$3,292,533
Environmental Externality	N/A	N/A	N/A	N/A	$1,322,399
Subtotal	N/A	$3,633,349	$3,633,349	$3,633,349	$4,955,748
Participant Benefits					
Bill Reduction - Electric	$7,381,977	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$796,294	N/A	N/A	$796,294	$796,294
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$833,528	N/A	N/A	$833,528	$833,528
Subtotal	$9,011,799	N/A	N/A	$1,629,822	$1,629,822
Total Benefits	$9,011,799	$3,633,349	$3,633,349	$5,263,171	$6,585,570
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$352,119	$352,119	$352,119	$352,119
Advertising & Promotion	N/A	$58,652	$58,652	$58,652	$58,652
Measurement & Verification	N/A	$5,000	$5,000	$5,000	$5,000
Rebates	N/A	$796,294	$796,294	$796,294	$796,294
Other	N/A	$20,000	$20,000	$20,000	$20,000
Subtotal	N/A	$1,232,065	$1,232,065	$1,232,065	$1,232,065
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$7,381,977	N/A	N/A
Subtotal	N/A	N/A	$7,381,977	N/A	N/A
Participant Costs					
Incremental Capital Costs	$3,056,863	N/A	N/A	$3,056,863	$3,056,863
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$3,056,863	N/A	N/A	$3,056,863	$3,056,863
Total Costs	$3,056,863	$1,232,065	$8,614,042	$4,288,928	$4,288,928
Net Benefit (Cost)	$5,954,936	$2,401,284	($4,980,693)	$974,243	$2,296,642
Benefit/Cost Ratio	2.95	2.95	0.42	1.23	1.54

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	21.05%
Gross Load Factor at Customer	E	78.78%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,853

Program Summary per Participant		
Gross kW Saved at Customer	I	17.70 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	4.01 kW
Gross Annual kWh Saved at Customer	(B x E x I)	122,161 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	130,794 kWh

Program Summary All Participants		
Total Participants	J	70
Total Budget	K	**$1,232,065**
Gross kW Saved at Customer	(J x I)	1,239 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**280 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	8,551,289 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**9,155,555 kWh**
Societal Net Benefits	(J x I x H)	**$2,296,642**

Utility Program Cost per kWh Lifetime	**$0.0090**
Utility Program Cost per kW at Gen	**$4,393**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Efficiency Controls**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$49,300
Incentive Costs =	$134,729
16) Total Utility Project Costs =	$184,029
17) Direct Participant Costs ($/Part.) =	$59,037
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$1,567
Escalation Rate =	2.16%
20) Project Life (Years) =	15.0
21) Avg. Dth/Part. Saved =	944.8
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	17
24) Total Annual Dth Saved =	16,062
25) Incentive/Participant =	$7,925.25

Cost Summary	**2020**
Utility Cost per Participant =	$10,825.25
Cost per Participant per Dth =	$73.94
Lifetime Energy Reduction (Dth)	240,924
Societal Cost per Dth	$4.37

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($488,679)	0.70
Utility Cost Test	$976,291	6.31
Societal Test	$917,765	1.87
Participant Test	$876,758	1.87

FLUID SYSTEMS OPTIMIZATION — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$1,550,993	$1,550,993	$1,550,993	$1,550,993
T & D	N/A	$981,899	$981,899	$981,899	$981,899
Marginal Energy	N/A	$5,130,010	$5,130,010	$5,130,010	$5,130,010
Environmental Externality	N/A	N/A	N/A	N/A	$2,137,518
Subtotal	N/A	$7,662,902	$7,662,902	$7,662,902	$9,800,420
Participant Benefits					
Bill Reduction - Electric	$14,088,216	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,155,973	N/A	N/A	$1,155,973	$1,155,973
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$33,734	N/A	N/A	$33,734	$33,734
Subtotal	$15,277,923	N/A	N/A	$1,189,707	$1,189,707
Total Benefits	$15,277,923	$7,662,902	$7,662,902	$8,852,609	$10,990,128
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$411,552	$411,552	$411,552	$411,552
Advertising & Promotion	N/A	$20,000	$20,000	$20,000	$20,000
Measurement & Verification	N/A	$31,243	$31,243	$31,243	$31,243
Rebates	N/A	$1,155,973	$1,155,973	$1,155,973	$1,155,973
Other	N/A	$26,000	$26,000	$26,000	$26,000
Subtotal	N/A	$1,644,768	$1,644,768	$1,644,768	$1,644,768
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$14,088,216	N/A	N/A
Subtotal	N/A	N/A	$14,088,216	N/A	N/A
Participant Costs					
Incremental Capital Costs	$3,314,169	N/A	N/A	$3,314,169	$3,314,169
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$3,314,169	N/A	N/A	$3,314,169	$3,314,169
Total Costs	$3,314,169	$1,644,768	$15,732,984	$4,958,937	$4,958,937
Net Benefit (Cost)	$11,963,754	$6,018,134	($8,070,082)	$3,893,672	$6,031,191
Benefit/Cost Ratio	4.61	4.66	0.49	1.79	2.22

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	17.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	78.91%
Gross Load Factor at Customer	E	66.17%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$2,651

Program Summary per Participant		
Gross kW Saved at Customer	I	6.56 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	5.57 kW
Gross Annual kWh Saved at Customer	(B x E x I)	38,050 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	40,738 kWh

Program Summary All Participants		
Total Participants	J	347
Total Budget	K	**$1,644,768**
Gross kW Saved at Customer	(J x I)	2,275 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**1,930 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	13,186,040 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**14,117,816 kWh**
Societal Net Benefits	(J x I x H)	**$6,031,191**

Utility Program Cost per kWh Lifetime	**$0.0068**
Utility Program Cost per kW at Gen	**$852**

FOODSERVICE EQUIPMENT — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$57,811	$57,811	$57,811	$57,811
T & D	N/A	$36,499	$36,499	$36,499	$36,499
Marginal Energy	N/A	$213,876	$213,876	$213,876	$213,876
Environmental Externality	N/A	N/A	N/A	N/A	$76,044
Subtotal	N/A	$308,186	$308,186	$308,186	$384,230
Participant Benefits					
Bill Reduction - Electric	$488,858	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$28,781	N/A	N/A	$28,781	$28,781
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$319,254	N/A	N/A	$27,531	$27,531
Subtotal	$836,893	N/A	N/A	$56,312	$56,312
Total Benefits	$836,893	$308,186	$308,186	$364,499	$440,542
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$12,087	$12,087	$12,087	$12,087
Advertising & Promotion	N/A	$7,885	$7,885	$7,885	$7,885
Measurement & Verification	N/A	$5,000	$5,000	$5,000	$5,000
Rebates	N/A	$28,781	$28,781	$28,781	$28,781
Other	N/A	$1,000	$1,000	$1,000	$1,000
Subtotal	N/A	$54,753	$54,753	$54,753	$54,753
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$488,858	N/A	N/A
Subtotal	N/A	N/A	$488,858	N/A	N/A
Participant Costs					
Incremental Capital Costs	$218,783	N/A	N/A	$218,783	$218,783
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$218,783	N/A	N/A	$218,783	$218,783
Total Costs	$218,783	$54,753	$543,611	$273,536	$273,536
Net Benefit (Cost)	$618,110	$253,433	($235,425)	$90,963	$167,006
Benefit/Cost Ratio	3.83	5.63	0.57	1.33	1.61

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	16.5 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	62.19%
Gross Load Factor at Customer	E	49.09%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,534

Program Summary per Participant		
Gross kW Saved at Customer	I	1.49 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	1.00 kW
Gross Annual kWh Saved at Customer	(B x E x I)	6,412 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	6,865 kWh

Program Summary All Participants		
Total Participants	J	73
Total Budget	K	**$54,753**
Gross kW Saved at Customer	(J x I)	109 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**73 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	468,058 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**501,133 kWh**
Societal Net Benefits	(J x I x H)	**$167,006**

Utility Program Cost per kWh Lifetime	**$0.0066**
Utility Program Cost per kW at Gen	**$752**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Foodservice Equipment**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$66,245
Incentive Costs =	$30,183
16) Total Utility Project Costs =	$96,428
17) Direct Participant Costs ($/Part.) =	$2,753
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$23
Escalation Rate =	2.16%
20) Project Life (Years) =	12.3
21) Avg. Dth/Part. Saved =	89.4
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	67
24) Total Annual Dth Saved =	5,992
25) Incentive/Participant =	$450.50

Cost Summary	2020
Utility Cost per Participant =	$1,439.23
Cost per Participant per Dth =	$46.88
Lifetime Energy Reduction (Dth)	73,643
Societal Cost per Dth	$3.40

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($192,529)	0.66
Utility Cost Test	$269,591	3.80
Societal Test	$274,642	2.10
Participant Test	$356,372	2.93

HEATING EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$24,308	$24,308	$24,308	$24,308
T & D	N/A	$15,322	$15,322	$15,322	$15,322
Marginal Energy	N/A	$64,875	$64,875	$64,875	$64,875
Environmental Externality	N/A	N/A	N/A	N/A	$23,600
Subtotal	N/A	$104,504	$104,504	$104,504	$128,105
Participant Benefits					
Bill Reduction - Electric	$249,465	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$7,780	N/A	N/A	$7,780	$7,780
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$257,245	N/A	N/A	$7,780	$7,780
Total Benefits	$257,245	$104,504	$104,504	$112,284	$135,885
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$0	$0	$0	$0
Advertising & Promotion	N/A	$25	$25	$25	$25
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$7,780	$7,780	$7,780	$7,780
Other	N/A	$25	$25	$25	$25
Subtotal	N/A	$7,830	$7,830	$7,830	$7,830
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$249,465	N/A	N/A
Subtotal	N/A	N/A	$249,465	N/A	N/A
Participant Costs					
Incremental Capital Costs	$16,675	N/A	N/A	$16,675	$16,675
Incremental O&M Costs	$7,653	N/A	N/A	$0	$0
Subtotal	$24,328	N/A	N/A	$16,675	$16,675
Total Costs	$24,328	$7,830	$257,295	$24,505	$24,505
Net Benefit (Cost)	$232,917	$96,674	($152,791)	$87,779	$111,380
Benefit/Cost Ratio	10.57	13.35	0.41	4.58	5.55

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	16.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	71.65%
Gross Load Factor at Customer	E	40.69%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$2,772

Program Summary per Participant		
Gross kW Saved at Customer	I	0.63 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.49 kW
Gross Annual kWh Saved at Customer	(B x E x I)	2,238 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	2,443 kWh

Program Summary All Participants		
Total Participants	J	64
Total Budget	K	**$7,830**
Gross kW Saved at Customer	(J x I)	40 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**32 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	143,217 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**156,350 kWh**
Societal Net Benefits	(J x I x H)	**$111,380**

Utility Program Cost per kWh Lifetime	**$0.0031**
Utility Program Cost per kW at Gen	**$248**

Conservation Improvement Program (CIP)

BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Heating Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$716,628
Incentive Costs =	$739,165
16) Total Utility Project Costs =	$1,455,793
17) Direct Participant Costs ($/Part.) =	$4,162
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$46
Escalation Rate =	2.16%
20) Project Life (Years) =	7.7
21) Avg. Dth/Part. Saved =	212.9
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	576
24) Total Annual Dth Saved =	122,620
25) Incentive/Participant =	$1,283.41

Cost Summary	**2020**
Utility Cost per Participant =	$2,527.70
Cost per Participant per Dth =	$31.42
Lifetime Energy Reduction (Dth)	948,051
Societal Cost per Dth	$3.48

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($2,577,854)	0.64
Utility Cost Test	$3,315,081	3.45
Societal Test	$3,662,680	2.11
Participant Test	$4,294,749	2.67

LIGHTING EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$5,398,498	$5,398,498	$5,398,498	$5,398,498
T & D	N/A	$3,406,729	$3,406,729	$3,406,729	$3,406,729
Marginal Energy	N/A	$22,060,747	$22,060,747	$22,060,747	$22,060,747
Environmental Externality	N/A	N/A	N/A	N/A	$8,181,087
Subtotal	N/A	$30,865,974	$30,865,974	$30,865,974	$39,047,061
Participant Benefits					
Bill Reduction - Electric	$56,330,309	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$4,459,335	N/A	N/A	$4,459,335	$4,459,335
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$6,407	$6,407
Subtotal	$60,789,644	N/A	N/A	$4,465,742	$4,465,742
Total Benefits	$60,789,644	$30,865,974	$30,865,974	$35,331,716	$43,512,803
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$1,966,570	$1,966,570	$1,966,570	$1,966,570
Advertising & Promotion	N/A	$65,002	$65,002	$65,002	$65,002
Measurement & Verification	N/A	$75,000	$75,000	$75,000	$75,000
Rebates	N/A	$4,459,335	$4,459,335	$4,459,335	$4,459,335
Other	N/A	$100,000	$100,000	$100,000	$100,000
Subtotal	N/A	$6,665,907	$6,665,907	$6,665,907	$6,665,907
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$56,330,309	N/A	N/A
Subtotal	N/A	N/A	$56,330,309	N/A	N/A
Participant Costs					
Incremental Capital Costs	$16,887,852	N/A	N/A	$16,887,852	$16,887,852
Incremental O&M Costs	$1,788,890	N/A	N/A	$0	$0
Subtotal	$18,676,742	N/A	N/A	$16,887,852	$16,887,852
Total Costs	$18,676,742	$6,665,907	$62,996,216	$23,553,759	$23,553,759
Net Benefit (Cost)	$42,112,902	$24,200,067	($32,130,243)	$11,777,957	$19,959,044
Benefit/Cost Ratio	3.25	4.63	0.49	1.50	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	15.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	70.41%
Gross Load Factor at Customer	E	61.61%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,999

Program Summary per Participant		
Gross kW Saved at Customer	I	6.15 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	4.66 kW
Gross Annual kWh Saved at Customer	(B x E x I)	33,197 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	35,542 kWh

Program Summary All Participants		
Total Participants	J	1,623
Total Budget	K	**$6,665,907**
Gross kW Saved at Customer	(J x I)	9,986 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**7,559 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	53,891,239 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**57,699,400 kWh**
Societal Net Benefits	(J x I x H)	**$19,959,044**
Utility Program Cost per kWh Lifetime		**$0.0073**
Utility Program Cost per kW at Gen		**$882**

MOTOR EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$4,738,029	$4,738,029	$4,738,029	$4,738,029
T & D	N/A	$2,990,971	$2,990,971	$2,990,971	$2,990,971
Marginal Energy	N/A	$14,333,493	$14,333,493	$14,333,493	$14,333,493
Environmental Externality	N/A	N/A	N/A	N/A	$5,240,973
Subtotal	N/A	$22,062,493	$22,062,493	$22,062,493	$27,303,466
Participant Benefits					
Bill Reduction - Electric	$38,015,076	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$2,392,086	N/A	N/A	$2,392,086	$2,392,086
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$84,863	N/A	N/A	$84,863	$84,863
Subtotal	$40,492,026	N/A	N/A	$2,476,949	$2,476,949
Total Benefits	$40,492,026	$22,062,493	$22,062,493	$24,539,442	$29,780,415
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$776,000	$776,000	$776,000	$776,000
Advertising & Promotion	N/A	$250,000	$250,000	$250,000	$250,000
Measurement & Verification	N/A	$20,000	$20,000	$20,000	$20,000
Rebates	N/A	$2,392,086	$2,392,086	$2,392,086	$2,392,086
Other	N/A	$205,000	$205,000	$205,000	$205,000
Subtotal	N/A	$3,643,086	$3,643,086	$3,643,086	$3,643,086
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$38,015,076	N/A	N/A
Subtotal	N/A	N/A	$38,015,076	N/A	N/A
Participant Costs					
Incremental Capital Costs	$7,285,015	N/A	N/A	$7,285,015	$7,285,015
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$7,285,015	N/A	N/A	$7,285,015	$7,285,015
Total Costs	$7,285,015	$3,643,086	$41,658,162	$10,928,101	$10,928,101
Net Benefit (Cost)	$33,207,011	$18,419,407	($19,595,670)	$13,611,341	$18,852,314
Benefit/Cost Ratio	5.56	6.06	0.53	2.25	2.73

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	76.97%
Gross Load Factor at Customer	E	51.22%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$2,664

Program Summary per Participant		
Gross kW Saved at Customer	I	4.27 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	3.53 kW
Gross Annual kWh Saved at Customer	(B x E x I)	19,146 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	20,499 kWh

Program Summary All Participants		
Total Participants	J	1,658
Total Budget	K	**$3,643,086**
Gross kW Saved at Customer	(J x I)	7,076 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**5,856 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	31,744,064 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**33,987,221 kWh**
Societal Net Benefits	(J x I x H)	**$18,852,314**

Utility Program Cost per kWh Lifetime	**$0.0064**
Utility Program Cost per kW at Gen	**$622**

MULTI-FAMILY BUILDING EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$309,194	$309,194	$309,194	$309,194
T & D	N/A	$193,850	$193,850	$193,850	$193,850
Marginal Energy	N/A	$1,234,996	$1,234,996	$1,234,996	$1,234,996
Environmental Externality	N/A	N/A	N/A	N/A	$445,218
Subtotal	N/A	$1,738,040	$1,738,040	$1,738,040	$2,183,258
Participant Benefits					
Bill Reduction - Electric	$4,248,838	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$565,593	N/A	N/A	$565,593	$565,593
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$18,670	N/A	N/A	$32,800	$32,800
Subtotal	$4,833,101	N/A	N/A	$598,393	$598,393
Total Benefits	$4,833,101	$1,738,040	$1,738,040	$2,336,433	$2,781,651
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$894,043	$894,043	$894,043	$894,043
Advertising & Promotion	N/A	$10,800	$10,800	$10,800	$10,800
Measurement & Verification	N/A	$6,375	$6,375	$6,375	$6,375
Rebates	N/A	$565,593	$565,593	$565,593	$565,593
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$1,476,811	$1,476,811	$1,476,811	$1,476,811
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$4,248,838	N/A	N/A
Subtotal	N/A	N/A	$4,248,838	N/A	N/A
Participant Costs					
Incremental Capital Costs	$771,564	N/A	N/A	$771,564	$771,564
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$771,564	N/A	N/A	$771,564	$771,564
Total Costs	$771,564	$1,476,811	$5,725,649	$2,248,375	$2,248,375
Net Benefit (Cost)	$4,061,536	$261,229	($3,987,609)	$88,058	$533,276
Benefit/Cost Ratio	6.26	1.18	0.30	1.04	1.24

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	12.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	16.90%
Gross Load Factor at Customer	E	13.95%
Transmission Loss Factor (Energy)	F	7.413%
Transmission Loss Factor (Demand)	G	8.536%
Societal Net Benefit (Cost)	H	$194

Program Summary per Participant		
Gross kW Saved at Customer	I	0.40 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.07 kW
Gross Annual kWh Saved at Customer	(B x E x I)	489 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	528 kWh

Program Summary All Participants		
Total Participants	J	6,860
Total Budget	K	**$1,476,811**
Gross kW Saved at Customer	(J x I)	2,746 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**507 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	3,356,144 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**3,624,863 kWh**
Societal Net Benefits	(J x I x H)	**$533,276**

Utility Program Cost per kWh Lifetime	**$0.0317**
Utility Program Cost per kW at Gen	**$2,910**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Multi-Family Building Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$503,687
Incentive Costs =	$168,656
16) Total Utility Project Costs =	$672,343
17) Direct Participant Costs ($/Part.) =	$191
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$33
Escalation Rate =	2.16%
20) Project Life (Years) =	10.9
21) Avg. Dth/Part. Saved =	6.9
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	2,280
24) Total Annual Dth Saved =	15,773
25) Incentive/Participant =	$73.97

Cost Summary	**2020**
Utility Cost per Participant =	$294.89
Cost per Participant per Dth =	$70.18
Lifetime Energy Reduction (Dth)	171,606
Societal Cost per Dth	$5.47

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($899,182)	0.49
Utility Cost Test	$191,615	1.28
Societal Test	$837,484	1.89
Participant Test	$1,418,699	4.26

PROCESS EFFICIENCY **2020 ELECTRIC** **GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$4,265,710	$4,265,710	$4,265,710	$4,265,710
T & D	N/A	$2,693,147	$2,693,147	$2,693,147	$2,693,147
Marginal Energy	N/A	$19,449,217	$19,449,217	$19,449,217	$19,449,217
Environmental Externality	N/A	N/A	N/A	N/A	$7,166,221
Subtotal	N/A	$26,408,074	$26,408,074	$26,408,074	$33,574,295
Participant Benefits					
Bill Reduction - Electric	$50,915,379	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$4,456,249	N/A	N/A	$4,456,249	$4,456,249
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$30,937,931	N/A	N/A	$31,106,161	$31,106,161
Subtotal	$86,309,559	N/A	N/A	$35,562,410	$35,562,410
Total Benefits	$86,309,559	$26,408,074	$26,408,074	$61,970,484	$69,136,705
Costs					
Utility Project Costs					
Customer Services	N/A	$675,000	$675,000	$675,000	$675,000
Project Administration	N/A	$1,506,202	$1,506,202	$1,506,202	$1,506,202
Advertising & Promotion	N/A	$6,835	$6,835	$6,835	$6,835
Measurement & Verification	N/A	$87,000	$87,000	$87,000	$87,000
Rebates	N/A	$4,456,249	$4,456,249	$4,456,249	$4,456,249
Other	N/A	$33,000	$33,000	$33,000	$33,000
Subtotal	N/A	$6,764,286	$6,764,286	$6,764,286	$6,764,286
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$50,915,379	N/A	N/A
Subtotal	N/A	N/A	$50,915,379	N/A	N/A
Participant Costs					
Incremental Capital Costs	$18,076,083	N/A	N/A	$18,076,083	$18,076,083
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$18,076,083	N/A	N/A	$18,076,083	$18,076,083
Total Costs	$18,076,083	$6,764,286	$57,679,665	$24,840,369	$24,840,369
Net Benefit (Cost)	$68,233,476	$19,643,788	($31,271,591)	$37,130,115	$44,296,336
Benefit/Cost Ratio	4.77	3.90	0.46	2.49	2.78

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	17.3 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	55.61%
Gross Load Factor at Customer	E	56.34%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$5,072

Program Summary per Participant		
Gross kW Saved at Customer	I	36.70 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	21.94 kW
Gross Annual kWh Saved at Customer	(B x E x I)	181,099 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	193,896 kWh

Program Summary All Participants		
Total Participants	J	238
Total Budget	K	**$6,764,286**
Gross kW Saved at Customer	(J x I)	8,734 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**5,222 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	43,101,469 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**46,147,183 kWh**
Societal Net Benefits	(J x I x H)	**$44,296,336**

Utility Program Cost per kWh Lifetime	**$0.0085**
Utility Program Cost per kW at Gen	**$1,295**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Process Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$458,152
Incentive Costs =	$630,171
16) Total Utility Project Costs =	$1,088,323
17) Direct Participant Costs ($/Part.) =	$81,097
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$2,199
Escalation Rate =	2.16%
20) Project Life (Years) =	3.9
21) Avg. Dth/Part. Saved =	2402.1
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	75
24) Total Annual Dth Saved =	180,160
25) Incentive/Participant =	$8,402.29

Cost Summary	**2020**
Utility Cost per Participant =	$14,510.98
Cost per Participant per Dth =	$39.80
Lifetime Energy Reduction (Dth)	703,932
Societal Cost per Dth	$4.62

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($2,125,476)	0.65
Utility Cost Test	$2,861,876	3.63
Societal Test	$1,968,302	1.60
Participant Test	$126,122	1.02

RECOMMISSIONING **2020 ELECTRIC** **GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$222,731	$222,731	$222,731	$222,731
T & D	N/A	$137,889	$137,889	$137,889	$137,889
Marginal Energy	N/A	$1,573,866	$1,573,866	$1,573,866	$1,573,866
Environmental Externality	N/A	N/A	N/A	N/A	$541,204
Subtotal	N/A	$1,934,487	$1,934,487	$1,934,487	$2,475,690
Participant Benefits					
Bill Reduction - Electric	$2,729,770	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$451,293	N/A	N/A	$451,293	$451,293
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$246,171	N/A	N/A	$246,171	$246,171
Subtotal	$3,427,234	N/A	N/A	$697,464	$697,464
Total Benefits	$3,427,234	$1,934,487	$1,934,487	$2,631,951	$3,173,154
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$295,605	$295,605	$295,605	$295,605
Advertising & Promotion	N/A	$12,000	$12,000	$12,000	$12,000
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$451,293	$451,293	$451,293	$451,293
Other	N/A	$50,000	$50,000	$50,000	$50,000
Subtotal	N/A	$808,898	$808,898	$808,898	$808,898
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$2,729,770	N/A	N/A
Subtotal	N/A	N/A	$2,729,770	N/A	N/A
Participant Costs					
Incremental Capital Costs	$901,948	N/A	N/A	$901,948	$901,948
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$901,948	N/A	N/A	$901,948	$901,948
Total Costs	$901,948	$808,898	$3,538,668	$1,710,846	$1,710,846
Net Benefit (Cost)	$2,525,285	$1,125,589	($1,604,181)	$921,104	$1,462,308
Benefit/Cost Ratio	3.80	2.39	0.55	1.54	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	6.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	51.08%
Gross Load Factor at Customer	E	69.12%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,431

Program Summary per Participant		
Gross kW Saved at Customer	I	11.48 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	6.31 kW
Gross Annual kWh Saved at Customer	(B x E x I)	69,537 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	74,450 kWh

Program Summary All Participants		
Total Participants	J	89
Total Budget	K	**$808,898**
Gross kW Saved at Customer	(J x I)	1,022 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**561 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	6,188,761 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**6,626,083 kWh**
Societal Net Benefits	(J x I x H)	**$1,462,308**

Utility Program Cost per kWh Lifetime	**$0.0178**
Utility Program Cost per kW at Gen	**$1,441**

Conservation Improvement Program (CIP)

BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Recommissioning**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$52,576
Incentive Costs =	$150,553
16) Total Utility Project Costs =	$203,129
17) Direct Participant Costs ($/Part.) =	$7,014
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$1,294
Escalation Rate =	2.16%
20) Project Life (Years) =	6.7
21) Avg. Dth/Part. Saved =	429.8
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	49
24) Total Annual Dth Saved =	21,058
25) Incentive/Participant =	$3,072.52

Cost Summary	**2020**
Utility Cost per Participant =	$4,145.50
Cost per Participant per Dth =	$25.97
Lifetime Energy Reduction (Dth)	141,973
Societal Cost per Dth	$2.79

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($406,518)	0.66
Utility Cost Test	$571,518	3.81
Societal Test	$925,922	3.34
Participant Test	$1,164,043	4.39

SELF-DIRECT **2020 ELECTRIC** **GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$0	$0	$0	$0
T & D	N/A	$0	$0	$0	$0
Marginal Energy	N/A	$0	$0	$0	$0
Environmental Externality	N/A	N/A	N/A	N/A	$0
Subtotal	N/A	$0	$0	$0	$0
Participant Benefits					
Bill Reduction - Electric	$0	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Benefits	$0	$0	$0	$0	$0
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$27,505	$27,505	$27,505	$27,505
Advertising & Promotion	N/A	$442	$442	$442	$442
Measurement & Verification	N/A	$318	$318	$318	$318
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$47	$47	$47	$47
Subtotal	N/A	$28,312	$28,312	$28,312	$28,312
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$0	N/A	N/A
Subtotal	N/A	N/A	$0	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$28,312	$28,312	$28,312	$28,312
Net Benefit (Cost)	$0	($28,312)	($28,312)	($28,312)	($28,312)
Benefit/Cost Ratio	INF	-	-	-	-

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	0.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	0.00%
Gross Load Factor at Customer	E	#DIV/0!
Transmission Loss Factor (Energy)	F	0.000%
Transmission Loss Factor (Demand)	G	0.000%
Societal Net Benefit (Cost)	H	#DIV/0!

Program Summary per Participant		
Gross kW Saved at Customer	I	#DIV/0!
Net coincident kW Saved at Generator	(I x D) / (1 - G)	#DIV/0!
Gross Annual kWh Saved at Customer	(B x E x I)	#DIV/0!
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	#DIV/0!

Program Summary All Participants		
Total Participants	J	0
Total Budget	K	**$28,312**
Gross kW Saved at Customer	(J x I)	#DIV/0!
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**#DIV/0!**
Gross Annual kWh Saved at Customer	(B x E x I) x J	#DIV/0!
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**#DIV/0!**
Societal Net Benefits	(J x I x H)	**#DIV/0!**

Utility Program Cost per kWh Lifetime	**#DIV/0!**
Utility Program Cost per kW at Gen	**#DIV/0!**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Self-Direct**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$9,243
Incentive Costs =	$0
16) Total Utility Project Costs =	$9,243
17) Direct Participant Costs ($/Part.) =	$0
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	0.0
21) Avg. Dth/Part. Saved =	0.0
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	0
24) Total Annual Dth Saved =	0
25) Incentive/Participant =	$0.00

Cost Summary	**2020**
Utility Cost per Participant =	#DIV/0!
Cost per Participant per Dth =	#DIV/0!
Lifetime Energy Reduction (Dth)	0
Societal Cost per Dth	#DIV/0!

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($9,243)	0.00
Utility Cost Test	($9,243)	0.00
Societal Test	($9,243)	0.00
Participant Test	$0	#DIV/0!

TURN KEY **2020 ELECTRIC** **GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$653,661	$653,661	$653,661	$653,661
T & D	N/A	$410,996	$410,996	$410,996	$410,996
Marginal Energy	N/A	$3,175,184	$3,175,184	$3,175,184	$3,175,184
Environmental Externality	N/A	N/A	N/A	N/A	$1,058,814
Subtotal	N/A	$4,239,841	$4,239,841	$4,239,841	$5,298,655
Participant Benefits					
Bill Reduction - Electric	$7,541,395	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,069,506	N/A	N/A	$1,069,506	$1,069,506
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$613,866	N/A	N/A	$0	$0
Subtotal	$9,224,767	N/A	N/A	$1,069,506	$1,069,506
Total Benefits	$9,224,767	$4,239,841	$4,239,841	$5,309,347	$6,368,161
Costs					
Utility Project Costs					
Customer Services	N/A	$215,900	$215,900	$215,900	$215,900
Project Administration	N/A	$251,578	$251,578	$251,578	$251,578
Advertising & Promotion	N/A	$26,270	$26,270	$26,270	$26,270
Measurement & Verification	N/A	$8,000	$8,000	$8,000	$8,000
Rebates	N/A	$1,069,506	$1,069,506	$1,069,506	$1,069,506
Other	N/A	$109,000	$109,000	$109,000	$109,000
Subtotal	N/A	$1,680,254	$1,680,254	$1,680,254	$1,680,254
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$7,541,395	N/A	N/A
Subtotal	N/A	N/A	$7,541,395	N/A	N/A
Participant Costs					
Incremental Capital Costs	$2,493,416	N/A	N/A	$2,493,416	$2,493,416
Incremental O&M Costs	$0	N/A	N/A	$34,228	$34,228
Subtotal	$2,493,416	N/A	N/A	$2,527,644	$2,527,644
Total Costs	$2,493,416	$1,680,254	$9,221,649	$4,207,898	$4,207,898
Net Benefit (Cost)	$6,731,351	$2,559,587	($4,981,808)	$1,101,449	$2,160,263
Benefit/Cost Ratio	3.70	2.52	0.46	1.26	1.51

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	13.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	54.93%
Gross Load Factor at Customer	E	54.22%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,375

Program Summary per Participant		
Gross kW Saved at Customer	I	5.13 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	3.03 kW
Gross Annual kWh Saved at Customer	(B x E x I)	24,389 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	26,112 kWh

Program Summary All Participants		
Total Participants	J	306
Total Budget	K	**$1,680,254**
Gross kW Saved at Customer	(J x I)	1,571 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**928 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	7,462,940 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**7,990,299 kWh**
Societal Net Benefits	(J x I x H)	**$2,160,263**

Utility Program Cost per kWh Lifetime	**$0.0151**
Utility Program Cost per kW at Gen	**$1,810**

Conservation Improvement Program (CIP)

BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Turn Key**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$124,663
Incentive Costs =	$116,259
16) Total Utility Project Costs =	$240,922
17) Direct Participant Costs ($/Part.) =	$2,854
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	11.1
21) Avg. Dth/Part. Saved =	82.6
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	70
24) Total Annual Dth Saved =	5,785
25) Incentive/Participant =	$1,660.84

Cost Summary	2020
Utility Cost per Participant =	$3,441.74
Cost per Participant per Dth =	$76.17
Lifetime Energy Reduction (Dth)	64,229
Societal Cost per Dth	$5.05

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($326,394)	0.50
Utility Cost Test	$84,616	1.35
Societal Test	$116,147	1.36
Participant Test	$327,490	2.64

BUSINESS SEGMENT LOAD MANAGEMENT TOTAL — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$5,141,977	$5,141,977	$5,141,977	$5,141,977
T & D	N/A	$3,200,735	$3,200,735	$3,200,735	$3,200,735
Marginal Energy	N/A	$40,980	$40,980	$40,980	$40,980
Environmental Externality	N/A	N/A	N/A	N/A	$13,279
Subtotal	N/A	$8,383,692	$8,383,692	$8,383,692	$8,396,971
Participant Benefits					
Bill Reduction - Electric	$126,094	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$426,269	N/A	N/A	$426,269	$426,269
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$552,363	N/A	N/A	$426,269	$426,269
Total Benefits	$552,363	$8,383,692	$8,383,692	$8,809,961	$8,823,240
Costs					
Utility Project Costs					
Customer Services	N/A	$30,000	$30,000	$30,000	$30,000
Project Administration	N/A	$2,986,859	$2,986,859	$2,986,859	$2,986,859
Advertising & Promotion	N/A	$240,508	$240,508	$240,508	$240,508
Measurement & Verification	N/A	$175,000	$175,000	$175,000	$175,000
Rebates	N/A	$426,269	$426,269	$426,269	$426,269
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$3,858,636	$3,858,636	$3,858,636	$3,858,636
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$126,094	N/A	N/A
Subtotal	N/A	N/A	$126,094	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$3,858,636	$3,984,729	$3,858,636	$3,858,636
Net Benefit (Cost)	$552,363	$4,525,056	$4,398,963	$4,951,325	$4,964,604
Benefit/Cost Ratio	INF	2.17	2.10	2.28	2.29

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	4.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	52.31%
Gross Load Factor at Customer	E	0.07%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$123

Program Summary per Participant		
Gross kW Saved at Customer	I	40.62 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	22.85 kW
Gross Annual kWh Saved at Customer	(B x E x I)	249 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	267 kWh

Program Summary All Participants		
Total Participants	J	993
Total Budget	K	**$3,858,636**
Gross kW Saved at Customer	(J x I)	40,350 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**22,694 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	247,649 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**265,149 kWh**
Societal Net Benefits	(J x I x H)	**$4,964,604**

Utility Program Cost per kWh Lifetime	**$3.5688**
Utility Program Cost per kW at Gen	**$170**

ELECTRIC RATE SAVINGS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$1,370,516	$1,370,516	$1,370,516	$1,370,516
T & D	N/A	$845,089	$845,089	$845,089	$845,089
Marginal Energy	N/A	$33,111	$33,111	$33,111	$33,111
Environmental Externality	N/A	N/A	N/A	N/A	$10,785
Subtotal	N/A	$2,248,717	$2,248,717	$2,248,717	$2,259,502
Participant Benefits					
Bill Reduction - Electric	$101,088	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$101,088	N/A	N/A	$0	$0
Total Benefits	$101,088	$2,248,717	$2,248,717	$2,248,717	$2,259,502
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$544,208	$544,208	$544,208	$544,208
Advertising & Promotion	N/A	$15,508	$15,508	$15,508	$15,508
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$559,716	$559,716	$559,716	$559,716
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$101,088	N/A	N/A
Subtotal	N/A	N/A	$101,088	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$559,716	$660,804	$559,716	$559,716
Net Benefit (Cost)	$101,088	$1,689,001	$1,587,913	$1,689,001	$1,699,786
Benefit/Cost Ratio	INF	4.02	3.40	4.02	4.04

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	5.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	47.46%
Gross Load Factor at Customer	E	0.20%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$189

Program Summary per Participant		
Gross kW Saved at Customer	I	200.00 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	102.06 kW
Gross Annual kWh Saved at Customer	(B x E x I)	3,532 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	3,782 kWh

Program Summary All Participants		
Total Participants	J	45
Total Budget	K	**$559,716**
Gross kW Saved at Customer	(J x I)	9,000 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**4,593 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	158,942 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**170,174 kWh**
Societal Net Benefits	(J x I x H)	**$1,699,786**

Utility Program Cost per kWh Lifetime	**$0.6578**
Utility Program Cost per kW at Gen	**$122**

PEAK PARTNER REWARDS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$919,878	$919,878	$919,878	$919,878
T & D	N/A	$562,337	$562,337	$562,337	$562,337
Marginal Energy	N/A	$3,704	$3,704	$3,704	$3,704
Environmental Externality	N/A	N/A	N/A	N/A	$1,097
Subtotal	N/A	$1,485,919	$1,485,919	$1,485,919	$1,487,016
Participant Benefits					
Bill Reduction - Electric	$10,034	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$426,269	N/A	N/A	$426,269	$426,269
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$436,303	N/A	N/A	$426,269	$426,269
Total Benefits	$436,303	$1,485,919	$1,485,919	$1,912,188	$1,913,285
Costs					
Utility Project Costs					
Customer Services	N/A	$30,000	$30,000	$30,000	$30,000
Project Administration	N/A	$404,008	$404,008	$404,008	$404,008
Advertising & Promotion	N/A	$25,000	$25,000	$25,000	$25,000
Measurement & Verification	N/A	$25,000	$25,000	$25,000	$25,000
Rebates	N/A	$426,269	$426,269	$426,269	$426,269
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$910,277	$910,277	$910,277	$910,277
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$10,034	N/A	N/A
Subtotal	N/A	N/A	$10,034	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$910,277	$920,311	$910,277	$910,277
Net Benefit (Cost)	$436,303	$575,642	$565,608	$1,001,911	$1,003,008
Benefit/Cost Ratio	INF	1.63	1.61	2.10	2.10

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	1.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	100.00%
Gross Load Factor at Customer	E	0.07%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$76

Program Summary per Participant		
Gross kW Saved at Customer	I	885.29 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	951.93 kW
Gross Annual kWh Saved at Customer	(B x E x I)	5,312 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	5,687 kWh

Program Summary All Participants		
Total Participants	J	15
Total Budget	K	**$910,277**
Gross kW Saved at Customer	(J x I)	13,279 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**14,279 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	79,676 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**85,307 kWh**
Societal Net Benefits	(J x I x H)	**$1,003,008**

Utility Program Cost per kWh Lifetime	**$10.6706**
Utility Program Cost per kW at Gen	**$64**

SAVER'S SWITCH FOR BUSINESS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$2,851,583	$2,851,583	$2,851,583	$2,851,583
T & D	N/A	$1,793,308	$1,793,308	$1,793,308	$1,793,308
Marginal Energy	N/A	$4,164	$4,164	$4,164	$4,164
Environmental Externality	N/A	N/A	N/A	N/A	$1,396
Subtotal	N/A	$4,649,056	$4,649,056	$4,649,056	$4,650,453
Participant Benefits					
Bill Reduction - Electric	$14,972	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$14,972	N/A	N/A	$0	$0
Total Benefits	$14,972	$4,649,056	$4,649,056	$4,649,056	$4,650,453
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$2,038,642	$2,038,642	$2,038,642	$2,038,642
Advertising & Promotion	N/A	$200,000	$200,000	$200,000	$200,000
Measurement & Verification	N/A	$150,000	$150,000	$150,000	$150,000
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$2,388,642	$2,388,642	$2,388,642	$2,388,642
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$14,972	N/A	N/A
Subtotal	N/A	N/A	$14,972	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$2,388,642	$2,403,615	$2,388,642	$2,388,642
Net Benefit (Cost)	$14,972	$2,260,414	$2,245,442	$2,260,414	$2,261,810
Benefit/Cost Ratio	INF	1.95	1.93	1.95	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	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	19.67%
Gross Load Factor at Customer	E	0.01%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$125

Program Summary per Participant

Gross kW Saved at Customer	I	19.36 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	4.10 kW
Gross Annual kWh Saved at Customer	(B x E x I)	10 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	10 kWh

Program Summary All Participants

Total Participants	J	933
Total Budget	K	**$2,388,642**
Gross kW Saved at Customer	(J x I)	18,071 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**3,823 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	9,030 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**9,668 kWh**
Societal Net Benefits	(J x I x H)	**$2,261,810**

Utility Program Cost per kWh Lifetime	**$16.4703**
Utility Program Cost per kW at Gen	**$625**

RESIDENTIAL SEGMENT TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$23,917,960	$23,917,960	$23,917,960	$23,917,960
T & D	N/A	$14,953,869	$14,953,869	$14,953,869	$14,953,869
Marginal Energy	N/A	$29,689,979	$29,689,979	$29,689,979	$29,689,979
Environmental Externality	N/A	N/A	N/A	N/A	$9,333,832
Subtotal	N/A	$68,561,808	$68,561,808	$68,561,808	$77,895,640
Participant Benefits					
Bill Reduction - Electric	$87,611,432	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$11,956,338	N/A	N/A	$11,956,338	$11,956,338
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$236,136	N/A	N/A	$0	$0
Subtotal	$99,803,907	N/A	N/A	$11,956,338	$11,956,338
Total Benefits	$99,803,907	$68,561,808	$68,561,808	$80,518,146	$89,851,978
Costs					
Utility Project Costs					
Customer Services	N/A	$445,581	$445,581	$445,581	$445,581
Project Administration	N/A	$12,823,437	$12,823,437	$12,823,437	$12,823,437
Advertising & Promotion	N/A	$3,930,486	$3,930,486	$3,930,486	$3,930,486
Measurement & Verification	N/A	$544,004	$544,004	$544,004	$544,004
Rebates	N/A	$11,956,338	$11,956,338	$11,956,338	$11,956,338
Other	N/A	$3,500	$3,500	$3,500	$3,500
Subtotal	N/A	$29,703,346	$29,703,346	$29,703,346	$29,703,346
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$87,611,432	N/A	N/A
Subtotal	N/A	N/A	$87,611,432	N/A	N/A
Participant Costs					
Incremental Capital Costs	$20,296,476	N/A	N/A	$19,449,140	$19,449,140
Incremental O&M Costs	$0	N/A	N/A	$1,005,435	$1,005,435
Subtotal	$20,296,476	N/A	N/A	$20,454,575	$20,454,575
Total Costs	$20,296,476	$29,703,346	$117,314,778	$50,157,921	$50,157,921
Net Benefit (Cost)	$79,507,430	$38,858,462	($48,752,971)	$30,360,225	$39,694,057
Benefit/Cost Ratio	4.92	2.31	0.58	1.61	1.79

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	29.16%
Gross Load Factor at Customer	E	10.25%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$275

Program Summary per Participant

Gross kW Saved at Customer	I	0.11 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.04 kW
Gross Annual kWh Saved at Customer	(B x E x I)	103 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	112 kWh

Program Summary All Participants

Total Participants	J	1,262,520
Total Budget	K	**$29,703,346**
Gross kW Saved at Customer	(J x I)	144,353 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**46,161 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	129,652,922 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**141,542,491 kWh**
Societal Net Benefits	(J x I x H)	**$39,694,057**

Utility Program Cost per kWh Lifetime	**$0.0355**
Utility Program Cost per kW at Gen	**$643**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Residential Segment with Indirect Participants**

Input Data			2020 Extension
1) Retail Rate ($/Dth) =	$6.46	Administrative & Operating Costs =	$5,065,533
Escalation Rate =	4.00%	Incentive Costs =	$3,317,516
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000	16) Total Utility Project Costs =	$8,383,050
Escalation Rate =	3.22%	17) Direct Participant Costs ($/Part.) =	$21
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh	18) Participant Non-Energy Costs (Annual $/Part.) =	$0
3) Commodity Cost ($/Dth) =	$4.27	Escalation Rate =	2.16%
Escalation Rate =	4.00%	19) Participant Non-Energy Savings (Annual $/Part) =	$1
4) Demand Cost ($/Unit/Yr) =	$80.24	Escalation Rate =	2.16%
Escalation Rate =	4.00%	20) Project Life (Years) =	128.7
5) Peak Reduction Factor =	1.00%	21) Avg. Dth/Part. Saved =	0.5
6) Variable O&M ($/Dth) =	$0.0408	22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
Escalation Rate =	4.00%	22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022		
Escalation Rate =	3.22%	23) Number of Participants =	608,321
8) Non-Gas Fuel Loss Factor	5.28%	24) Total Annual Dth Saved =	310,621
9) Gas Environmental Damage Factor =	$0.380	25) Incentive/Participant =	$5.45
Escalation Rate =	2.16%		
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023		
Escalation Rate =	2.16%		
11) Participant Discount Rate =	7.42%		
12) Utility Discount Rate =	7.42%		
13) Societal Discount Rate =	2.55%		
14) General Input Data Year =	2016		
15d) Project Analysis Year 4 =	2020		

Cost Summary	2020		Extension NPV	Extension B/C
Utility Cost per Participant =	$13.78	Ratepayer Impact Measure Test	($16,443,392)	0.56
Cost per Participant per Dth =	$67.26			
		Utility Cost Test	$12,553,366	2.50
Lifetime Energy Reduction (Dth)	39,990,553			
		Societal Test	$12,356,935	2.20
Societal Cost per Dth	$0.26			
		Participant Test	$38,805,841	4.10

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Residential Segment Direct Participants Only**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$3,963,023
Incentive Costs =	$3,317,516
16) Total Utility Project Costs =	$7,280,539
17) Direct Participant Costs ($/Part.) =	$56
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$3
Escalation Rate =	2.16%
20) Project Life (Years) =	128.7
21) Avg. Dth/Part. Saved =	1.4
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	222,609
24) Total Annual Dth Saved =	310,621
25) Incentive/Participant =	$14.90

Cost Summary	**2020**
Utility Cost per Participant =	$32.71
Cost per Participant per Dth =	$63.71
Lifetime Energy Reduction (Dth)	39,990,553
Societal Cost per Dth	$0.06

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($15,340,882)	0.58
Utility Cost Test	$13,655,876	2.88
Societal Test	$3,317,516	2.35
Participant Test	$38,805,841	4.10

RESIDENTIAL SEGMENT ENERGY EFFICIENCY TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$10,101,386	$10,101,386	$10,101,386	$10,101,386
T & D	N/A	$6,312,924	$6,312,924	$6,312,924	$6,312,924
Marginal Energy	N/A	$29,029,759	$29,029,759	$29,029,759	$29,029,759
Environmental Externality	N/A	N/A	N/A	N/A	$9,169,928
Subtotal	N/A	$45,444,069	$45,444,069	$45,444,069	$54,613,996
Participant Benefits					
Bill Reduction - Electric	$86,105,363	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$10,152,938	N/A	N/A	$10,152,938	$10,152,938
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$236,136	N/A	N/A	$0	$0
Subtotal	$96,494,437	N/A	N/A	$10,152,938	$10,152,938
Total Benefits	$96,494,437	$45,444,069	$45,444,069	$55,597,007	$64,766,934
Costs					
Utility Project Costs					
Customer Services	N/A	$445,581	$445,581	$445,581	$445,581
Project Administration	N/A	$5,338,628	$5,338,628	$5,338,628	$5,338,628
Advertising & Promotion	N/A	$2,844,566	$2,844,566	$2,844,566	$2,844,566
Measurement & Verification	N/A	$344,004	$344,004	$344,004	$344,004
Rebates	N/A	$10,152,938	$10,152,938	$10,152,938	$10,152,938
Other	N/A	$3,500	$3,500	$3,500	$3,500
Subtotal	N/A	$19,129,217	$19,129,217	$19,129,217	$19,129,217
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$86,105,363	N/A	N/A
Subtotal	N/A	N/A	$86,105,363	N/A	N/A
Participant Costs					
Incremental Capital Costs	$18,401,756	N/A	N/A	$17,554,421	$17,554,421
Incremental O&M Costs	$0	N/A	N/A	$1,005,435	$1,005,435
Subtotal	$18,401,756	N/A	N/A	$18,559,855	$18,559,855
Total Costs	$18,401,756	$19,129,217	$105,234,580	$37,689,072	$37,689,072
Net Benefit (Cost)	$78,092,680	$26,314,852	($59,790,511)	$17,907,934	$27,077,862
Benefit/Cost Ratio	5.24	2.38	0.43	1.48	1.72

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	23.13%
Gross Load Factor at Customer	E	15.73%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$291

Program Summary per Participant

Gross kW Saved at Customer	I	0.20 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.05 kW
Gross Annual kWh Saved at Customer	(B x E x I)	273 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	298 kWh

Program Summary All Participants

Total Participants	J	470,501
Total Budget	K	**$19,129,217**
Gross kW Saved at Customer	(J x I)	93,131 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**23,619 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	128,291,484 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**140,056,205 kWh**
Societal Net Benefits	(J x I x H)	**$27,077,862**

Utility Program Cost per kWh Lifetime	**$0.0233**
Utility Program Cost per kW at Gen	**$810**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Residential Segment Energy Efficiency Total**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$3,928,643
Incentive Costs =	$3,242,916
16) Total Utility Project Costs =	$7,171,559
17) Direct Participant Costs ($/Part.) =	$56
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$3
Escalation Rate =	2.16%
20) Project Life (Years) =	118.7
21) Avg. Dth/Part. Saved =	1.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	216,459
24) Total Annual Dth Saved =	267,669
25) Incentive/Participant =	$14.98

Cost Summary	**2020**
Utility Cost per Participant =	$33.13
Cost per Participant per Dth =	$72.31
Lifetime Energy Reduction (Dth)	31,784,102
Societal Cost per Dth	$0.50

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($14,373,092)	0.57
Utility Cost Test	$11,534,134	2.61
Societal Test	$19,432,054	2.22
Participant Test	$35,262,481	3.89

EFFICIENT NEW HOME CONSTRUCTION — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$891,374	$891,374	$891,374	$891,374
T & D	N/A	$565,484	$565,484	$565,484	$565,484
Marginal Energy	N/A	$464,202	$464,202	$464,202	$464,202
Environmental Externality	N/A	N/A	N/A	N/A	$168,838
Subtotal	N/A	$1,921,061	$1,921,061	$1,921,061	$2,089,898
Participant Benefits					
Bill Reduction - Electric	$1,838,511	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$429,912	N/A	N/A	$429,912	$429,912
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$52,902	N/A	N/A	$52,902	$52,902
Subtotal	$2,321,325	N/A	N/A	$482,814	$482,814
Total Benefits	$2,321,325	$1,921,061	$1,921,061	$2,403,875	$2,572,712
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$21,835	$21,835	$21,835	$21,835
Advertising & Promotion	N/A	$50,605	$50,605	$50,605	$50,605
Measurement & Verification	N/A	$250,000	$250,000	$250,000	$250,000
Rebates	N/A	$429,912	$429,912	$429,912	$429,912
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$752,352	$752,352	$752,352	$752,352
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,838,511	N/A	N/A
Subtotal	N/A	N/A	$1,838,511	N/A	N/A
Participant Costs					
Incremental Capital Costs	$764,234	N/A	N/A	$764,234	$764,234
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$764,234	N/A	N/A	$764,234	$764,234
Total Costs	$764,234	$752,352	$2,590,863	$1,516,586	$1,516,586
Net Benefit (Cost)	$1,557,091	$1,168,709	($669,802)	$887,289	$1,056,127
Benefit/Cost Ratio	3.04	2.55	0.74	1.59	1.70

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	19.2 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	79.43%
Gross Load Factor at Customer	E	9.40%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$938

Program Summary per Participant		
Gross kW Saved at Customer	I	0.51 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.44 kW
Gross Annual kWh Saved at Customer	(B x E x I)	417 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	455 kWh

Program Summary All Participants		
Total Participants	J	2,226
Total Budget	K	**$752,352**
Gross kW Saved at Customer	(J x I)	1,126 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**981 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	927,350 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**1,012,391 kWh**
Societal Net Benefits	(J x I x H)	**$1,056,127**

Utility Program Cost per kWh Lifetime	**$0.0387**
Utility Program Cost per kW at Gen	**$767**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Efficient New Home Construction**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$1,081,194
Incentive Costs =	$492,367
16) Total Utility Project Costs =	$1,573,561
17) Direct Participant Costs ($/Part.) =	$2,112
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$3
Escalation Rate =	2.16%
20) Project Life (Years) =	20.0
21) Avg. Dth/Part. Saved =	31.8
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	960
24) Total Annual Dth Saved =	30,514
25) Incentive/Participant =	$512.88

Cost Summary	**2020**
Utility Cost per Participant =	$1,639.13
Cost per Participant per Dth =	$118.03
Lifetime Energy Reduction (Dth)	609,936
Societal Cost per Dth	$5.10

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($2,624,658)	0.51
Utility Cost Test	$1,156,621	1.74
Societal Test	$1,351,385	1.43
Participant Test	$4,291,647	3.12

ENERGY EFFICIENT SHOWERHEAD — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$50,090	$50,090	$50,090	$50,090
T & D	N/A	$31,203	$31,203	$31,203	$31,203
Marginal Energy	N/A	$417,613	$417,613	$417,613	$417,613
Environmental Externality	N/A	N/A	N/A	N/A	$119,960
Subtotal	N/A	$498,906	$498,906	$498,906	$618,866
Participant Benefits					
Bill Reduction - Electric	$1,175,499	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$16,094	N/A	N/A	$16,094	$16,094
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$527,168	N/A	N/A	$527,168	$527,168
Subtotal	$1,718,761	N/A	N/A	$543,262	$543,262
Total Benefits	$1,718,761	$498,906	$498,906	$1,042,167	$1,162,127
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$20,169	$20,169	$20,169	$20,169
Advertising & Promotion	N/A	$5,038	$5,038	$5,038	$5,038
Measurement & Verification	N/A	$500	$500	$500	$500
Rebates	N/A	$16,094	$16,094	$16,094	$16,094
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$41,801	$41,801	$41,801	$41,801
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,175,499	N/A	N/A
Subtotal	N/A	N/A	$1,175,499	N/A	N/A
Participant Costs					
Incremental Capital Costs	$20,021	N/A	N/A	$20,021	$20,021
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$20,021	N/A	N/A	$20,021	$20,021
Total Costs	$20,021	$41,801	$1,217,300	$61,822	$61,822
Net Benefit (Cost)	$1,698,740	$457,105	($718,395)	$980,345	$1,100,305
Benefit/Cost Ratio	85.85	11.94	0.41	16.86	18.80

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	73.53%
Gross Load Factor at Customer	E	100.00%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$9,633

Program Summary per Participant		
Gross kW Saved at Customer	I	0.06 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.05 kW
Gross Annual kWh Saved at Customer	(B x E x I)	521 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	569 kWh

Program Summary All Participants		
Total Participants	J	1,920
Total Budget	K	**$41,801**
Gross kW Saved at Customer	(J x I)	114 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**92 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	1,000,599 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**1,092,357 kWh**
Societal Net Benefits	(J x I x H)	**$1,100,305**

Utility Program Cost per kWh Lifetime	**$0.0038**
Utility Program Cost per kW at Gen	**$454**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Energy Efficient Showerhead**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$146,942
Incentive Costs =	$146,824
16) Total Utility Project Costs =	$293,766
17) Direct Participant Costs ($/Part.) =	$10
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$34
Escalation Rate =	2.16%
20) Project Life (Years) =	10.0
21) Avg. Dth/Part. Saved =	2.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	14,080
24) Total Annual Dth Saved =	31,295
25) Incentive/Participant =	$10.43

Cost Summary	2020
Utility Cost per Participant =	$20.86
Cost per Participant per Dth =	$14.08
Lifetime Energy Reduction (Dth)	312,954
Societal Cost per Dth	$0.94

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($919,512)	0.64
Utility Cost Test	$1,331,584	5.53
Societal Test	$6,422,239	22.86
Participant Test	$7,356,998	51.11

ENERGY FEEDBACK RESIDENTIAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$759,490	$759,490	$759,490	$759,490
T & D	N/A	$464,289	$464,289	$464,289	$464,289
Marginal Energy	N/A	$3,417,976	$3,417,976	$3,417,976	$3,417,976
Environmental Externality	N/A	N/A	N/A	N/A	$690,838
Subtotal	N/A	$4,641,755	$4,641,755	$4,641,755	$5,332,593
Participant Benefits					
Bill Reduction - Electric	$5,731,163	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$5,731,163	N/A	N/A	$0	$0
Total Benefits	$5,731,163	$4,641,755	$4,641,755	$4,641,755	$5,332,593
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$2,146,030	$2,146,030	$2,146,030	$2,146,030
Advertising & Promotion	N/A	$8,645	$8,645	$8,645	$8,645
Measurement & Verification	N/A	$25,000	$25,000	$25,000	$25,000
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$2,179,675	$2,179,675	$2,179,675	$2,179,675
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$5,731,163	N/A	N/A
Subtotal	N/A	N/A	$5,731,163	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$2,179,675	$7,910,838	$2,179,675	$2,179,675
Net Benefit (Cost)	$5,731,163	$2,462,080	($3,269,083)	$2,462,080	$3,152,918
Benefit/Cost Ratio	INF	2.13	0.59	2.13	2.45

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	96.39%
Gross Load Factor at Customer	E	47.03%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$848

Program Summary per Participant

Gross kW Saved at Customer	I	0.01 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.02 kW
Gross Annual kWh Saved at Customer	(B x E x I)	60 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	65 kWh

Program Summary All Participants

Total Participants	J	256,320
Total Budget	K	**$2,179,675**
Gross kW Saved at Customer	(J x I)	3,718 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**3,930 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	15,317,788 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**16,722,476 kWh**
Societal Net Benefits	(J x I x H)	**$3,152,918**

Utility Program Cost per kWh Lifetime	**$0.0434**
Utility Program Cost per kW at Gen	**$555**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Energy Feedback Residential**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$330,672
Incentive Costs =	$0
16) Total Utility Project Costs =	$330,672
17) Direct Participant Costs ($/Part.) =	$0
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	3.0
21) Avg. Dth/Part. Saved =	0.1
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	170,898
24) Total Annual Dth Saved =	24,762
25) Incentive/Participant =	$0.00

Cost Summary	2020
Utility Cost per Participant =	$1.93
Cost per Participant per Dth =	$13.35
Lifetime Energy Reduction (Dth)	74,287
Societal Cost per Dth	$4.45

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($501,748)	0.47
Utility Cost Test	$113,692	1.34
Societal Test	$144,440	1.44
Participant Test	$615,440	#DIV/0!

RESIDENTIAL HEATING — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$1,167,805	$1,167,805	$1,167,805	$1,167,805
T & D	N/A	$738,321	$738,321	$738,321	$738,321
Marginal Energy	N/A	$3,188,453	$3,188,453	$3,188,453	$3,188,453
Environmental Externality	N/A	N/A	N/A	N/A	$1,158,504
Subtotal	N/A	$5,094,579	$5,094,579	$5,094,579	$6,253,083
Participant Benefits					
Bill Reduction - Electric	$12,481,917	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,000,000	N/A	N/A	$1,000,000	$1,000,000
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$13,481,917	N/A	N/A	$1,000,000	$1,000,000
Total Benefits	$13,481,917	$5,094,579	$5,094,579	$6,094,579	$7,253,083
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$78,475	$78,475	$78,475	$78,475
Advertising & Promotion	N/A	$141,690	$141,690	$141,690	$141,690
Measurement & Verification	N/A	$13,537	$13,537	$13,537	$13,537
Rebates	N/A	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$1,233,702	$1,233,702	$1,233,702	$1,233,702
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$12,481,917	N/A	N/A
Subtotal	N/A	N/A	$12,481,917	N/A	N/A
Participant Costs					
Incremental Capital Costs	$2,120,000	N/A	N/A	$2,120,000	$2,120,000
Incremental O&M Costs	$1,771,708	N/A	N/A	$1,771,708	$1,771,708
Subtotal	$3,891,708	N/A	N/A	$3,891,708	$3,891,708
Total Costs	$3,891,708	$1,233,702	$13,715,619	$5,125,410	$5,125,410
Net Benefit (Cost)	$9,590,209	$3,860,877	($8,621,039)	$969,170	$2,127,673
Benefit/Cost Ratio	3.46	4.13	0.37	1.19	1.42

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	17.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	66.03%
Gross Load Factor at Customer	E	39.50%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$1,116

Program Summary per Participant		
Gross kW Saved at Customer	I	0.19 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.14 kW
Gross Annual kWh Saved at Customer	(B x E x I)	659 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	720 kWh

Program Summary All Participants		
Total Participants	J	10,000
Total Budget	K	**$1,233,702**
Gross kW Saved at Customer	(J x I)	1,906 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**1,380 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	6,594,400 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**7,199,127 kWh**
Societal Net Benefits	(J x I x H)	**$2,127,673**

Utility Program Cost per kWh Lifetime	**$0.0096**
Utility Program Cost per kW at Gen	**$894**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Residential Heating**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$386,713
Incentive Costs =	$2,130,700
16) Total Utility Project Costs =	$2,517,413
17) Direct Participant Costs ($/Part.) =	$590
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	18.1
21) Avg. Dth/Part. Saved =	9.8
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	12,272
24) Total Annual Dth Saved =	120,000
25) Incentive/Participant =	$173.62

Cost Summary	**2020**
Utility Cost per Participant =	$205.13
Cost per Participant per Dth =	$81.27
Lifetime Energy Reduction (Dth)	2,171,608
Societal Cost per Dth	$3.51

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($6,363,810)	0.61
Utility Cost Test	$7,473,450	3.97
Societal Test	$7,935,461	2.04
Participant Test	$15,237,022	3.11

HOME ENERGY SQUAD — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$186,931	$186,931	$186,931	$186,931
T & D	N/A	$115,761	$115,761	$115,761	$115,761
Marginal Energy	N/A	$782,942	$782,942	$782,942	$782,942
Environmental Externality	N/A	N/A	N/A	N/A	$277,597
Subtotal	N/A	$1,085,634	$1,085,634	$1,085,634	$1,363,231
Participant Benefits					
Bill Reduction - Electric	$2,556,473	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$243,084	N/A	N/A	$34,370	$34,370
Subtotal	$2,799,557	N/A	N/A	$34,370	$34,370
Total Benefits	$2,799,557	$1,085,634	$1,085,634	$1,120,004	$1,397,601
Costs					
Utility Project Costs					
Customer Services	N/A	$438,581	$438,581	$438,581	$438,581
Project Administration	N/A	$180,544	$180,544	$180,544	$180,544
Advertising & Promotion	N/A	$270,420	$270,420	$270,420	$270,420
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$889,545	$889,545	$889,545	$889,545
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$2,556,473	N/A	N/A
Subtotal	N/A	N/A	$2,556,473	N/A	N/A
Participant Costs					
Incremental Capital Costs	$202,600	N/A	N/A	$202,600	$202,600
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$202,600	N/A	N/A	$202,600	$202,600
Total Costs	$202,600	$889,545	$3,446,018	$1,092,145	$1,092,145
Net Benefit (Cost)	$2,596,957	$196,089	($2,360,383)	$27,859	$305,456
Benefit/Cost Ratio	13.82	1.22	0.32	1.03	1.28

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	5.6 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	12.07%
Gross Load Factor at Customer	E	11.15%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$77

Program Summary per Participant		
Gross kW Saved at Customer	I	0.74 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.10 kW
Gross Annual kWh Saved at Customer	(B x E x I)	723 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	789 kWh

Program Summary All Participants		
Total Participants	J	5,371
Total Budget	K	**$889,545**
Gross kW Saved at Customer	(J x I)	3,975 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**526 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	3,883,008 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**4,239,092 kWh**
Societal Net Benefits	(J x I x H)	**$305,456**

Utility Program Cost per kWh Lifetime	**$0.0376**
Utility Program Cost per kW at Gen	**$1,691**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Home Energy Squad**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$1,306,189
Incentive Costs =	$0
16) Total Utility Project Costs =	$1,306,189
17) Direct Participant Costs ($/Part.) =	$64
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$39
Escalation Rate =	2.16%
20) Project Life (Years) =	9.7
21) Avg. Dth/Part. Saved =	9.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	2,200
24) Total Annual Dth Saved =	20,261
25) Incentive/Participant =	$0.00

Cost Summary	**2020**
Utility Cost per Participant =	$593.72
Cost per Participant per Dth =	$71.47
Lifetime Energy Reduction (Dth)	196,578
Societal Cost per Dth	$7.37

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($1,701,041)	0.38
Utility Cost Test	($280,578)	0.79
Societal Test	$694,708	1.48
Participant Test	$2,402,451	17.94

HOME LIGHTING — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$2,271,736	$2,271,736	$2,271,736	$2,271,736
T & D	N/A	$1,399,165	$1,399,165	$1,399,165	$1,399,165
Marginal Energy	N/A	$14,246,579	$14,246,579	$14,246,579	$14,246,579
Environmental Externality	N/A	N/A	N/A	N/A	$4,978,490
Subtotal	N/A	$17,917,480	$17,917,480	$17,917,480	$22,895,969
Participant Benefits					
Bill Reduction - Electric	$45,184,990	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$4,166,400	N/A	N/A	$4,166,400	$4,166,400
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$49,351,390	N/A	N/A	$4,166,400	$4,166,400
Total Benefits	$49,351,390	$17,917,480	$17,917,480	$22,083,880	$27,062,369
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$1,401,206	$1,401,206	$1,401,206	$1,401,206
Advertising & Promotion	N/A	$1,894,040	$1,894,040	$1,894,040	$1,894,040
Measurement & Verification	N/A	$10,000	$10,000	$10,000	$10,000
Rebates	N/A	$4,166,400	$4,166,400	$4,166,400	$4,166,400
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$7,471,646	$7,471,646	$7,471,646	$7,471,646
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$45,184,990	N/A	N/A
Subtotal	N/A	N/A	$45,184,990	N/A	N/A
Participant Costs					
Incremental Capital Costs	$7,351,126	N/A	N/A	$7,351,126	$7,351,126
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$7,351,126	N/A	N/A	$7,351,126	$7,351,126
Total Costs	$7,351,126	$7,471,646	$52,656,636	$14,822,772	$14,822,772
Net Benefit (Cost)	$42,000,264	$10,445,834	($34,739,157)	$7,261,108	$12,239,597
Benefit/Cost Ratio	6.71	2.40	0.34	1.49	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	4.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	12.45%
Gross Load Factor at Customer	E	13.62%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$171

Program Summary per Participant		
Gross kW Saved at Customer	I	0.49 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.07 kW
Gross Annual kWh Saved at Customer	(B x E x I)	585 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	639 kWh

Program Summary All Participants		
Total Participants	J	146,067
Total Budget	K	**$7,471,646**
Gross kW Saved at Customer	(J x I)	71,614 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**9,773 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	85,464,271 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**93,301,606 kWh**
Societal Net Benefits	(J x I x H)	**$12,239,597**

Utility Program Cost per kWh Lifetime	**$0.0181**
Utility Program Cost per kW at Gen	**$765**

INSULATION REBATE — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$134,631	$134,631	$134,631	$134,631
T & D	N/A	$85,159	$85,159	$85,159	$85,159
Marginal Energy	N/A	$1,241,134	$1,241,134	$1,241,134	$1,241,134
Environmental Externality	N/A	N/A	N/A	N/A	$288,379
Subtotal	N/A	$1,460,925	$1,460,925	$1,460,925	$1,749,303
Participant Benefits					
Bill Reduction - Electric	$2,915,287	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$206,972	N/A	N/A	$206,972	$206,972
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$1,032,856	N/A	N/A	$0	$0
Subtotal	$4,155,115	N/A	N/A	$206,972	$206,972
Total Benefits	$4,155,115	$1,460,925	$1,460,925	$1,667,897	$1,956,275
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$27,800	$27,800	$27,800	$27,800
Advertising & Promotion	N/A	$9,800	$9,800	$9,800	$9,800
Measurement & Verification	N/A	$4,000	$4,000	$4,000	$4,000
Rebates	N/A	$206,972	$206,972	$206,972	$206,972
Other	N/A	$3,500	$3,500	$3,500	$3,500
Subtotal	N/A	$252,072	$252,072	$252,072	$252,072
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$2,915,287	N/A	N/A
Subtotal	N/A	N/A	$2,915,287	N/A	N/A
Participant Costs					
Incremental Capital Costs	$1,612,667	N/A	N/A	$765,331	$765,331
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$1,612,667	N/A	N/A	$765,331	$765,331
Total Costs	$1,612,667	$252,072	$3,167,359	$1,017,403	$1,017,403
Net Benefit (Cost)	$2,542,448	$1,208,853	($1,706,434)	$650,494	$938,872
Benefit/Cost Ratio	2.58	5.80	0.46	1.64	1.92

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	19.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	12.38%
Gross Load Factor at Customer	E	15.07%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$776

Program Summary per Participant		
Gross kW Saved at Customer	I	1.95 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.27 kW
Gross Annual kWh Saved at Customer	(B x E x I)	2,580 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	2,817 kWh

Program Summary All Participants		
Total Participants	J	619
Total Budget	K	**$252,072**
Gross kW Saved at Customer	(J x I)	1,210 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**164 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	1,597,125 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**1,743,586 kWh**
Societal Net Benefits	(J x I x H)	**$938,872**

Utility Program Cost per kWh Lifetime	**$0.0076**
Utility Program Cost per kW at Gen	**$1,534**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Insulation Rebate**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$100,625
Incentive Costs =	$229,810
16) Total Utility Project Costs =	$330,435
17) Direct Participant Costs ($/Part.) =	$2,150
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	18.0
21) Avg. Dth/Part. Saved =	23.3
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	773
24) Total Annual Dth Saved =	17,985
25) Incentive/Participant =	$297.30

Cost Summary	**2020**
Utility Cost per Participant =	$427.47
Cost per Participant per Dth =	$110.77
Lifetime Energy Reduction (Dth)	324,365
Societal Cost per Dth	$4.96

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($899,124)	0.62
Utility Cost Test	$1,146,712	4.47
Societal Test	$727,300	1.45
Participant Test	$1,772,649	2.07

REFRIGERATOR RECYCLING — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$391,043	$391,043	$391,043	$391,043
T & D	N/A	$242,396	$242,396	$242,396	$242,396
Marginal Energy	N/A	$2,081,196	$2,081,196	$2,081,196	$2,081,196
Environmental Externality	N/A	N/A	N/A	N/A	$666,178
Subtotal	N/A	$2,714,636	$2,714,636	$2,714,636	$3,380,814
Participant Benefits					
Bill Reduction - Electric	$6,314,704	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$241,500	N/A	N/A	$241,500	$241,500
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$6,556,204	N/A	N/A	$241,500	$241,500
Total Benefits	$6,556,204	$2,714,636	$2,714,636	$2,956,136	$3,622,314
Costs					
Utility Project Costs					
Customer Services	N/A	$7,000	$7,000	$7,000	$7,000
Project Administration	N/A	$517,490	$517,490	$517,490	$517,490
Advertising & Promotion	N/A	$206,944	$206,944	$206,944	$206,944
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$241,500	$241,500	$241,500	$241,500
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$972,934	$972,934	$972,934	$972,934
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$6,314,704	N/A	N/A
Subtotal	N/A	N/A	$6,314,704	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$972,934	$7,287,638	$972,934	$972,934
Net Benefit (Cost)	$6,556,204	$1,741,702	($4,573,002)	$1,983,202	$2,649,380
Benefit/Cost Ratio	INF	2.79	0.37	3.04	3.72

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	8.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	65.98%
Gross Load Factor at Customer	E	60.34%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$2,039

Program Summary per Participant		
Gross kW Saved at Customer	I	0.18 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.13 kW
Gross Annual kWh Saved at Customer	(B x E x I)	967 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	1,056 kWh

Program Summary All Participants		
Total Participants	J	7,100
Total Budget	K	**$972,934**
Gross kW Saved at Customer	(J x I)	1,299 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**940 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	6,867,053 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**7,496,782 kWh**
Societal Net Benefits	(J x I x H)	**$2,649,380**

Utility Program Cost per kWh Lifetime	**$0.0160**
Utility Program Cost per kW at Gen	**$1,035**

RESIDENTIAL COOLING — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$4,047,400	$4,047,400	$4,047,400	$4,047,400
T & D	N/A	$2,545,746	$2,545,746	$2,545,746	$2,545,746
Marginal Energy	N/A	$2,491,961	$2,491,961	$2,491,961	$2,491,961
Environmental Externality	N/A	N/A	N/A	N/A	$570,401
Subtotal	N/A	$9,085,108	$9,085,108	$9,085,108	$9,655,509
Participant Benefits					
Bill Reduction - Electric	$5,555,311	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$3,552,450	N/A	N/A	$3,552,450	$3,552,450
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$9,107,761	N/A	N/A	$3,552,450	$3,552,450
Total Benefits	$9,107,761	$9,085,108	$9,085,108	$12,637,558	$13,207,959
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$364,869	$364,869	$364,869	$364,869
Advertising & Promotion	N/A	$212,074	$212,074	$212,074	$212,074
Measurement & Verification	N/A	$9,967	$9,967	$9,967	$9,967
Rebates	N/A	$3,552,450	$3,552,450	$3,552,450	$3,552,450
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$4,139,360	$4,139,360	$4,139,360	$4,139,360
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$5,555,311	N/A	N/A
Subtotal	N/A	N/A	$5,555,311	N/A	N/A
Participant Costs					
Incremental Capital Costs	$5,723,187	N/A	N/A	$5,723,187	$5,723,187
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$5,723,187	N/A	N/A	$5,723,187	$5,723,187
Total Costs	$5,723,187	$4,139,360	$9,694,671	$9,862,547	$9,862,547
Net Benefit (Cost)	$3,384,574	$4,945,748	($609,563)	$2,775,011	$3,345,412
Benefit/Cost Ratio	1.59	2.19	0.94	1.28	1.34

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	15.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	90.00%
Gross Load Factor at Customer	E	7.50%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$611

Program Summary per Participant		
Gross kW Saved at Customer	I	0.47 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.47 kW
Gross Annual kWh Saved at Customer	(B x E x I)	311 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	339 kWh

Program Summary All Participants		
Total Participants	J	11,582
Total Budget	K	**$4,139,360**
Gross kW Saved at Customer	(J x I)	5,479 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**5,406 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	3,600,307 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**3,930,467 kWh**
Societal Net Benefits	(J x I x H)	**$3,345,412**

Utility Program Cost per kWh Lifetime	**$0.0696**
Utility Program Cost per kW at Gen	**$766**

SCHOOL EDUCATION KITS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$81,848	$81,848	$81,848	$81,848
T & D	N/A	$50,586	$50,586	$50,586	$50,586
Marginal Energy	N/A	$542,481	$542,481	$542,481	$542,481
Environmental Externality	N/A	N/A	N/A	N/A	$196,140
Subtotal	N/A	$674,915	$674,915	$674,915	$871,055
Participant Benefits					
Bill Reduction - Electric	$1,814,742	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$472,775	N/A	N/A	$472,775	$472,775
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$190,694	N/A	N/A	$190,694	$190,694
Subtotal	$2,478,210	N/A	N/A	$663,469	$663,469
Total Benefits	$2,478,210	$674,915	$674,915	$1,338,383	$1,534,523
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$504,260	$504,260	$504,260	$504,260
Advertising & Promotion	N/A	$5,895	$5,895	$5,895	$5,895
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$472,775	$472,775	$472,775	$472,775
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$982,930	$982,930	$982,930	$982,930
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,814,742	N/A	N/A
Subtotal	N/A	N/A	$1,814,742	N/A	N/A
Participant Costs					
Incremental Capital Costs	$472,775	N/A	N/A	$472,775	$472,775
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$472,775	N/A	N/A	$472,775	$472,775
Total Costs	$472,775	$982,930	$2,797,672	$1,455,705	$1,455,705
Net Benefit (Cost)	$2,005,435	($308,015)	($2,122,757)	($117,322)	$78,818
Benefit/Cost Ratio	5.24	0.69	0.24	0.92	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	5.8 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	9.12%
Gross Load Factor at Customer	E	11.89%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$32

Program Summary per Participant

Gross kW Saved at Customer	I	0.09 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.01 kW
Gross Annual kWh Saved at Customer	(B x E x I)	89 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	97 kWh

Program Summary All Participants

Total Participants	J	29,000
Total Budget	K	**$982,930**
Gross kW Saved at Customer	(J x I)	2,466 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**246 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	2,567,987 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**2,803,479 kWh**
Societal Net Benefits	(J x I x H)	**$78,818**

Utility Program Cost per kWh Lifetime	**$0.0605**
Utility Program Cost per kW at Gen	**$3,988**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **School Education Kits**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$262,015
Incentive Costs =	$64,350
16) Total Utility Project Costs =	$326,365
17) Direct Participant Costs ($/Part.) =	$5
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$12
Escalation Rate =	2.16%
20) Project Life (Years) =	10.0
21) Avg. Dth/Part. Saved =	0.8
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	14,000
24) Total Annual Dth Saved =	11,391
25) Incentive/Participant =	$4.60

Cost Summary	**2020**
Utility Cost per Participant =	$23.31
Cost per Participant per Dth =	$34.30
Lifetime Energy Reduction (Dth)	113,912
Societal Cost per Dth	$2.87

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($554,130)	0.52
Utility Cost Test	$265,245	1.81
Societal Test	$2,107,824	7.46
Participant Test	$2,667,504	42.45

WATER HEATER REBATE — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$21,913	$21,913	$21,913	$21,913
T & D	N/A	$13,650	$13,650	$13,650	$13,650
Marginal Energy	N/A	$78,769	$78,769	$78,769	$78,769
Environmental Externality	N/A	N/A	N/A	N/A	$31,662
Subtotal	N/A	$114,332	$114,332	$114,332	$145,993
Participant Benefits					
Bill Reduction - Electric	$310,253	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$29,700	N/A	N/A	$29,700	$29,700
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$339,953	N/A	N/A	$29,700	$29,700
Total Benefits	$339,953	$114,332	$114,332	$144,032	$175,693
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$30,000	$30,000	$30,000	$30,000
Advertising & Promotion	N/A	$25,000	$25,000	$25,000	$25,000
Measurement & Verification	N/A	$1,000	$1,000	$1,000	$1,000
Rebates	N/A	$29,700	$29,700	$29,700	$29,700
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$85,700	$85,700	$85,700	$85,700
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$310,253	N/A	N/A
Subtotal	N/A	N/A	$310,253	N/A	N/A
Participant Costs					
Incremental Capital Costs	$40,356	N/A	N/A	$40,356	$40,356
Incremental O&M Costs	$29,635	N/A	N/A	$29,635	$29,635
Subtotal	$69,991	N/A	N/A	$69,991	$69,991
Total Costs	$69,991	$85,700	$395,953	$155,691	$155,691
Net Benefit (Cost)	$269,962	$28,632	($281,621)	($11,659)	$20,002
Benefit/Cost Ratio	4.86	1.33	0.29	0.93	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	10.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	100.00%
Gross Load Factor at Customer	E	82.06%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$544

Program Summary per Participant		
Gross kW Saved at Customer	I	0.56 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.61 kW
Gross Annual kWh Saved at Customer	(B x E x I)	4,001 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	4,368 kWh

Program Summary All Participants		
Total Participants	J	66
Total Budget	K	**$85,700**
Gross kW Saved at Customer	(J x I)	37 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**40 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	264,092 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**288,310 kWh**
Societal Net Benefits	(J x I x H)	**$20,002**
Utility Program Cost per kWh Lifetime		**$0.0297**
Utility Program Cost per kW at Gen		**$2,127**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Water Heater Rebate**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$106,994
Incentive Costs =	$95,550
16) Total Utility Project Costs =	$202,544
17) Direct Participant Costs ($/Part.) =	$352
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	14.5
21) Avg. Dth/Part. Saved =	3.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	1,071
24) Total Annual Dth Saved =	3,461
25) Incentive/Participant =	$89.22

Cost Summary	**2020**
Utility Cost per Participant =	$189.12
Cost per Participant per Dth =	$167.49
Lifetime Energy Reduction (Dth)	50,175
Societal Cost per Dth	$9.65

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($295,632)	0.45
Utility Cost Test	$39,247	1.19
Societal Test	($131,975)	0.73
Participant Test	$178,167	1.47

WHOLE HOME EFFICIENCY — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$98,804	$98,804	$98,804	$98,804
T & D	N/A	$62,210	$62,210	$62,210	$62,210
Marginal Energy	N/A	$82,697	$82,697	$82,697	$82,697
Environmental Externality	N/A	N/A	N/A	N/A	$25,452
Subtotal	N/A	$243,711	$243,711	$243,711	$269,163
Participant Benefits					
Bill Reduction - Electric	$251,109	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$37,135	N/A	N/A	$37,135	$37,135
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$288,244	N/A	N/A	$37,135	$37,135
Total Benefits	$288,244	$243,711	$243,711	$280,846	$306,298
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$45,950	$45,950	$45,950	$45,950
Advertising & Promotion	N/A	$14,415	$14,415	$14,415	$14,415
Measurement & Verification	N/A	$30,000	$30,000	$30,000	$30,000
Rebates	N/A	$37,135	$37,135	$37,135	$37,135
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$127,500	$127,500	$127,500	$127,500
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$251,109	N/A	N/A
Subtotal	N/A	N/A	$251,109	N/A	N/A
Participant Costs					
Incremental Capital Costs	$111,563	N/A	N/A	$111,563	$111,563
Incremental O&M Costs	$9,225	N/A	N/A	$9,225	$9,225
Subtotal	$120,789	N/A	N/A	$120,789	$120,789
Total Costs	$120,789	$127,500	$378,609	$248,289	$248,289
Net Benefit (Cost)	$167,455	$116,211	($134,897)	$32,558	$58,010
Benefit/Cost Ratio	2.39	1.91	0.64	1.13	1.23

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	11.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	68.62%
Gross Load Factor at Customer	E	12.73%
Transmission Loss Factor (Energy)	F	8.4000%
Transmission Loss Factor (Demand)	G	8.8000%
Societal Net Benefit (Cost)	H	$312

Program Summary per Participant		
Gross kW Saved at Customer	I	0.81 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.61 kW
Gross Annual kWh Saved at Customer	(B x E x I)	902 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	985 kWh

Program Summary All Participants		
Total Participants	J	230
Total Budget	K	**$127,500**
Gross kW Saved at Customer	(J x I)	186 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**140 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	207,503 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**226,532 kWh**
Societal Net Benefits	(J x I x H)	**$58,010**

Utility Program Cost per kWh Lifetime	**$0.0507**
Utility Program Cost per kW at Gen	**$911**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Whole Home Efficiency**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$207,299
Incentive Costs =	$83,316
16) Total Utility Project Costs =	$290,615
17) Direct Participant Costs ($/Part.) =	$2,581
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$20
Escalation Rate =	2.16%
20) Project Life (Years) =	15.4
21) Avg. Dth/Part. Saved =	39.0
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	205
24) Total Annual Dth Saved =	7,998
25) Incentive/Participant =	$405.93

Cost Summary	**2020**
Utility Cost per Participant =	$1,415.93
Cost per Participant per Dth =	$102.58
Lifetime Energy Reduction (Dth)	123,380
Societal Cost per Dth	$5.97

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($513,438)	0.53
Utility Cost Test	$288,160	1.99
Societal Test	$180,674	1.25
Participant Test	$740,602	2.40

RESIDENTIAL DEMAND RESPONSE — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$13,816,574	$13,816,574	$13,816,574	$13,816,574
T & D	N/A	$8,640,945	$8,640,945	$8,640,945	$8,640,945
Marginal Energy	N/A	$660,220	$660,220	$660,220	$660,220
Environmental Externality	N/A	N/A	N/A	N/A	$163,904
Subtotal	N/A	$23,117,739	$23,117,739	$23,117,739	$23,281,643
Participant Benefits					
Bill Reduction - Electric	$1,506,070	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,803,400	N/A	N/A	$1,803,400	$1,803,400
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$3,309,470	N/A	N/A	$1,803,400	$1,803,400
Total Benefits	$3,309,470	$23,117,739	$23,117,739	$24,921,139	$25,085,043
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$6,099,802	$6,099,802	$6,099,802	$6,099,802
Advertising & Promotion	N/A	$500,000	$500,000	$500,000	$500,000
Measurement & Verification	N/A	$200,000	$200,000	$200,000	$200,000
Rebates	N/A	$1,803,400	$1,803,400	$1,803,400	$1,803,400
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$8,603,202	$8,603,202	$8,603,202	$8,603,202
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,506,070	N/A	N/A
Subtotal	N/A	N/A	$1,506,070	N/A	N/A
Participant Costs					
Incremental Capital Costs	$1,894,720	N/A	N/A	$1,894,720	$1,894,720
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$1,894,720	N/A	N/A	$1,894,720	$1,894,720
Total Costs	$1,894,720	$8,603,202	$10,109,272	$10,497,922	$10,497,922
Net Benefit (Cost)	$1,414,750	$14,514,537	$13,008,467	$14,423,217	$14,587,121
Benefit/Cost Ratio	1.75	2.69	2.29	2.37	2.39

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	10.1 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	40.14%
Gross Load Factor at Customer	E	0.30%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$285

Program Summary per Participant		
Gross kW Saved at Customer	I	1.73 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.76 kW
Gross Annual kWh Saved at Customer	(B x E x I)	46 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	50 kWh

Program Summary All Participants		
Total Participants	J	29,665
Total Budget	K	**$8,603,202**
Gross kW Saved at Customer	(J x I)	51,222 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**22,542 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	1,361,439 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**1,486,287 kWh**
Societal Net Benefits	(J x I x H)	**$14,587,121**

Utility Program Cost per kWh Lifetime	**$0.5750**
Utility Program Cost per kW at Gen	**$382**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Residential Demand Response**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$34,380
Incentive Costs =	$74,600
16) Total Utility Project Costs =	$108,980
17) Direct Participant Costs ($/Part.) =	$53
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	10.0
21) Avg. Dth/Part. Saved =	7.0
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	6,150
24) Total Annual Dth Saved =	42,952
25) Incentive/Participant =	$12.13

Cost Summary	**2020**
Utility Cost per Participant =	$17.72
Cost per Participant per Dth =	$10.10
Lifetime Energy Reduction (Dth)	429,516
Societal Cost per Dth	$0.84

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($967,789)	0.70
Utility Cost Test	$2,121,743	20.47
Societal Test	$2,554,645	8.11
Participant Test	$3,543,360	11.91

THERMOSTAT OPTIMIZATION PROGRAM — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$0	$0	$0	$0
T & D	N/A	$0	$0	$0	$0
Marginal Energy	N/A	$0	$0	$0	$0
Environmental Externality	N/A	N/A	N/A	N/A	$0
Subtotal	N/A	$0	$0	$0	$0
Participant Benefits					
Bill Reduction - Electric	$0	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Benefits	$0	$0	$0	$0	$0
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$0	$0	$0	$0
Advertising & Promotion	N/A	$0	$0	$0	$0
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$0	$0	$0	$0
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$0	N/A	N/A
Subtotal	N/A	N/A	$0	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$0	$0	$0	$0
Net Benefit (Cost)	$0	$0	$0	$0	$0
Benefit/Cost Ratio	INF	INF	INF	INF	INF

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	0.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	0.00%
Gross Load Factor at Customer	E	#DIV/0!
Transmission Loss Factor (Energy)	F	0.000%
Transmission Loss Factor (Demand)	G	0.000%
Societal Net Benefit (Cost)	H	#DIV/0!

Program Summary per Participant		
Gross kW Saved at Customer	I	#DIV/0!
Net coincident kW Saved at Generator	(I x D) / (1 - G)	#DIV/0!
Gross Annual kWh Saved at Customer	(B x E x I)	#DIV/0!
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	#DIV/0!

Program Summary All Participants		
Total Participants	J	0
Total Budget	K	**$0**
Gross kW Saved at Customer	(J x I)	#DIV/0!
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**#DIV/0!**
Gross Annual kWh Saved at Customer	(B x E x I) x J	#DIV/0!
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**#DIV/0!**
Societal Net Benefits	(J x I x H)	**#DIV/0!**

Utility Program Cost per kWh Lifetime	**#DIV/0!**
Utility Program Cost per kW at Gen	**#DIV/0!**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Thermostat Optimization Program**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$0
Incentive Costs =	$0
16) Total Utility Project Costs =	$0
17) Direct Participant Costs ($/Part.) =	$0
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	0.0
21) Avg. Dth/Part. Saved =	0.0
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	0
24) Total Annual Dth Saved =	0
25) Incentive/Participant =	$0.00

Cost Summary	**2020**
Utility Cost per Participant =	#DIV/0!
Cost per Participant per Dth =	#DIV/0!
Lifetime Energy Reduction (Dth)	0
Societal Cost per Dth	#DIV/0!

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	$0	#DIV/0!
Utility Cost Test	$0	#DIV/0!
Societal Test	$0	#DIV/0!
Participant Test	$0	#DIV/0!

LOW INCOME SEGMENT TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$194,009	$194,009	$194,009	$194,009
T & D	N/A	$121,549	$121,549	$121,549	$121,549
Marginal Energy	N/A	$1,012,194	$1,012,194	$1,012,194	$1,012,194
Environmental Externality	N/A	N/A	N/A	N/A	$331,249
Subtotal	N/A	$1,327,751	$1,327,751	$1,327,751	$1,659,000
Participant Benefits					
Bill Reduction - Electric	$3,337,560	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$1,419,785	N/A	N/A	$1,419,785	$1,419,785
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$4,757,345	N/A	N/A	$1,419,785	$1,419,785
Total Benefits	$4,757,345	$1,327,751	$1,327,751	$2,747,536	$3,078,785
Costs					
Utility Project Costs					
Customer Services	N/A	$458,914	$458,914	$458,914	$458,914
Project Administration	N/A	$443,680	$443,680	$443,680	$443,680
Advertising & Promotion	N/A	$150,051	$150,051	$150,051	$150,051
Measurement & Verification	N/A	$17,914	$17,914	$17,914	$17,914
Rebates	N/A	$1,419,785	$1,419,785	$1,419,785	$1,419,785
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$2,490,344	$2,490,344	$2,490,344	$2,490,344
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$3,337,560	N/A	N/A
Subtotal	N/A	N/A	$3,337,560	N/A	N/A
Participant Costs					
Incremental Capital Costs	$1,463,100	N/A	N/A	$1,463,100	$1,463,100
Incremental O&M Costs	$24,795	N/A	N/A	$24,795	$24,795
Subtotal	$1,487,895	N/A	N/A	$1,487,895	$1,487,895
Total Costs	$1,487,895	$2,490,344	$5,827,904	$3,978,239	$3,978,239
Net Benefit (Cost)	$3,269,451	($1,162,593)	($4,500,154)	($1,230,703)	($899,454)
Benefit/Cost Ratio	3.20	0.53	0.23	0.69	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	10.2 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	15.44%
Gross Load Factor at Customer	E	15.44%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	($407)

Program Summary per Participant		
Gross kW Saved at Customer	I	0.38 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.06 kW
Gross Annual kWh Saved at Customer	(B x E x I)	516 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	564 kWh

Program Summary All Participants		
Total Participants	J	5,783
Total Budget	K	**$2,490,344**
Gross kW Saved at Customer	(J x I)	2,208 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**374 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	2,985,419 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**3,259,191 kWh**
Societal Net Benefits	(J x I x H)	**($899,454)**

Utility Program Cost per kWh Lifetime	**$0.0750**
Utility Program Cost per kW at Gen	**$6,662**

Conservation Improvement Program (CIP)

BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Low Income Segment Total**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$609,590
Incentive Costs =	$1,291,728
16) Total Utility Project Costs =	$1,901,318
17) Direct Participant Costs ($/Part.) =	$629
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$21
Escalation Rate =	2.16%
20) Project Life (Years) =	25.8
21) Avg. Dth/Part. Saved =	7.2
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	2,054
24) Total Annual Dth Saved =	14,697
25) Incentive/Participant =	$628.95

Cost Summary	2020
Utility Cost per Participant =	$925.76
Cost per Participant per Dth =	$217.26
Lifetime Energy Reduction (Dth)	379,682
Societal Cost per Dth	$5.01

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($2,234,491)	0.28
Utility Cost Test	($1,035,915)	0.46
Societal Test	($285,144)	0.85
Participant Test	$1,983,758	2.54

HOME ENERGY SAVINGS PROGRAM — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$85,442	$85,442	$85,442	$85,442
T & D	N/A	$53,871	$53,871	$53,871	$53,871
Marginal Energy	N/A	$383,550	$383,550	$383,550	$383,550
Environmental Externality	N/A	N/A	N/A	N/A	$135,558
Subtotal	N/A	$522,863	$522,863	$522,863	$658,421
Participant Benefits					
Bill Reduction - Electric	$1,438,249	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$815,697	N/A	N/A	$815,697	$815,697
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$2,253,946	N/A	N/A	$815,697	$815,697
Total Benefits	$2,253,946	$522,863	$522,863	$1,338,560	$1,474,118
Costs					
Utility Project Costs					
Customer Services	N/A	$161,600	$161,600	$161,600	$161,600
Project Administration	N/A	$215,439	$215,439	$215,439	$215,439
Advertising & Promotion	N/A	$146,614	$146,614	$146,614	$146,614
Measurement & Verification	N/A	$9,801	$9,801	$9,801	$9,801
Rebates	N/A	$815,697	$815,697	$815,697	$815,697
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$1,349,151	$1,349,151	$1,349,151	$1,349,151
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,438,249	N/A	N/A
Subtotal	N/A	N/A	$1,438,249	N/A	N/A
Participant Costs					
Incremental Capital Costs	$859,011	N/A	N/A	$859,011	$859,011
Incremental O&M Costs	$24,795	N/A	N/A	$24,795	$24,795
Subtotal	$883,806	N/A	N/A	$883,806	$883,806
Total Costs	$883,806	$1,349,151	$2,787,400	$2,232,957	$2,232,957
Net Benefit (Cost)	$1,370,139	($826,288)	($2,264,537)	($894,397)	($758,839)
Benefit/Cost Ratio	2.55	0.39	0.19	0.60	0.66

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	16.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	31.86%
Gross Load Factor at Customer	E	28.77%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	($2,305)

Program Summary per Participant		
Gross kW Saved at Customer	I	0.16 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.05 kW
Gross Annual kWh Saved at Customer	(B x E x I)	392 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	428 kWh

Program Summary All Participants		
Total Participants	J	2,117
Total Budget	K	**$1,349,151**
Gross kW Saved at Customer	(J x I)	329 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**115 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	829,685 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**905,770 kWh**
Societal Net Benefits	(J x I x H)	**($758,839)**

Utility Program Cost per kWh Lifetime	**$0.0905**
Utility Program Cost per kW at Gen	**$11,731**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Home Energy Savings Program**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$196,613
Incentive Costs =	$1,291,728
16) Total Utility Project Costs =	$1,488,341
17) Direct Participant Costs ($/Part.) =	$2,333
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	16.1
21) Avg. Dth/Part. Saved =	8.9
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	554
24) Total Annual Dth Saved =	4,919
25) Incentive/Participant =	$2,332.50

Cost Summary	2020
Utility Cost per Participant =	$2,687.53
Cost per Participant per Dth =	$565.12
Lifetime Energy Reduction (Dth)	79,309
Societal Cost per Dth	$18.77

	Extension NPV	Extension B/C
Ratepayer Impact Measure Test	($1,630,796)	0.18
Utility Cost Test	($1,118,319)	0.25
Societal Test	($922,969)	0.38
Participant Test	$738,952	1.57

LI HOME ENERGY SQUAD — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$45,390	$45,390	$45,390	$45,390
T & D	N/A	$27,989	$27,989	$27,989	$27,989
Marginal Energy	N/A	$307,576	$307,576	$307,576	$307,576
Environmental Externality	N/A	N/A	N/A	N/A	$87,139
Subtotal	N/A	$380,954	$380,954	$380,954	$468,093
Participant Benefits					
Bill Reduction - Electric	$794,227	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$0	N/A	N/A	$0	$0
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$794,227	N/A	N/A	$0	$0
Total Benefits	$794,227	$380,954	$380,954	$380,954	$468,093
Costs					
Utility Project Costs					
Customer Services	N/A	$247,314	$247,314	$247,314	$247,314
Project Administration	N/A	$77,361	$77,361	$77,361	$77,361
Advertising & Promotion	N/A	$3,000	$3,000	$3,000	$3,000
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$0	$0	$0	$0
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$327,675	$327,675	$327,675	$327,675
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$794,227	N/A	N/A
Subtotal	N/A	N/A	$794,227	N/A	N/A
Participant Costs					
Incremental Capital Costs	$0	N/A	N/A	$0	$0
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$0	N/A	N/A	$0	$0
Total Costs	$0	$327,675	$1,121,902	$327,675	$327,675
Net Benefit (Cost)	$794,227	$53,279	($740,948)	$53,279	$140,418
Benefit/Cost Ratio	INF	1.16	0.34	1.16	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	5.3 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	10.63%
Gross Load Factor at Customer	E	11.02%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$108

Program Summary per Participant		
Gross kW Saved at Customer	I	0.69 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.08 kW
Gross Annual kWh Saved at Customer	(B x E x I)	663 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	724 kWh

Program Summary All Participants		
Total Participants	J	1,900
Total Budget	K	**$327,675**
Gross kW Saved at Customer	(J x I)	1,305 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**152 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	1,259,447 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**1,374,942 kWh**
Societal Net Benefits	(J x I x H)	**$140,418**

Utility Program Cost per kWh Lifetime	**$0.0452**
Utility Program Cost per kW at Gen	**$2,154**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **LI Home Energy Squad**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$7.08
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	2.55%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$412,977
Incentive Costs =	$0
16) Total Utility Project Costs =	$412,977
17) Direct Participant Costs ($/Part.) =	$0
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$29
Escalation Rate =	2.16%
20) Project Life (Years) =	9.7
21) Avg. Dth/Part. Saved =	6.5
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	1,500
24) Total Annual Dth Saved =	9,777
25) Incentive/Participant =	$0.00

Cost Summary	**2020**
Utility Cost per Participant =	$275.32
Cost per Participant per Dth =	$42.24
Lifetime Energy Reduction (Dth)	94,964
Societal Cost per Dth	$4.35

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($603,694)	0.45
Utility Cost Test	$82,404	1.20
Societal Test	$637,825	2.54
Participant Test	$1,244,806	#DIV/0!

MULTI-FAMILY ENERGY SAVINGS PROGRAM — 2020 — ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$63,176	$63,176	$63,176	$63,176
T & D	N/A	$39,689	$39,689	$39,689	$39,689
Marginal Energy	N/A	$321,068	$321,068	$321,068	$321,068
Environmental Externality	N/A	N/A	N/A	N/A	$108,552
Subtotal	N/A	$423,933	$423,933	$423,933	$532,485
Participant Benefits					
Bill Reduction - Electric	$1,105,085	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$604,088	N/A	N/A	$604,088	$604,088
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$1,709,173	N/A	N/A	$604,088	$604,088
Total Benefits	$1,709,173	$423,933	$423,933	$1,028,021	$1,136,573
Costs					
Utility Project Costs					
Customer Services	N/A	$50,000	$50,000	$50,000	$50,000
Project Administration	N/A	$150,880	$150,880	$150,880	$150,880
Advertising & Promotion	N/A	$437	$437	$437	$437
Measurement & Verification	N/A	$8,113	$8,113	$8,113	$8,113
Rebates	N/A	$604,088	$604,088	$604,088	$604,088
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$813,518	$813,518	$813,518	$813,518
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$1,105,085	N/A	N/A
Subtotal	N/A	N/A	$1,105,085	N/A	N/A
Participant Costs					
Incremental Capital Costs	$604,088	N/A	N/A	$604,088	$604,088
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$604,088	N/A	N/A	$604,088	$604,088
Total Costs	$604,088	$813,518	$1,918,603	$1,417,606	$1,417,606
Net Benefit (Cost)	$1,105,084	($389,585)	($1,494,670)	($389,585)	($281,033)
Benefit/Cost Ratio	2.83	0.52	0.22	0.73	0.80

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	11.3 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	16.95%
Gross Load Factor at Customer	E	17.83%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	($490)

Program Summary per Participant		
Gross kW Saved at Customer	I	0.32 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.06 kW
Gross Annual kWh Saved at Customer	(B x E x I)	508 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	554 kWh

Program Summary All Participants		
Total Participants	J	1,766
Total Budget	K	**$813,518**
Gross kW Saved at Customer	(J x I)	574 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**107 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	896,287 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**978,479 kWh**
Societal Net Benefits	(J x I x H)	**($281,033)**

Utility Program Cost per kWh Lifetime	**$0.0734**
Utility Program Cost per kW at Gen	**$7,626**

RESEARCH, EVALUATIONS & PILOTS SEGMENT TOTAL — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$794,672	$794,672	$794,672	$794,672
T & D	N/A	$494,692	$494,692	$494,692	$494,692
Marginal Energy	N/A	$1,968,629	$1,968,629	$1,968,629	$1,968,629
Environmental Externality	N/A	N/A	N/A	N/A	$682,533
Subtotal	N/A	$3,257,992	$3,257,992	$3,257,992	$3,940,525
Participant Benefits					
Bill Reduction - Electric	$5,819,827	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$660,645	N/A	N/A	$660,645	$660,645
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$3,563,456	N/A	N/A	$16,093	$16,093
Subtotal	$10,043,928	N/A	N/A	$676,738	$676,738
Total Benefits	$10,043,928	$3,257,992	$3,257,992	$3,934,730	$4,617,263
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$2,639,495	$2,639,495	$2,639,495	$2,639,495
Advertising & Promotion	N/A	$27,072	$27,072	$27,072	$27,072
Measurement & Verification	N/A	$5,414	$5,414	$5,414	$5,414
Rebates	N/A	$660,645	$660,645	$660,645	$660,645
Other	N/A	$418,522	$418,522	$418,522	$418,522
Subtotal	N/A	$3,751,148	$3,751,148	$3,751,148	$3,751,148
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$5,819,827	N/A	N/A
Subtotal	N/A	N/A	$5,819,827	N/A	N/A
Participant Costs					
Incremental Capital Costs	$2,049,691	N/A	N/A	$2,049,691	$2,049,691
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$2,049,691	N/A	N/A	$2,049,691	$2,049,691
Total Costs	$2,049,691	$3,751,148	$9,570,975	$5,800,839	$5,800,839
Net Benefit (Cost)	$7,994,237	($493,156)	($6,312,983)	($1,866,109)	($1,183,576)
Benefit/Cost Ratio	4.90	0.87	0.34	0.68	0.80

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	8.9 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	17.10%
Gross Load Factor at Customer	E	8.83%
Transmission Loss Factor (Energy)	F	7.650%
Transmission Loss Factor (Demand)	G	8.711%
Societal Net Benefit (Cost)	H	($141)

Program Summary per Participant

Gross kW Saved at Customer	I	0.22 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.04 kW
Gross Annual kWh Saved at Customer	(B x E x I)	170 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	185 kWh

Program Summary All Participants

Total Participants	J	38,201
Total Budget	K	**$3,751,148**
Gross kW Saved at Customer	(J x I)	8,422 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**1,577 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	6,512,717 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**7,052,207 kWh**
Societal Net Benefits	(J x I x H)	**($1,183,576)**
Utility Program Cost per kWh Lifetime		**$0.0599**
Utility Program Cost per kW at Gen		**$2,378**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Research, Evaluations & Pilots Segment Total**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$565,258
Incentive Costs =	$30,975
16) Total Utility Project Costs =	$596,233
17) Direct Participant Costs ($/Part.) =	$3,312
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$5,593
Escalation Rate =	2.16%
20) Project Life (Years) =	6.7
21) Avg. Dth/Part. Saved =	351.4
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	13
24) Total Annual Dth Saved =	4,568
25) Incentive/Participant =	$2,382.69

Cost Summary	2020		Extension NPV	Extension B/C
Utility Cost per Participant =	$45,864.08	Ratepayer Impact Measure Test	($643,253)	0.21
Cost per Participant per Dth =	$139.95			
		Utility Cost Test	($433,565)	0.28
Lifetime Energy Reduction (Dth)	30,507			
		Societal Test	$39,364	1.06
Societal Cost per Dth	$20.27			
		Participant Test	$1,755,010	34.08

ENERGY STAR RETAIL PRODUCTS — 2020 ELECTRIC — GOAL

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$717,502	$717,502	$717,502	$717,502
T & D	N/A	$446,933	$446,933	$446,933	$446,933
Marginal Energy	N/A	$1,419,989	$1,419,989	$1,419,989	$1,419,989
Environmental Externality	N/A	N/A	N/A	N/A	$495,000
Subtotal	N/A	$2,584,424	$2,584,424	$2,584,424	$3,079,424
Participant Benefits					
Bill Reduction - Electric	$4,875,264	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$542,875	N/A	N/A	$542,875	$542,875
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$0	N/A	N/A	$0	$0
Subtotal	$5,418,139	N/A	N/A	$542,875	$542,875
Total Benefits	$5,418,139	$2,584,424	$2,584,424	$3,127,299	$3,622,299
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$131,605	$131,605	$131,605	$131,605
Advertising & Promotion	N/A	$27,072	$27,072	$27,072	$27,072
Measurement & Verification	N/A	$5,414	$5,414	$5,414	$5,414
Rebates	N/A	$542,875	$542,875	$542,875	$542,875
Other	N/A	$0	$0	$0	$0
Subtotal	N/A	$706,966	$706,966	$706,966	$706,966
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$4,875,264	N/A	N/A
Subtotal	N/A	N/A	$4,875,264	N/A	N/A
Participant Costs					
Incremental Capital Costs	$1,845,000	N/A	N/A	$1,845,000	$1,845,000
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$1,845,000	N/A	N/A	$1,845,000	$1,845,000
Total Costs	$1,845,000	$706,966	$5,582,230	$2,551,966	$2,551,966
Net Benefit (Cost)	$3,573,139	$1,877,457	($2,997,806)	$575,332	$1,070,333
Benefit/Cost Ratio	2.94	3.66	0.46	1.23	1.42

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	11.4 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	15.34%
Gross Load Factor at Customer	E	5.38%
Transmission Loss Factor (Energy)	F	8.400%
Transmission Loss Factor (Demand)	G	8.800%
Societal Net Benefit (Cost)	H	$134

Program Summary per Participant		
Gross kW Saved at Customer	I	0.21 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	0.04 kW
Gross Annual kWh Saved at Customer	(B x E x I)	99 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	108 kWh

Program Summary All Participants		
Total Participants	J	38,156
Total Budget	K	**$706,966**
Gross kW Saved at Customer	(J x I)	7,999 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**1,345 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	3,768,015 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**4,113,554 kWh**
Societal Net Benefits	(J x I x H)	**$1,070,333**

Utility Program Cost per kWh Lifetime	**$0.0150**
Utility Program Cost per kW at Gen	**$526**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Energy Star Retail Products**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$0
Incentive Costs =	$0
16) Total Utility Project Costs =	$0
17) Direct Participant Costs ($/Part.) =	$0
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$0
Escalation Rate =	2.16%
20) Project Life (Years) =	0.0
21) Avg. Dth/Part. Saved =	0.0
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	0
24) Total Annual Dth Saved =	0
25) Incentive/Participant =	$0.00

Cost Summary	**2020**
Utility Cost per Participant =	#DIV/0!
Cost per Participant per Dth =	#DIV/0!
Lifetime Energy Reduction (Dth)	0
Societal Cost per Dth	#DIV/0!

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($3,414)	0.00
Utility Cost Test	($3,414)	0.00
Societal Test	$0	#DIV/0!
Participant Test	$3,414	#DIV/0!

ENERGY INFORMATION SYSTEMS **2020 ELECTRIC GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	$77,170	$77,170	$77,170	$77,170
T & D	N/A	$47,759	$47,759	$47,759	$47,759
Marginal Energy	N/A	$548,640	$548,640	$548,640	$548,640
Environmental Externality	N/A	N/A	N/A	N/A	$187,533
Subtotal	N/A	$673,568	$673,568	$673,568	$861,101
Participant Benefits					
Bill Reduction - Electric	$944,563	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	$117,770	N/A	N/A	$117,770	$117,770
Incremental Capital Savings	$0	N/A	N/A	$0	$0
Incremental O&M Savings	$3,563,456	N/A	N/A	$16,093	$16,093
Subtotal	$4,625,789	N/A	N/A	$133,863	$133,863
Total Benefits	$4,625,789	$673,568	$673,568	$807,431	$994,964
Costs					
Utility Project Costs					
Customer Services	N/A	$0	$0	$0	$0
Project Administration	N/A	$192,250	$192,250	$192,250	$192,250
Advertising & Promotion	N/A	$0	$0	$0	$0
Measurement & Verification	N/A	$0	$0	$0	$0
Rebates	N/A	$117,770	$117,770	$117,770	$117,770
Other	N/A	$16,560	$16,560	$16,560	$16,560
Subtotal	N/A	$326,580	$326,580	$326,580	$326,580
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	$944,563	N/A	N/A
Subtotal	N/A	N/A	$944,563	N/A	N/A
Participant Costs					
Incremental Capital Costs	$204,691	N/A	N/A	$204,691	$204,691
Incremental O&M Costs	$0	N/A	N/A	$0	$0
Subtotal	$204,691	N/A	N/A	$204,691	$204,691
Total Costs	$204,691	$326,580	$1,271,143	$531,271	$531,271
Net Benefit (Cost)	$4,421,099	$346,988	($597,575)	$276,161	$463,693
Benefit/Cost Ratio	22.60	2.06	0.53	1.52	1.87

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	5.3 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	51.08%
Gross Load Factor at Customer	E	74.12%
Transmission Loss Factor (Energy)	F	6.600%
Transmission Loss Factor (Demand)	G	7.000%
Societal Net Benefit (Cost)	H	$1,097

Program Summary per Participant		
Gross kW Saved at Customer	I	9.39 kW
Net coincident kW Saved at Generator	(I x D) / (1 - G)	5.16 kW
Gross Annual kWh Saved at Customer	(B x E x I)	60,993 kWh
Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)	65,303 kWh

Program Summary All Participants		
Total Participants	J	45
Total Budget	K	**$326,580**
Gross kW Saved at Customer	(J x I)	423 kW
Net coincident kW Saved at Generator	**(I x D) / (1 - G) x J**	**232 kW**
Gross Annual kWh Saved at Customer	(B x E x I) x J	2,744,702 kWh
Net Annual kWh Saved at Generator	**((B x E x I) / (1 - F)) x J**	**2,938,653 kWh**
Societal Net Benefits	(J x I x H)	**$463,693**

Utility Program Cost per kWh Lifetime	**$0.0209**
Utility Program Cost per kW at Gen	**$1,407**

Conservation Improvement Program (CIP) BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Xcel Energy**
Project: **Energy Information Systems**

Input Data	2020 Extension
1) Retail Rate ($/Dth) =	$6.46
Escalation Rate =	4.00%
2) Non-Gas Fuel Retail Rate ($/Fuel Unit) =	$0.000
Escalation Rate =	3.22%
Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	kWh
3) Commodity Cost ($/Dth) =	$4.27
Escalation Rate =	4.00%
4) Demand Cost ($/Unit/Yr) =	$80.24
Escalation Rate =	4.00%
5) Peak Reduction Factor =	1.00%
6) Variable O&M ($/Dth) =	$0.0408
Escalation Rate =	4.00%
7) Non-Gas Fuel Cost ($/Fuel Unit) =	$0.022
Escalation Rate =	3.22%
8) Non-Gas Fuel Loss Factor	5.28%
9) Gas Environmental Damage Factor =	$0.380
Escalation Rate =	2.16%
10) Non Gas Fuel Enviro. Damage Factor ($/Unit) =	$0.023
Escalation Rate =	2.16%
11) Participant Discount Rate =	7.42%
12) Utility Discount Rate =	7.42%
13) Societal Discount Rate =	2.55%
14) General Input Data Year =	2016
15d) Project Analysis Year 4 =	2020
Administrative & Operating Costs =	$86,600
Incentive Costs =	$30,975
16) Total Utility Project Costs =	$117,575
17) Direct Participant Costs ($/Part.) =	$3,312
18) Participant Non-Energy Costs (Annual $/Part.) =	$0
Escalation Rate =	2.16%
19) Participant Non-Energy Savings (Annual $/Part) =	$5,593
Escalation Rate =	2.16%
20) Project Life (Years) =	6.7
21) Avg. Dth/Part. Saved =	351.4
22) Avg Non-Gas Fuel Units/Part. Saved =	0.0
22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	0.0
23) Number of Participants =	13
24) Total Annual Dth Saved =	4,568
25) Incentive/Participant =	$2,382.69

Cost Summary	**2020**
Utility Cost per Participant =	$9,044.23
Cost per Participant per Dth =	$35.16
Lifetime Energy Reduction (Dth)	30,507
Societal Cost per Dth	$4.58

	Extension NPV	**Extension B/C**
Ratepayer Impact Measure Test	($161,181)	0.51
Utility Cost Test	$48,507	1.41
Societal Test	$518,022	4.71
Participant Test	$1,751,596	34.02

	2020				
	Electric Societal	Electric TRC	Electric RIM	Electric Participant	Electric Utility
Business Segment					
Business New Construction	1.84	1.54	0.53	3.69	3.77
Commercial Efficiency	1.83	1.52	0.51	3.36	4.72
Commercial Refrigeration Efficiency	1.57	1.28	0.49	3.73	2.65
Cooling Efficiency	1.28	1.13	0.59	2.15	2.30
Custom Efficiency	4.11	3.83	0.47	9.33	2.41
Data Center Efficiency	1.84	1.51	0.51	3.77	3.11
Efficiency Controls	1.54	1.23	0.42	2.95	2.95
Fluid Systems Optimization	2.22	1.79	0.49	4.61	4.66
Foodservice Equipment	1.61	1.33	0.57	3.83	5.63
Heating Efficiency	5.55	4.58	0.41	10.57	13.35
Lighting Efficiency	1.85	1.50	0.49	3.25	4.63
Motor Efficiency	2.73	2.25	0.53	5.56	6.06
Multi-Family Building Efficiency	1.24	1.04	0.30	6.26	1.18
Process Efficiency	2.78	2.49	0.46	4.77	3.90
Recommissioning	1.85	1.54	0.55	3.80	2.39
Self-Direct	0.00	0.00	0.00	0.00	0.00
Turn Key	1.51	1.26	0.46	3.70	2.52
Business Segment Energy Efficiency Total	**2.12**	**1.80**	**0.49**	**4.07**	**3.90**
Electric Rate Savings	4.04	4.02	3.40	INF	4.02
Saver's Switch for Business	1.95	1.95	1.93	INF	1.95
Peak Partner Rewards	2.10	2.10	1.61	INF	1.63
Business Segment Load Management Total	**2.29**	**2.28**	**2.10**	**INF**	**2.17**
Business Segment Total	**2.12**	**1.81**	**0.51**	**4.08**	**3.71**
Residential Segment					
Energy Efficient Showerhead	18.80	16.86	0.41	85.85	11.94
Energy Feedback Residential	2.45	2.13	0.59	INF	2.13
Efficient New Home Construction	1.70	1.59	0.74	3.04	2.55
Residential Heating	1.42	1.19	0.37	3.46	4.13
Home Energy Squad	1.30	1.04	0.32	15.07	1.22
Home Lighting	1.83	1.49	0.34	6.71	2.40
Whole Home Efficiency	1.19	1.09	0.66	2.18	1.84
Insulation Rebate	1.92	1.64	0.46	2.58	5.80
Refrigerator Recycling	3.72	3.04	0.37	INF	2.79
Residential Cooling	1.34	1.28	0.94	1.59	2.19
School Education Kits	1.05	0.92	0.24	5.24	0.69
Water Heater Rebate	1.13	0.93	0.29	4.86	1.33
Thermostat Optimization Program					
Residential Segment Energy Efficiency Total	**1.72**	**1.48**	**0.43**	**5.24**	**2.38**
Residential Demand Response	2.39	2.37	2.29	1.75	2.69
Residential Segment Total	**1.79**	**1.61**	**0.58**	**4.92**	**2.31**
Low Income Segment					
Home Energy Savings Program	0.66	0.60	0.19	2.55	0.39
LI Home Energy Squad	1.43	1.16	0.34	INF	1.16
Multi-Family Energy Savings Program	0.80	0.73	0.22	2.83	0.52
Low Income Segment Total	**0.77**	**0.69**	**0.23**	**3.20**	**0.53**
Research, Evaluations & Pilots Segment					
Energy Star Retail Products	1.42	1.23	0.46	2.94	3.66
Energy Information Systems	1.87	1.52	0.53	22.60	2.06
Research, Evaluations & Pilots Segment Total	**0.80**	**0.68**	**0.34**	**4.90**	**0.87**
PORTFOLIO SUBTOTAL	**1.64**	**1.63**	**0.52**	**4.25**	**2.66**

	2020	
	Gas Societal	**Gas Utility**
Business Segment		
Business New Construction	2.83	5.44
Commercial Efficiency	3.79	5.76
Commercial Refrigeration Efficiency	2.54	2.72
Cooling Efficiency	4.82	8.87
Custom Efficiency	2.07	6.62
Data Center Efficiency		
Efficiency Controls	1.87	6.31
Fluid Systems Optimization		
Foodservice Equipment	2.10	3.80
Heating Efficiency	2.11	3.45
Lighting Efficiency		
Motor Efficiency		
Multi-Family Building Efficiency	1.89	1.28
Process Efficiency	1.60	3.63
Recommissioning	3.34	3.81
Self-Direct	0.00	0.00
Turn Key	1.36	1.35
Business Segment Energy Efficiency Total	**2.28**	**3.79**
Residential Segment		
Energy Efficient Showerhead	22.86	5.53
Energy Feedback Residential	1.44	1.34
Efficient New Home Construction	1.43	1.74
Residential Heating	2.04	3.97
Home Energy Squad	1.48	0.79
Home Lighting		
Whole Home Efficiency	1.25	1.99
Insulation Rebate	1.45	4.47
Refrigerator Recycling		
Residential Cooling		
School Education Kits	7.46	1.81
Water Heater Rebate	0.73	1.19
Thermostat Optimization Program		
Residential Segment Energy Efficiency Total	**2.22**	**2.61**
Residential Demand Response	8.11	20.47
Low Income Segment		
Home Energy Savings Program	0.38	0.25
LI Home Energy Squad	2.54	1.20
Low Income Segment Total	**0.85**	**0.46**
Planning Segment Total		
Energy Star Retail Products		
Energy Information Systems	4.71	1.41
Research, Evaluations & Pilots Segment Total	**1.06**	**0.28**
PORTFOLIO SUBTOTAL	**2.06**	**2.40**

Technical Assumptions

This section contains the forecast planning and deemed savings technical assumptions for the proposed programs:

- **Forecast Planning Assumptions** - These assumptions are forecasts that describe the predicted participation, savings, and costs of the measures proposed in the Plan. They represent an average of the values for the expected product mix that we anticipate customers will implement. These assumptions are used to estimate the energy consumption impacts and other measure-specific factors in order to calculate the benefit-cost analyses. The forecasted impacts are derived by applying the anticipated participation for each measure to the Deemed Savings Technical Assumptions for that measure. The impacts from each of the measures are aggregated and inputted into the benefit-cost model for the program level analysis.

  Unless indicated otherwise in redline in the Technical Assumptions, the forecasts are the same as those approved for 2019, as per the Deputy Commissioner's Decision to extend the 2017-2019 CIP Triennial Plans to 2020. All requested changes are highlighted in red in the Forecasted Technical Assumptions.

- **Deemed Savings Technical Assumptions ("DSTAs")** - These assumptions describe how actual energy savings, cost, and other values will be calculated for each measure that is implemented. For **prescriptive** DSM measures, the deemed savings technical assumptions contain the algorithms that will be used to calculate energy and demand savings, as well as all assumed or customer-provided values to be used as inputs to these algorithms. Additionally, the Deemed Savings technical assumptions describe how incremental capital and incremental operation and maintenance costs will be determined for each implemented measure, and detail the values which will be used for the measure life. For **custom** products, the Deemed Savings technical assumptions describe the methodology to be used to calculate project specific savings, as well as any values to be used for all implemented projects under a specific DSM product.

  For the 2020 Extension, only the DSTA's that have proposed changes or additions are included. The DSTA's for all other programs are identical to those already approved for 2019, as per the Deputy Commissioner's Decision to extend the 2017-2019 CIP Triennial to 2020. These DSTA's can be found in the original 2017-2019 CIP Triennial Plan and all approved 2017-2019 Plan modifications.

Technical Reference Manual Compliance

On January 14, 2016 the Department issued the 2017-2019 Minnesota Technical Resource Manual (TRM), Version 2.0. Within the final order (Docket No. E,G999/CIP-15-896), the Department stated: "If a utility wants to use a method that deviates from the TRM measure, they must provide justification with the filing detailing the reasoning for the deviation as well as providing any calculations, methodologies and assumptions used in the alternative calculation."

As noted in the Company's 2017-2019 CIP Triennial Plan and justified in our subsequent response to the Department's Information Request No. 3 (Docket No. E,G002/CIP-16-115), the Company

does not adopt all 2017-2019 MN TRM 2.0 assumptions for all programs. The calculations and methodologies for energy and demand savings are very similar to those in the TRM, but vary on a program-by-program basis. Additionally, some programs have been updated with more recent assumptions and inputs to align with more recent versions of the TRM, including from MN TRM 3.0. Per the Deputy Commissioner's Decision to extend the 2017-2019 CIP Triennial Plans to 2020 (Docket No. E,G002/CIP-16-115), the calculations and methodologies in our 2020 Extension Plan are a continuation of those approved in our 2017-2019 CIP Triennial Plan, unless identified otherwise in the Deemed Savings Technical Assumptions.

The following table describes each column in the Forecasted Technical Assumptions. Please note that the fields in red font in the subsequent 2020 Minnesota Extension Forecasted Technical Assumptions indicate updates from the approved 2019 Forecasted Technical Assumptions.

Column Label	**Column Description**
Program	Program Name
Electric Measure Group	New column for 2020 measures only
Electric Measure Description	Program name and individual measures
Efficient Product Description/Rating	High efficiency product description
Efficient Product Consumption	Consumption of high efficiency product in either watts (electric) or Dth/yr (gas)
Efficient Hours of Operation (hrs/yr)	High efficiency product hours of operation
Baseline Product Description/Rating	Baseline product description
Baseline Product Consumption	Consumption of baseline product in either watts (electric) or Dth/yr (gas)
Baseline Hours of Operation (hrs/yr)	Baseline equipment hours of operation
Measure Lifetime (years)	High efficiency product lifetime
Rebate Amount	Average dollar amount of rebate given to participants
Average Baseline Product Cost ($)	The average cost of a baseline product in dollars
Incremental Cost of Efficient Product ($)	Difference in efficient and baseline product cost
Assumed Energy Cost ($/kWh)	Unit cost
Rebate as a % of Incremental Cost	Percent of incremental cost that is equal to the rebate amount
Incremental Cost Payback Period w/o Rebate (yrs)	Payback period expressed in years after a participant acquires the high efficiency product using the incremental cost of the product
Incremental Cost Payback Period w/ Rebate (yrs)	Payback period expressed in years after a participant acquires the high efficiency product with the incremental cost reduced by the rebate amount
Annual Customer kWh/Dth Savings	Annual kWh or Dth savings customer realizes after implementing high efficiency product
Rebated Cost per Annual Cust kWh/Dth Saved	Rebate cost per annual kWh or Dth saved by the high efficiency product at the customer meter
Rebated Lifetime Cost per Cust kWh/Dth Saved	Rebate cost per kWh or Dth saved by the high efficiency product over the lifetime of the product at the customer meter
Customer kW Savings (Electric Only)	Consumption savings in kW customer realizes after implementing high efficiency product
Generator Peak kW Savings (Electric Only)	Annual kW savings utility realizes on annual peak day after customer implements high efficiency product (includes T&D losses)
Non-Energy O&M Savings ($)	Non energy savings related to O&M
Energy O&M Savings ($)	Energy savings related to O&M
Coincidence Factor (Electric Only)	Percent of peak customer kW that coincides with system peak
2019 Participants	Individual premises forecasted to participate in programs during 2019
2019 Units	Individual units forecasted to participate in program during 2019
2020 Participants	Individual premises forecasted to participate in programs during 2020
2020 Units	Individual units forecasted to participate in program during 2020
NTG	Net-to-Gross %, Forecast Assumption
Installation Rate	Metric for tracking installations, Forecast Assumption (%)
Realization Rate	Calculated metric that compares verified savings with reported savings, Forecast Assumption.

2019 Net Gen kW (Electric Only)	Total Forecasted Net Generator Peak kW Savings from all forecasted 2019 participating units.
2019 Net Gen kWh/Dth	Total Forecasted Net Generator Peak kWh or Dth Savings from all forecasted 2019 participating units.
2019 Rebate Budget	Total forecasted rebates for forecasted 2019 participating units
2019 Incremental Costs	Total Forecasted Incremental Costs incurred by all forecasted 2019 participating units.
2020 Net Gen kW (Electric Only)	Total Forecasted Net Generator Peak kW Savings from all forecasted 2020 participating units.
2020 Net Gen kWh/Dth	Total Forecasted Net Generator Peak kWh or Dth Savings from all forecasted 2020 participating units.
2020 Rebate Budget	Total forecasted rebates for forecasted 2020 participating units
2020 Incremental Costs	Total Forecasted Incremental Costs incurred by all forecasted 2020 participating units.

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating
		Business				
		Business New Construction				
Business New Construction		Average EDA Project - 2017	More Efficient than Code Building	258,206	4,892	Code-Compliant Building
Business New Construction		Average EDA Project - 2018	More Efficient than Code Building	187,640	4,555	Code-Compliant Building
Business New Construction		Average EDA Project - 2019	More Efficient than Code Building	152,055	4,086	Code-Compliant Building
Business New Construction		Average EEB Project - 2017	More Efficient than Code Building	43,253	3,338	Code-Compliant Building
Business New Construction		Average EEB Project - 2018	More Efficient than Code Building	40,411	3,250	Code-Compliant Building
Business New Construction		Average EEB Project - 2019	More Efficient than Code Building	42,216	3,025	Code-Compliant Building
Commercial Efficiency		***Commercial Efficiency***				
Commercial Efficiency		Average project results from 2015 history	0	1,691,153	5,913	New updated systems
Commercial Efficiency		Study Cost Allocations	0	0	0	0
Commercial Efficiency		Phase 2 Customer Contribution	0	0	0	0
Commercial Efficiency		Behavioral Changes	Behavior changes that reduce energy use	2,962,572	8,760	No change in behavior
Commercial Efficiency		Behavioral Changes	Behavior changes that reduce energy use	-1,975,048	8,760	No change in behavior
Cooling Efficiency		***Cooling Efficiency***				
Cooling Efficiency		DX Units	DX unit size 8.20 tons, 12.60 EER, 15.06 SEER	8,108	1,529	DX unit size 8.20 tons, 10.90 EER, 12.00 SEER
Cooling Efficiency		RTU Economizer Control with Demand Control Ventilation	RTU with Demand Control	1,207	498	RTU with Standard Economizer
Cooling Efficiency		Water-source Heat Pumps	WSHP unit size 1.94 tons, 13.91 EER, 15.45 SEER	1,678	921	WSHP unit size 1.94 tons, 12.00 EER, 13.33 SEER
Cooling Efficiency		PTAC Units	PTAC unit size 0.74 tons, 11.78 EER, 13.86 SEER	752	1,013	PTAC unit size 0.74 tons, 11.14 EER, 13.11 SEER
Cooling Efficiency		Scroll/Screw Chiller	Chiller size 109 tons, 0.71 FLV kW/ton, 0.53 IPLV	75,933	1,092	Chiller size 109 tons, 0.77 FLV kW/ton, 0.62 IPLV
Cooling Efficiency		Centrifugal Chiller	Chiller size 341.04 tons, 0.58 FLV kW/ton, 0.42 IPLV	192,860	5,978	Chiller size 341.04 tons, 0.62 FLV kW/ton, 0.58 IPLV
Cooling Efficiency		Air Cooled Chillers	Chiller size 124.73 tons, 10.43 EER, 16.04 IPLV	142,617	2,422	Chiller size 124.73 tons, 9.56 EER, 12.58 IPLV
Cooling Efficiency		Cooling Studies	Customer has Study			No Study
Cooling Efficiency		Recommissioning Studies	Efficient equipment as identified in a recommissioning study			Existing equipment
Cooling Efficiency		Chiller VFD Retrofit	VFD Chiller size 855 tons, 0.63 FLV kW/ton, 0.38 IPLV	326,610	1,021	Const Speed Chiller size 855 tons, 0.62 FLV kW/ton, 0.57 IPLV
Cooling Efficiency		Custom Cooling Projects	New Equipment	89,775	3,722	Existing or New Inefficient
Cooling Efficiency		ERV Install on RTU/AHU for reduced cooling load	73.5% Sensible Effectiveness Heat Recovery on 11193 CFM OA (Cooling Mode)	9,608	338	No heat recovery on 11193 CFM OA
Cooling Efficiency		Mini-Split Heat Pump	MSHP size 1.2 tons, 21.27 SEER, 10.50 HSPF	1,088	1,265	MSHP size 1.2 tons, 14 SEER, 8.2 HSPF
Cooling Efficiency		Mini-Split AC - Data Center	MSHP size 1.2 tons, 21.27 SEER	1,088	5,236	MSHP size 1.2 tons, 14 SEER
Cooling Efficiency		ECM Motors - Medium Temp Display Case	ECM Motor	24	8,672	Shaded Pole Motor
Cooling Efficiency		ECM Motors - Low Temp Display Case	ECM Motor	28	8,672	Shaded Pole Motor
Cooling Efficiency		ECM Motors - Medium Temp Walk-in, Evap fan <= 15" Diameter	ECM Motor	44	8,585	Shaded Pole Motor
Cooling Efficiency		ECM Motors - Low Temp Walk-in, Evap fan <= 15" Diameter	ECM Motor	52	8,585	Shaded Pole Motor
Cooling Efficiency		ECM Motors - Medium Temp Walk-in, Evap fan > 15" Diameter	ECM Motor	68	8,585	Shaded Pole Motor
Cooling Efficiency		ECM Motors - Low Temp Walk-in, Evap fan > 15" Diameter	ECM Motor	80	8,585	Shaded Pole Motor
Cooling Efficiency		Anti-Sweat Heater Controls	Anti-Sweat Heater Controls	18	8,760	Anti-Sweat Heaters running constantly
Cooling Efficiency		Energy Efficient Case Doors	No heat Case Doors	0	8,760	Anti-Sweat Heaters running constantly
Cooling Efficiency		Advanced Digital Economizer Control (per ton) - Placeholder	0	0	0	0
Cooling Efficiency		Demand Control Ventilation (per ton) - Placeholder	0	0	0	0
Custom Efficiency		***Custom Efficiency***				
Custom Efficiency		Custom Efficiency Electric	High Efficiency Product/system	38,087	4,643	Less Efficient Product/Systems
Custom Efficiency		Custom Studies Electric	0	0	0	0
Data Center Efficiency		***Data Center Efficiency***				
Data Center Efficiency		Data Center Efficiency Study	0	0	0	0
Data Center Efficiency		Data Center Measures	Historical Averages from past custom projects	385,537	7,312	Historical Averages from past custom projects
Data Center Efficiency		Retrofit - EC Plug Fans In-Unit	EC Plug Fan	2,151	8,760	Forward-curved Centrifugal Fan with AC motor
Data Center Efficiency		Retrofit - EC Plug Fans Below-Floor	EC Plug Fan	1,867	8,760	Forward-curved Centrifugal Fan with AC motor
Data Center Efficiency		New- EC Plug Fans In-Unit	EC Plug Fan	2,151	8,760	Forward-curved Centrifugal Fan with AC motor
Data Center Efficiency		New - EC Plug Fans Below-Floor	EC Plug Fan	1,867	8,760	Forward-curved Centrifugal Fan with AC motor
Data Center Efficiency		New Construction - Whole Facility	Highly efficient data center	3,944,444	8,700	Standard efficiency new data center
Data Center Efficiency		Chilled Water Systems Waterside Economizer	Chilled water system with waterside economizer	32,412	8,760	Chilled water system without economizer
Data Center Efficiency		Zero & Thin Client Installations	Server & software at data center along with thin-client or zero-client device replaces desktop	13	7,311	Desktop computers meeting ENERGY STAR 3.0 specifications
Efficiency Controls		***Efficiency Controls***				
Efficiency Controls		Efficiency Controls - Electric	New Digital Controls System	27,741	6,901	Non Digital or Obsolete Digital System
Efficiency Controls		Efficiency Controls - Study Allocation	Study Allocation	0	0	0
Fluid System Optimization		***Fluid System Optimization***				
Fluid System Optimization		Non-Custom Opportunities identified in an FSO study. i.e. recommissioning type adjustments, leaks, waste and demand reduction. study driven credit and revisits	Optimized System	141,503	7,779	Non-Optimized System
Fluid System Optimization		Compressed Air Efficiency Study	Leaks & Waste Found and Repaired	142,361	7,189	Existing System with Leaks & Waste that have not been repaired
Fluid System Optimization		Custom compressed air, pump, fan, blower, vacuum and hydraulic opportunities	New Equipment	113,561	6,257	Old or less efficient systems or equipment
Fluid System Optimization		Cycling Dryers	New Cycling Dryer	2,359	7,188	New Non-Cycling Dryer
Fluid System Optimization		Dewpoint Controls	Purge Control for Heatless Dessicant Dryers	72,549	7,123	No Purge Control for Heatless Dessicant Dryers
Fluid System Optimization		Mist Eliminators	New Mist Eliminator Filter	81,776	7,321	New General Purpose Filter
Fluid System Optimization		No Air Loss Drain	New No-Air Loss Drains	0	6,996	New Electronic Solenoid/Timed Drains
Fluid System Optimization		VFD Air Compressor New	New VFD Compressor	14,011	2,999	New Modulation or load no-load with less than or equal to 2gal of storage per CFM of Capacity
Fluid System Optimization		VFD Air Compressor Upgrade	New VFD Compressor	14,181	3,039	Existing Modulation or load no-load with less than or equal to 2gal of storage per CFM of Capacity
Fluid System Optimization		VFD Compressor HP Reduction	New VFD Compressor of lesser HP than Baseline Unit	22,490	3,528	Existing Modulation or load no-load with less than or equal to 2gal of storage per CFM of Capacity
Fluid System Optimization		Demand-side compressed air, pump, fan, blower, vacuum and hydraulic studies.	Study Completed	148,277	0	No Study Completed
Fluid System Optimization		Constant Speed Motor Controller	Motor with Voltage Controller	4,849	4,849	Motor without Voltage Controller
Fluid System Optimization		New Motor Enhanced	NEMA Premium +1% Efficient Motor	3,074	6,135	NEMA Premium
Fluid System Optimization		Upgrade Motor	NEMA Premium Efficient Motor	15,650	4,806	EPACT Efficient Motor
Fluid System Optimization		Upgrade Motor Enhanced	NEMA Premium +1% Efficient Motor	5,447	5,243	EPACT Efficient Motor
Fluid System Optimization		Variable Frequency Drive	Equipment coupled with an ASD/VFD	7,699	4,643	Equipment without an ASD/VFD
Food Service		***Food Service***				
Food Service		Commercial Dishwasher - Under Counter, Electric Only or Combo Customer	ENERGY STAR qualified unit	1,190	6,570	Conventional unit as defined by ENERGY STAR
Food Service		Commercial Dishwasher - Door Type, Electric Only or Combo Customer	ENERGY STAR qualified unit	3,552	6,570	Conventional unit as defined by ENERGY STAR
Food Service		Hot Food Holding Cabinet	ENERGY STAR qualified unit	261	5,475	Conventional unit as defined by ENERGY STAR
Food Service		Demand Contolled Ventilation - Electric Only or Combo Customer	Commercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HP Motor	11,766	3,307	Commercial kitchen ventilation hoods without Demand Controlled Ventilation with 8.65 HP Motor
Lighting Efficiency		***Lighting Efficiency***	0	0	0	0
Lighting Efficiency		Low Wattage T8 4' lamps - <=28W	T8 25W and 28W Lamps	31	5,335	T8 32W Lamps
Lighting Efficiency		T8 to T8 Lighting Optimization	Fluorescent T8 Fixture with Less Lamps (3,2,1)	63	5,335	Fluorescent T8 Fixture with More Lamps (4,3,2)
Lighting Efficiency		High Bay Fluorescents replacing 150, 175, 250W HID	High Bay Fluorescents With Electronic Ballasts Replacing 250W HID	184	5,335	250W HID Fixture or Smaller
Lighting Efficiency		High Bay Fluorescents replacing 320, 350, 400W HID	High Bay Fluorescents With Electronic Ballasts Replacing 400W HID	328	5,335	310 to 400 W HID Fixture
Lighting Efficiency		High Bay Fluorescents replacing 750W HID	High Bay Fluorescents With Electronic Ballasts Replacing 750W HID	564	5,335	750 W HID Fixture
Lighting Efficiency		High Bay Fluorescents replacing 1000W HID	High Bay Fluorescents With Electronic Ballasts Replacing 1000W HID	762	5,335	1000 W HID Fixture
Lighting Efficiency		Fluorescent Parking Garage, 2 and 3 lamp replacing 150 - 175W HID systems	High Efficiency Fluorescent T8 or T5 Systems	109	8,760	150 or 175W HID Fixture
Lighting Efficiency		Fluorescent Parking Garage, Low Wattage T8 lamps <=28W	T8 25W and 28W Lamps	25	8,760	T8 32W Lamps
Lighting Efficiency		CFL, Pin Based - <=19W	Pin Based CFL	20	5,335	Incandescent
Lighting Efficiency		CFL, Pin Based - 19-32W	Pin Based CFL	44	5,335	Incandescent
Lighting Efficiency		CFL, Pin Based - 33-100W	Pin Based CFL	37	5,335	Incandescent
Lighting Efficiency		CFL, 2-foot Low Wattage - 25 - 28W	PL 25W CFL	33	5,335	PL 40W CFL
Lighting Efficiency		Wall mount occupancy sensor - 50 - 300W Controlled Laod	Lighting Fixture with Occupancy Sensor	87	5,335	Lighting Fixture with Manual Switch
Lighting Efficiency		Wall mount occupancy sensor - 300W+ Controlled Load	Lighting Fixture with Occupancy Sensor	447	5,335	Lighting Fixture with Manual Switch
Lighting Efficiency		Ceiling mount occupancy sensor - 50 - 300W Controlled Laod	Lighting Fixture with Occupancy Sensor	87	5,335	Lighting Fixture with Manual Switch
Lighting Efficiency		Ceiling mount occupancy sensor - 300W+ Controlled Load	Lighting Fixture with Occupancy Sensor	447	5,335	Lighting Fixture with Manual Switch
Lighting Efficiency		Photocell	Lighting Fixture with Photocell	170	5,335	Lighting Fixture with Manual Switch
Lighting Efficiency		Stairwell Fixture with Integral Occupancy Sensor	Stairwell Lighting Fixture with Occupancy Sensor	7	5,335	Stairwell Lighting Fixture
Lighting Efficiency		Exit sign retrofit and replacement	LED/LEC Exit	1	7,602	Incandescent
Lighting Efficiency		LED Interior Fixture <= 25 Watts	LED Downlight Luminaire	21	5,335	Incandescent Luminaire
Lighting Efficiency		LED Interior Fixture - 25W - 50W	LED Downlight Luminaire	47	5,335	Incandescent Luminaire
Lighting Efficiency		LED Refrigerated Case Lighting	LED Strip lighting	51	8,760	T8 or T12 Fluorescent
Lighting Efficiency		LED Pedestrian Signals -9" (Walk/Don't Walk)	LED Pedestrian Signals -9" (Walk/Don't Walk)	8	4,380	Incandescent Pedestrian Signals - Large
Lighting Efficiency		LED Pedestrian Signals -12" (Walk/Don't Walk)	LED Pedestrian Signals -12" (Walk/Don't Walk)	10	4,380	Incandescent Pedestrian Signals - Large
Lighting Efficiency		LED Traffic Balls and Arrows - 8" Red	LED Traffic Balls and Arrows 8" Red	8	4,380	Incandescent Traffic Balls and Arrows 8" Red

Electric Measure Description	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Incremt'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)
Business																			
Business New Construction																			
Average EDA Project - 2017	368,866	4,892	20	$58,722	$0	$214,836	$0.06	27%	6.7	4.9	541,318	$0.108	$0.005	110.7	85.7	$0.00	$0.00	72%	0
Average EDA Project - 2018	268,057	4,555	20	$41,710	$0	$145,391	$0.06	29%	6.7	4.8	366,338	$0.114	$0.006	80.4	62.3	$0.00	$0.00	72%	0
Average EDA Project - 2019	217,222	4,086	20	$32,709	$0	$105,670	$0.06	31%	6.7	4.6	266,254	$0.123	$0.006	65.2	50.5	$0.00	$0.00	72%	70
Average EEB Project - 2017	61,790	3,338	20	$8,743	$0	$23,574	$0.06	37%	6.6	4.2	61,881	$0.141	$0.007	18.5	15.4	-$89.73	$0.00	77%	0
Average EEB Project - 2018	57,730	3,250	20	$8,115	$0	$21,505	$0.06	38%	6.6	4.1	56,286	$0.144	$0.007	17.3	14.4	-$81.62	$0.00	77%	0
Average EEB Project - 2019	60,308	3,025	20	$8,333	$0	$21,008	$0.06	40%	6.7	4.0	54,724	$0.152	$0.008	18.1	15.1	-$79.35	$0.00	77%	52
Commercial Efficiency																			
Average project results from 2015 history	1,716,714	5,913	17	$13,590	$0	$56,886	$0.07	24%	4.9	3.7	151,147	$0.090	$0.005	25.6	22.0	$476.82	$0.00	80%	172
Study Cost Allocations	0	0	0	$138,750	$0	$138,750	$0.07	100%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	4
Phase 2 Customer Contribution	0	0	0	$0	$0	$7,500	$0.07	0%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	4
Behavioral Changes	3,024,892	8,760	1	$0	$0	$0	$0.06	#DIV/0!	0.0	0.0	545,921	$0.000	$0.000	62.3	67.0	$0.00	$0.00	100%	1
Behavioral Changes	-2,016,594	8,760	0	$0	$0	$0	$0.06	#DIV/0!	0.0	0.0	-363,947	$0.000	$0.000	-41.5	-44.7	$0.00	$0.00	100%	1
Cooling Efficiency																			
DX Units	9,285	1,529	20	$1,133	$7,847	$2,137	$0.07	53%	17.8	8.3	1,798	$0.630	$0.032	1.2	1.1	$0.00	$0.00	90%	1,000
RTU Economizer Control with Demand Control Ventilation	2,414	498	15	$310	$0	$1,500	$0.07	21%	37.3	29.6	601	$0.517	$0.034	1.2	1.2	$0.00	$0.00	90%	75
Water-source Heat Pumps	1,944	921	20	$145	$2,010	$497	$0.07	29%	30.2	21.4	246	$0.588	$0.029	0.3	0.3	$0.00	$0.00	90%	150
PTAC Units	796	1,013	20	$34	$1,232	$185	$0.07	19%	63.0	51.3	44	$0.780	$0.039	0.0	0.0	$0.00	$0.00	90%	120
Scroll/Screw Chiller	81,797	1,092	20	$1,545	$41,416	$12,692	$0.07	12%	29.6	26.0	6,405	$0.241	$0.012	5.9	5.7	$0.00	$0.00	90%	2
Centrifugal Chiller	211,153	5,978	20	$8,249	$144,784	$13,330	$0.07	62%	1.8	0.7	109,357	$0.075	$0.004	18.3	17.7	$0.00	$0.00	90%	5
Air Cooled Chillers	156,528	2,422	20	$4,143	$66,720	$24,698	$0.07	17%	11.0	9.1	33,692	$0.123	$0.006	13.9	13.5	$0.00	$0.00	90%	19
Cooling Studies				$10,000	$0	$14,501	$0.07	69%			0			0.0	0.0	$0.00	$0.00	100%	9
Recommissioning Studies				$10,081	$0	$12,526	$0.07	80%			0			0.0	0.0	$0.00	$0.00	200%	1
Chiller VFD Retrofit	485,070	1,021	15	$23,769	$138,359	$61,460	$0.07	39%	5.7	3.5	161,810	$0.147	$0.010	158.5	-13.5	$0.00	$0.00	-8%	1
Custom Cooling Projects	112,638	3,722	18	$9,034	$7,961	$33,935	$0.07	27%	5.8	4.2	85,090	$0.106	$0.006	22.9	9.8	$202.06	$0.00	40%	13
ERV Install on RTU/AHU for reduced cooling load	27,679	338	15	$11,193	$0	$3,732	$0.07	300%	9.1	-18.3	6,103	$1.834	$0.122	18.1	17.5	$0.00	$0.00	90%	3
Mini-Split Heat Pump	1,647	1,265	18	$227	$3,440	$512	$0.07	44%	10.8	6.0	707	$0.321	$0.018	0.6	0.5	$0.00	$0.00	90%	0
Mini-Split AC - Data Center	1,647	5,236	18	$108	$3,440	$512	$0.07	21%	2.6	2.1	2,926	$0.037	$0.002	0.6	0.6	$0.00	$0.00	100%	0
ECM Motors - Medium Temp Display Case	72	8,672	15	$40	$0	$141	$0.07	28%	5.1	3.6	414	$0.097	$0.006	0.0	0.1	$0.00	$0.00	99%	20
ECM Motors - Low Temp Display Case	84	8,672	15	$40	$0	$141	$0.07	28%	4.3	3.1	489	$0.082	$0.005	0.1	0.1	$0.00	$0.00	99%	7
ECM Motors - Medium Temp Walk-in, Evap fan <= 15" Diameter	137	8,585	15	$70	$0	$269	$0.07	26%	5.1	3.7	793	$0.088	$0.006	0.1	0.1	$0.00	$0.00	98%	51
ECM Motors - Low Temp Walk-in, Evap fan <= 15" Diameter	161	8,585	15	$70	$0	$269	$0.07	26%	4.3	3.2	936	$0.075	$0.005	0.1	0.1	$0.00	$0.00	98%	22
ECM Motors - Medium Temp Walk-in, Evap fan > 15" Diameter	138	8,585	15	$70	$0	$269	$0.07	26%	6.6	4.9	605	$0.116	$0.008	0.1	0.1	$0.00	$0.00	98%	16
ECM Motors - Low Temp Walk-in, Evap fan > 15" Diameter	163	8,585	15	$70	$0	$269	$0.07	26%	5.6	4.2	714	$0.098	$0.007	0.1	0.1	$0.00	$0.00	98%	16
Anti-Sweat Heater Controls	179	8,760	12	$60	$0	$300	$0.07	20%	3.2	2.5	1,414	$0.042	$0.004	0.2	0.2	$0.00	$0.00	90%	120
Energy Efficient Case Doors	179	8,760	10	$125	$0	$538	$0.07	23%	5.1	3.9	1,571	$0.080	$0.008	0.2	0.2	$0.00	$0.00	100%	156
Advanced Digital Economizer Control (per ton) - Placeholder	0	0	0	$0	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0
Demand Control Ventilation (per ton) - Placeholder	0	0	0	$0	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0
Custom Efficiency																			
Custom Efficiency Electric	57,777	4,643	19	$6,439	$49,905	$26,976	$0.07	24%	1.5	1.2	91,420	$0.070	$0.004	19.7	15.7	$10,688.27	$0.00	74%	50
Custom Studies Electric	0	0	0	$9,808	$0	$19,069	$0.07	51%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	2
Data Center Efficiency																			
Data Center Efficiency Study	0	0	0	$16,301	$0	$21,735	$0.07	75%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	10
Data Center Measures	421,973	7,312	11	$12,105	$255,991	$53,346	$0.07	23%	2.8	2.1	266,416	$0.045	$0.004	36.4	26.9	$1,392.65	$0.00	69%	20
Retrofit - EC Plug Fans In-Unit	2,711	8,662	10	$1,200	$0	$2,787	$0.07	43%	9.0	5.1	4,634	$0.259	$0.026	0.6	0.6	$0.00	$0.00	100%	5
Retrofit - EC Plug Fans Below-Floor	2,794	8,603	10	$1,200	$0	$2,787	$0.07	43%	5.4	3.1	7,681	$0.156	$0.016	0.9	1.0	$0.00	$0.00	100%	5
New- EC Plug Fans In-Unit	2,675	8,705	20	$700	$0	$1,700	$0.07	41%	5.7	3.4	4,439	$0.158	$0.008	0.5	0.6	$0.00	$0.00	100%	12
New - EC Plug Fans Below-Floor	2,735	8,671	20	$700	$0	$1,700	$0.07	41%	3.5	2.0	7,357	$0.095	$0.005	0.9	0.9	$0.00	$0.00	100%	9
New Construction - Whole Facility	4,000,000	8,700	11	$29,034	$0	$96,780	$0.07	30%	3.0	2.1	483,333	$0.060	$0.005	55.6	56.8	$0.00	$0.00	95%	6
Chilled Water Systems Waterside Economizer	53,000	8,760	20	$21,200	$0	$65,571	$0.07	32%	5.0	3.4	180,351	$0.118	$0.006	20.6	0.0	$0.00	$0.00	0%	0
Zero & Thin Client Installations	28	7,311	10	$10	$600	$117	$0.07	9%	3.1	2.8	111		$0.051	0.0	0.0	$30.50	-$0.44	100%	13
Efficiency Controls																			
Efficiency Controls - Electric	46,236	6,901	15	$11,773	$0	$45,453	$0.06	26%	5.2	3.9	127,631	$0.092	$0.006	18.5	4.2	$1,117.07	$0.00	21%	67
Efficiency Controls - Study Allocation	0	0	0	$2,511	$0	$3,835	$0.06	65%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	3
Fluid System Optimization																			
Non-Custom Opportunities identified in an FSO study. i.e. recommissioning type adjustments, leaks, waste and demand reduction. study driven credit and revisits	148,339	7,779	5	$0	$0	$1,163	$0.07	0%	0.3	0.3	53,182	$0.000	$0.000	6.8	5.2	$0.00	$0.00	71%	9
Compressed Air Efficiency Study	148,339	7,189	5	$4,460	$0	$9,395	$0.07	47%	3.2	1.7	42,972	$0.104	$0.021	6.0	6.4	$0.00	$0.00	100%	40
Custom compressed air, pump, fan, blower, vacuum and hydraulic opportunities	148,339	6,257	20	$11,928	$0	$47,846	$0.07	25%	3.2	2.4	217,607	$0.055	$0.003	34.8	25.3	$0.00	$0.00	68%	35
Cycling Dryers	3,435	7,188	20	$745	$7,374	$1,332	$0.07	56%	2.5	1.1	7,735	$0.096	$0.005	1.1	1.2	$0.00	$0.00	100%	67
Dewpoint Controls	83,087	7,123	15	$1,000	$0	$3,474	$0.07	29%	0.7	0.5	75,065	$0.013	$0.001	10.5	11.3	$0.00	$0.00	100%	8
Mist Eliminators	83,126	7,321	20	$2,100	$1,351	$4,479	$0.07	47%	6.1	3.3	9,890	$0.212	$0.011	1.4	1.5	$61.92	$0.00	100%	40
No Air Loss Drain	517	6,996	13	$200	$125	$448	$0.07	45%	1.8	1.0	3,616	$0.055	$0.004	0.5	0.4	$0.00	$0.00	68%	60
VFD Air Compressor New	20,064	2,999	20	$2,622	$10,768	$5,334	$0.07	49%	4.3	2.2	18,155	$0.144	$0.007	6.1	5.8	$0.00	$0.00	89%	41
VFD Air Compressor Upgrade	20,666	3,039	20	$5,655	$0	$18,009	$0.07	31%	13.5	9.3	19,709	$0.287	$0.014	6.5	6.2	$0.00	$0.00	89%	23
VFD Compressor HP Reduction	36,691	3,528	20	$6,500	$0	$21,666	$0.07	30%	6.4	4.5	50,102	$0.130	$0.006	14.2	13.6	$0.00	$0.00	89%	6
Demand-side compressed air, pump, fan, blower, vacuum and hydraulic studies.	148,339	0	5	$9,089	$0	$9,089	$0.07	100%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.1	0.1	$0.00	$0.00	88%	12
Constant Speed Motor Controller	5,717	4,878	20	$345	$0	$1,188	$0.08	29%	3.6	2.6	4,376	$0.079	$0.004	0.9	0.7	$0.00	$0.00	78%	1
New Motor Enhanced	3,126	6,135	20	$40	$797	$181	$0.08	22%	7.5	5.9	319	$0.125	$0.006	0.1	0.0	$0.00	$0.00	78%	1
Upgrade Motor	15,950	4,806	20	$926	$0	$2,362	$0.08	39%	21.8	13.2	1,440	$0.643	$0.032	0.3	0.3	$0.00	$0.00	78%	1
Upgrade Motor Enhanced	5,663	5,243	20	$498	$0	$1,407	$0.08	35%	16.4	10.6	1,136	$0.438	$0.022	0.2	0.2	$0.00	$0.00	78%	1
Variable Frequency Drive	11,443	4,643	15	$1,531	$0	$5,393	$0.08	28%	4.1	2.9	17,385	$0.088	$0.006	3.7	3.1	$0.00	$0.00	78%	1
Food Service																			
Commercial Dishwasher - Under Counter, Electric Only or Combo Customer	1,592	6,570	10	$195	$4,925	$82	$0.07	238%	0.4	-0.5	2,644	$0.074	$0.007	0.4	0.4	$35.00	$0.00	86%	14
Commercial Dishwasher - Door Type, Electric Only or Combo Customer	5,463	6,570	15	$208	$6,729	$360	$0.07	58%	0.3	0.1	12,555	$0.017	$0.001	1.9	1.8	$234.98	$0.00	86%	9
Hot Food Holding Cabinet	640	5,475	12	$400	$2,069	$1,713	$0.07	23%	12.3	9.5	2,073	$0.193	$0.016	0.4	0.3	$0.00	$0.00	86%	41
Demand Contolled Ventilation - Electric Only or Combo Customer	19,597	3,307	20	$865	$0	$16,019	$0.07	5%	3.9	3.7	25,896	$0.033	$0.002	7.8	4.2	$0.00	$2,380.02	49%	9
Lighting Efficiency	0	0	0.000	$0	$0	$0	$0.11	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0
Low Wattage T8 4' lamps - <=28W	37	5,335	5	$1	$0	$4	$0.07	13%	1.7	1.5	34	$0.015	$0.003	0.0	0.0	$0.00	-$0.19	84%	121
T8 to T8 Lighting Optimization	113	5,335	20	$12	$0	$43	$0.07	28%	2.4	1.7	269	$0.045	$0.002	0.1	0.0	$0.00	-$1.47	84%	11
High Bay Fluorescents replacing 150, 175, 250W HID	357	5,335	20	$35	$0	$164	$0.07	21%	2.6	2.1	924	$0.038	$0.002	0.2	0.2	$0.00	-$5.06	84%	0
High Bay Fluorescents replacing 320, 350, 400W HID	508	5,335	20	$50	$0	$215	$0.07	23%	3.3	2.5	962	$0.052	$0.003	0.2	0.2	$0.00	-$5.26	84%	11
High Bay Fluorescents replacing 750W HID	1,039	5,335	20	$80	$0	$392	$0.07	20%	2.3	1.8	2,533	$0.032	$0.002	0.5	0.4	$0.00	-$13.86	84%	2
High Bay Fluorescents replacing 1000W HID	1,352	5,335	20	$100	$0	$430	$0.07	23%	2.0	1.6	3,143	$0.032	$0.002	0.6	0.5	$0.00	-$17.20	84%	1
Fluorescent Parking Garage, 2 and 3 lamp replacing 150 - 175W HID systems	192	8,760	20	$50	$0	$169	$0.07	30%	3.2	2.3	722	$0.069	$0.003	0.1	0.1	$0.00	$0.00	100%	1
Fluorescent Parking Garage, Low Wattage T8 lamps <=28W	30	8,760	4	$1	$0	$4	$0.07	13%	1.2	1.1	45	$0.011	$0.003	0.0	0.0	$0.00	$0.00	100%	6
CFL, Pin Based - <=19W	49	5,335	20	$2	$0	$9	$0.07	22%	0.9	0.7	154	$0.013	$0.001	0.0	0.0	$0.00	-$0.84	84%	1
CFL, Pin Based - 19-32W	97	5,335	20	$3	$0	$9	$0.07	32%	0.5	0.3	286	$0.010	$0.001	0.1	0.0	$0.00	-$0.84	84%	5
CFL, Pin Based - 33-100W	92	5,335	20	$4	$0	$12	$0.07	32%	0.6	0.4	295	$0.014	$0.001	0.1	0.0	$0.00	-$1.61	84%	5
CFL, 2-foot Low Wattage - 25 - 28W	50	5,335	5	$1	$0	$12	$0.07	4%	1.9	1.9	90	$0.006	$0.001	0.0	0.0	$0.00	-$0.49	84%	1
Wall mount occupancy sensor - 50 - 300W Controlled Laod	125	5,335	8	$15	$0	$55	$0.07	27%	4.1	3.0	200	$0.075	$0.009	0.0	0.0	$0.00	-$1.09	84%	4
Wall mount occupancy sensor - 300W+ Controlled Load	638	5,335	8	$25	$0	$55	$0.07	45%	0.8	0.4	1,021	$0.024	$0.003	0.2	0.2	$0.00	-$5.59	84%	1
Ceiling mount occupancy sensor - 50 - 300W Controlled Laod	125	5,335	8	$30	$0	$125	$0.07	24%	9.3	7.0	200	$0.150	$0.019	0.0	0.0	$0.00	-$1.09	84%	18
Ceiling mount occupancy sensor - 300W+ Controlled Load	638	5,335	8	$40	$0	$125	$0.07	32%	1.8	1.2	1,021	$0.039	$0.005	0.2	0.2	$0.00	-$5.59	84%	5
Photocell	263	5,335	8	$25	$0	$65	$0.07	38%	1.9	1.2	494	$0.051	$0.006	0.1	0.1	$0.00	-$2.70	84%	1
Stairwell Fixture with Integral Occupancy Sensor	70	5,335	14	$75	$0	$306	$0.07	25%	13.3	10.1	339	$0.221	$0.015	0.1	0.1	$0.00	-$1.86	84%	1
Exit sign retrofit and replacement	44	7,602	20	$25	$0	$82	$0.07	30%	3.8	2.6	321	$0.078	$0.004	0.0	0.0	$0.00	-$1.76	100%	6
LED Interior Fixture <= 25 Watts	53	5,335	20	$35	$0	$97	$0.07	36%	8.2	5.2	175	$0.200	$0.010	0.0	0.0	$0.00	-$0.96	84%	18
LED Interior Fixture - 25W - 50W	82	5,335	20	$50	$0	$215	$0.07	23%	17.1	13.1	186	$0.269	$0.013	0.0	0.0	$0.00	-$1.02	84%	8
LED Refrigerated Case Lighting	139	8,760	20	$45	$0	$164	$0.07	27%	2.9	2.1	771	$0.058	$0.003	0.1	0.1	$0.00	$0.00	100%	5
LED Pedestrian Signals -9" (Walk/Don't Walk)	69	4,380	20	$30	$0	$80	$0.07	38%	4.1	2.6	267	$0.112	$0.006	0.1	0.0	$0.00	$0.00	21%	1
LED Pedestrian Signals -12" (Walk/Don't Walk)	116	4,380	20	$40	$0	$110	$0.07	36%	3.2	2.1	464	$0.086	$0.004	0.1	0.0	$0.00	$0.00	21%	1
LED Traffic Balls and Arrows - 8" Red	69	4,380	20	$25	$0	$70	$0.07	36%	3.6	2.3	267	$0.094	$0.005	0.1	0.0	$0.00	$0.00	55%	1

Electric Measure Description	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Business														
Business New Construction														
Average EDA Project - 2017	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Average EDA Project - 2018	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Average EDA Project - 2019	70	70	70	100%	100%	100%	3,532	19,954,818	2,289,635	7,396,876	3,532	19,954,818	2,289,635	7,396,876
Average EEB Project - 2017	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Average EEB Project - 2018	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Average EEB Project - 2019	52	52	52	100%	100%	100%	784	3,046,713	433,310	1,092,415	784	3,046,713	433,310	1,092,415
Commercial Efficiency														
Average project results from 2015 history	172	172	172	100%	100%	100%	3,780	27,834,366	2,337,511	9,784,388	3,780	27,834,366	2,337,511	9,784,388
Study Cost Allocations	4	4	4	100%	100%	100%	0	0	555,000	555,000	0	0	555,000	555,000
Phase 2 Customer Contribution	4	4	4	100%	100%	100%	0	0	0	30,000	0	0	0	30,000
Behavioral Changes	1	1	1	100%	100%	100%	67	584,498	0	0	67	584,498	0	0
Behavioral Changes	1	1	1	100%	100%	100%	-45	-389,665	0	0	-45	-389,665	0	0
Cooling Efficiency														
DX Units	1,177	1,000	1,177	100%	100%	100%	1,340	2,265,854	1,333,736	2,515,323	1,340	2,265,854	1,333,736	2,515,323
RTU Economizer Control with Demand Control Ventilation	130	75	130	100%	100%	100%	152	83,584	40,353	195,000	152	83,584	40,353	195,000
Water-source Heat Pumps	160	150	160	100%	100%	100%	41	42,079	23,122	79,499	41	42,079	23,122	79,499
PTAC Units	140	120	140	100%	100%	100%	6	6,568	4,784	25,853	6	6,568	4,784	25,853
Scroll/Screw Chiller	2	2	2	100%	100%	100%	11	13,715	3,089	25,383	11	13,715	3,089	25,383
Centrifugal Chiller	7	5	7	100%	100%	100%	124	819,592	57,743	93,313	124	819,592	57,743	93,313
Air Cooled Chillers	22	19	22	100%	100%	100%	296	793,608	91,135	543,356	296	793,608	91,135	543,356
Cooling Studies	9	9	9	100%	100%	100%	0	0	90,000	130,512	0	0	90,000	130,512
Recommissioning Studies	1	1	1	100%	100%	100%	0	0	10,081	12,526	0	0	10,081	12,526
Chiller VFD Retrofit	1	1	1	100%	100%	100%	-13	173,244	23,769	61,460	-13	173,244	23,769	61,460
Custom Cooling Projects	15	13	15	100%	100%	100%	147	1,366,535	135,513	509,032	147	1,366,535	135,513	509,032
ERV Install on RTU/AHU for reduced cooling load	3	3	3	100%	100%	100%	52	19,602	33,579	11,197	52	19,602	33,579	11,197
Mini-Split Heat Pump	216	0	216	100%	100%	100%	117	163,212	49,003	110,458	117	163,212	49,003	110,458
Mini-Split AC - Data Center	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
ECM Motors - Medium Temp Display Case	29	20	29	100%	100%	100%	1	12,861	1,160	4,081	1	12,861	1,160	4,081
ECM Motors - Low Temp Display Case	12	7	12	100%	100%	100%	1	6,278	480	1,689	1	6,278	480	1,689
ECM Motors - Medium Temp Walk-in, Evap fan <= 15" Diameter	74	51	74	100%	100%	100%	7	62,838	5,180	19,907	7	62,838	5,180	19,907
ECM Motors - Low Temp Walk-in, Evap fan <= 15" Diameter	34	22	34	100%	100%	100%	4	34,058	2,380	9,146	4	34,058	2,380	9,146
ECM Motors - Medium Temp Walk-in, Evap fan > 15" Diameter	24	16	24	100%	100%	100%	2	15,555	1,680	6,456	2	15,555	1,680	6,456
ECM Motors - Low Temp Walk-in, Evap fan > 15" Diameter	24	16	24	100%	100%	100%	2	18,349	1,680	6,456	2	18,349	1,680	6,456
Anti-Sweat Heater Controls	173	120	173	100%	100%	100%	27	261,952	10,380	51,900	27	261,952	10,380	51,900
Energy Efficient Case Doors	173	156	173	100%	100%	100%	33	291,057	21,625	92,988	33	291,057	21,625	92,988
Advanced Digital Economizer Control (per ton) - Placeholder	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Demand Control Ventilation (per ton) - Placeholder	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Custom Efficiency														
Custom Efficiency Electric	50	50	50	100%	100%	100%	783	4,894,015	321,956	1,348,797	783	4,894,015	321,956	1,348,797
Custom Studies Electric	2	2	2	100%	100%	100%	0	0	19,615	38,139	0	0	19,615	38,139
Data Center Efficiency														
Data Center Efficiency Study	10	10	10	100%	100%	100%	0	0	163,014	217,352	0	0	163,014	217,352
Data Center Measures	20	20	20	100%	100%	100%	538	5,704,829	242,105	1,066,915	538	5,704,829	242,105	1,066,915
Retrofit - EC Plug Fans In-Unit	10	5	10	100%	100%	100%	6	49,617	12,000	27,867	6	49,617	12,000	27,867
Retrofit - EC Plug Fans Below-Floor	10	5	10	100%	100%	100%	10	82,239	12,000	27,867	10	82,239	12,000	27,867
New- EC Plug Fans In-Unit	48	12	48	100%	100%	100%	27	228,152	33,600	81,600	27	228,152	33,600	81,600
New - EC Plug Fans Below-Floor	36	9	36	100%	100%	100%	34	283,584	25,200	61,200	34	283,584	25,200	61,200
New Construction - Whole Facility	6	6	6	100%	100%	100%	341	3,104,925	174,205	580,682	341	3,104,925	174,205	580,682
Chilled Water Systems Waterside Economizer	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Zero & Thin Client Installations	350	13	350	100%	100%	100%	6	41,682	3,500	40,950	6	41,682	3,500	40,950
Efficiency Controls														
Efficiency Controls - Electric	67	67	67	100%	100%	100%	280	9,155,555	788,760	3,045,357	280	9,155,555	788,760	3,045,357
Efficiency Controls - Study Allocation	3	3	3	100%	100%	100%	0	0	7,534	11,506	0	0	7,534	11,506
Fluid System Optimization														
Non-Custom Opportunities identified in an FSO study. i.e. recommissioning type adjustments, leaks, waste and demand reduction. study driven credit and revisits	9	9	9	100%	100%	100%	49	540,703	0	11,045	49	540,703	0	11,045
Compressed Air Efficiency Study	40	40	40	100%	100%	100%	257	1,840,349	178,400	375,798	257	1,840,349	178,400	375,798
Custom compressed air, pump, fan, blower, vacuum and hydraulic opportunities	35	35	35	100%	100%	100%	886	8,154,440	417,466	1,674,601	886	8,154,440	417,466	1,674,601
Cycling Dryers	70	67	70	100%	100%	100%	81	579,744	52,127	93,252	81	579,744	52,127	93,252
Dewpoint Controls	8	8	8	100%	100%	100%	91	642,957	8,000	27,789	91	642,957	8,000	27,789
Mist Eliminators	40	40	40	100%	100%	100%	58	423,543	84,000	179,141	58	423,543	84,000	179,141
No Air Loss Drain	63	60	63	100%	100%	100%	24	243,917	12,600	28,224	24	243,917	12,600	28,224
VFD Air Compressor New	42	41	42	100%	100%	100%	243	816,375	110,108	224,007	243	816,375	110,108	224,007
VFD Air Compressor Upgrade	25	23	25	100%	100%	100%	155	527,539	141,375	450,229	155	527,539	141,375	450,229
VFD Compressor HP Reduction	6	6	6	100%	100%	100%	81	321,851	39,000	129,995	81	321,851	39,000	129,995
Demand-side compressed air, pump, fan, blower, vacuum and hydraulic studies.	12	12	12	100%	100%	100%	1	0	109,557	109,557	1	0	109,557	109,557
Constant Speed Motor Controller	1	1	1	100%	100%	100%	1	4,685	345	1,188	1	4,685	345	1,188
New Motor Enhanced	1	1	1	100%	100%	100%	0	342	40	181	0	342	40	181
Upgrade Motor	1	1	1	100%	100%	100%	0	1,541	926	2,362	0	1,541	926	2,362
Upgrade Motor Enhanced	1	1	1	100%	100%	100%	0	1,217	498	1,407	0	1,217	498	1,407
Variable Frequency Drive	1	1	1	100%	100%	100%	3	18,613	1,531	5,393	3	18,613	1,531	5,393
Food Service														
Commercial Dishwasher - Under Counter, Electric Only or Combo Customer	14	14	14	100%	100%	100%	5	39,636	2,727	1,144	5	39,636	2,727	1,144
Commercial Dishwasher - Door Type, Electric Only or Combo Customer	9	9	9	100%	100%	100%	16	120,979	1,870	3,237	16	120,979	1,870	3,237
Hot Food Holding Cabinet	41	41	41	100%	100%	100%	14	90,985	16,400	70,233	14	90,985	16,400	70,233
Demand Contolled Ventilation - Electric Only or Combo Customer	9	9	9	100%	100%	100%	37	249,533	7,785	144,169	37	249,533	7,785	144,169
Lighting Efficiency	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Low Wattage T8 4' lamps - <=28W	17,000	121	17,000	100%	100%	100%	98	623,100	8,500	68,000	98	623,100	8,500	68,000
T8 to T8 Lighting Optimization	1,500	11	1,500	100%	100%	100%	68	432,178	18,000	64,800	68	432,178	18,000	64,800
High Bay Fluorescents replacing 150, 175, 250W HID	50	0	50	100%	100%	100%	8	49,454	1,750	8,198	8	49,454	1,750	8,198
High Bay Fluorescents replacing 320, 350, 400W HID	1,500	11	1,500	100%	100%	100%	244	1,544,803	75,000	321,819	244	1,544,803	75,000	321,819
High Bay Fluorescents replacing 750W HID	258	2	258	100%	100%	100%	110	699,607	20,640	101,147	110	699,607	20,640	101,147
High Bay Fluorescents replacing 1000W HID	35	1	35	100%	100%	100%	19	117,780	3,500	15,053	19	117,780	3,500	15,053
Fluorescent Parking Garage, 2 and 3 lamp replacing 150 - 175W HID systems	50	1	50	100%	100%	100%	4	38,655	2,500	8,437	4	38,655	2,500	8,437
Fluorescent Parking Garage, Low Wattage T8 lamps <=28W	801	6	801	100%	100%	100%	4	38,702	401	3,204	4	38,702	401	3,204
CFL, Pin Based - <=19W	5	1	5	100%	100%	100%	0	823	10	46	0	823	10	46
CFL, Pin Based - 19-32W	642	5	642	100%	100%	100%	31	196,432	1,926	5,928	31	196,432	1,926	5,928
CFL, Pin Based - 33-100W	600	5	600	100%	100%	100%	30	189,374	2,400	7,404	30	189,374	2,400	7,404
CFL, 2-foot Low Wattage - 25 - 28W	5	1	5	100%	100%	100%	0	480	3	59	0	480	3	59
Wall mount occupancy sensor - 50 - 300W Controlled Laod	500	4	500	100%	100%	100%	17	106,891	7,500	27,500	17	106,891	7,500	27,500
Wall mount occupancy sensor - 300W+ Controlled Load	25	1	25	100%	100%	100%	4	27,330	625	1,375	4	27,330	625	1,375
Ceiling mount occupancy sensor - 50 - 300W Controlled Laod	2,500	18	2,500	100%	100%	100%	84	534,457	75,000	312,500	84	534,457	75,000	312,500
Ceiling mount occupancy sensor - 300W+ Controlled Load	600	5	600	100%	100%	100%	103	655,930	24,000	75,000	103	655,930	24,000	75,000
Photocell	25	1	25	100%	100%	100%	2	13,223	625	1,625	2	13,223	625	1,625
Stairwell Fixture with Integral Occupancy Sensor	10	1	10	100%	100%	100%	1	3,634	750	3,060	1	3,634	750	3,060
Exit sign retrofit and replacement	750	6	750	100%	100%	100%	34	257,605	18,750	61,504	34	257,605	18,750	61,504
LED Interior Fixture <= 25 Watts	2,500	18	2,500	100%	100%	100%	74	468,390	87,500	241,817	74	468,390	87,500	241,817
LED Interior Fixture - 25W - 50W	1,000	8	1,000	100%	100%	100%	31	199,214	50,000	215,252	31	199,214	50,000	215,252
LED Refrigerated Case Lighting	700	5	700	100%	100%	100%	66	578,123	31,500	114,625	66	578,123	31,500	114,625
LED Pedestrian Signals -9" (Walk/Don't Walk)	5	1	5	100%	100%	100%	0	1,430	150	400	0	1,430	150	400
LED Pedestrian Signals -12" (Walk/Don't Walk)	5	1	5	100%	100%	100%	0	2,485	200	550	0	2,485	200	550
LED Traffic Balls and Arrows - 8" Red	5	1	5	100%	100%	100%	0	1,430	125	350	0	1,430	125	350

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Incremt'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)
Lighting Efficiency		LED Traffic Balls and Arrows - 12" Red	LED Traffic Balls and Arrows 12" Red	11	4,380	Incandescent Traffic Balls and Arrows 12" Red	135	4,380	20	$25	$0	$90	$0.07	28%	2.3	1.6	543	$0.046	$0.002
Lighting Efficiency		LED Traffic Balls and Arrows - 8" Green	LED Traffic Balls and Arrows 8" Green	8	4,380	Incandescent Traffic Balls and Arrows 8" Green	69	4,380	20	$32	$0	$70	$0.07	46%	3.6	1.9	267	$0.120	$0.006
Lighting Efficiency		LED Traffic Balls and Arrows - 12" Green	LED Traffic Balls and Arrows 12" Green	11	4,380	Incandescent Traffic Balls and Arrows 12" Green	135	4,380	20	$32	$0	$90	$0.07	36%	2.3	1.5	543	$0.059	$0.003
Lighting Efficiency		LED Traffic Arrows - 12" Red	LED Traffic Arrows 12" Red	11	4,380	Incandescent Traffic Arrows 12" Red	135	4,380	20	$50	$0	$90	$0.07	56%	2.3	1.0	543	$0.092	$0.005
Lighting Efficiency		LED Parking Garage lighting - 25W - 60W	LED Parking Garage Fixture	41	8,760	HID - HPS, MH, MV, PSMH	179	8,760	20	$135	$0	$352	$0.07	38%	4.0	2.5	1,208	$0.112	$0.006
Lighting Efficiency		LED Parking Garage lighting - 61W - 83W	LED Parking Garage Fixture	71	8,760	HID - HPS, MH, MV, PSMH	280	8,760	20	$150	$0	$425	$0.07	35%	3.2	2.1	1,829	$0.082	$0.004
Lighting Efficiency		Integral Occupancy Sensor - 1 per fixture and installed as a manufacturer option	Lighting Fixture with Integral Occupancy Sensor	35	5,335	Lighting Fixture with Manual Switch	51	5,335	8	$20	$0	$38	$0.07	53%	6.8	3.2	81	$0.247	$0.031
Lighting Efficiency		Integral Photo Sensor – 1 per fixture and installed as a manufacturer option	Lighting Fixture with Integral Photo Sensor	33	5,335	Lighting Fixture with Manual Switch	51	5,335	8	$8	$0	$13	$0.07	64%	1.9	0.7	95	$0.084	$0.011
Lighting Efficiency		Integral Occupancy & Photo Sensor – 1 per fixture and installed as a manufacturer option	Lighting Fixture with Integral Photo and Occupancy Sensor	31	5,335	Lighting Fixture with Manual Switch	51	5,335	8	$28	$0	$50	$0	$1	6.9	3.1	107	$0.262	$0.033
Lighting Efficiency		LED High-Bay Luminaires - 95 - 189W	LED High Bay 95-189W	177	5,335	HID Fixture <= 250W or Fluorescent	436	5,335	20	$135	$0	$406	$0.07	33%	4.4	2.9	1,378	$0.098	$0.005
Lighting Efficiency		LED High-Bay Luminaires - 190 - 290W	LED High Bay 190-290W	297	5,335	HID Fixture <= 400W or Fluorescent	511	5,335	20	$150	$0	$682	$0.07	22%	8.8	6.9	1,140	$0.132	$0.007
Lighting Efficiency		LED High-Bay Luminaires - 291 - 464W	LED High Bay 291-464W	454	5,335	HID Fixture <= 750W or Fluorescent	1,027	5,335	20	$200	$0	$1,042	$0.07	19%	5.0	4.1	3,060	$0.065	$0.003
Lighting Efficiency		LED High-Bay Luminaires - 465 - 625W	LED High Bay 465-625W	671	5,335	HID Fixture <= 1000W or Fluorescent	1,334	5,335	20	$250	$0	$1,541	$0.07	16%	6.5	5.4	3,537	$0.071	$0.004
Lighting Efficiency		Retrofit Kits for LED High-Bay Luminaires - 95 - 189W	LED High Bay Retrofit Kit 95-189W	177	5,335	HID Fixture <= 250W or Fluorescent	436	5,335	20	$40	$0	$322	$0.07	12%	3.5	3.0	1,378	$0.029	$0.001
Lighting Efficiency		Retrofit Kits for LED High-Bay Luminaires - 190 - 290W	LED High Bay Retrofit Kit 190-290W	295	5,335	HID Fixture <= 400W or Fluorescent	663	5,335	20	$50	$0	$427	$0.07	12%	3.2	2.8	1,962	$0.025	$0.001
Lighting Efficiency		Retrofit Kits for LED High-Bay Luminaires - 291 - 464W	LED High Bay Retrofit Kit 291-464W	454	5,335	HID Fixture <= 750W or Fluorescent	1,027	5,335	20	$80	$0	$569	$0.07	14%	2.8	2.4	3,060	$0.026	$0.001
Lighting Efficiency		Retrofit Kits for LED High-Bay Luminaires - 465 - 625W	LED High Bay Retrofit Kit 465-625W	671	5,335	HID Fixture <= 1000W or Fluorescent	1,334	5,335	20	$160	$0	$763	$0.07	21%	3.2	2.5	3,537	$0.045	$0.002
Lighting Efficiency		LED Tube Type A 2 foot	LED 2 Foot Tube Instafit	21	5,335	Fluorescent Lamps	32	5,335	8	$2	$6	$4	$0.07	48%	1.0	0.5	59	$0.034	$0.004
Lighting Efficiency		LED Tube Type C 2 foot	LED 2 Foot Tube External Driver Retrofit Kits	11	5,335	Fluorescent Lamps	20	5,335	8	$5	$0	$22	$0.07	23%	7.2	5.6	44	$0.113	$0.014
Lighting Efficiency		LED Tube Type A 4 foot	LED 4 Foot Tube Instafit	22	5,335	Fluorescent Lamps	34	5,335	8	$2	$3	$6	$0.07	33%	1.3	0.9	67	$0.030	$0.004
Lighting Efficiency		LED Tube Type C 4 foot	LED 4 Foot Tube External Driver Retrofit Kits	22	5,335	Fluorescent Lamps	36	5,335	8	$5	$0	$25	$0.07	20%	5.0	4.0	75	$0.067	$0.008
Lighting Efficiency		LED Street lighting - 30-44W	LED Street Light Fixture	37	4,903	70W HPS Street Light Fixture	90	4,903	20	$30	$0	$395	$0.07	8%	20.9	19.3	258	$0.116	$0.006
Lighting Efficiency		LED Street lighting - 45-55W	LED Street Light Fixture	50	4,903	100W HPS Street Light Fixture	128	4,903	20	$40	$0	$418	$0.07	10%	15.0	13.6	382	$0.105	$0.005
Lighting Efficiency		LED Street lighting - 56-79W	LED Street Light Fixture	75	4,903	150W HID Fixture	181	4,903	20	$50	$0	$464	$0.07	11%	12.2	10.9	522	$0.096	$0.005
Lighting Efficiency		LED Street lighting - 80-109W	LED Street Light Fixture	104	4,903	175W HID Fixture	202	4,903	20	$75	$0	$518	$0.07	14%	14.8	12.7	478	$0.157	$0.008
Lighting Efficiency		LED Street lighting - 110-139W	LED Street Light Fixture	125	4,903	250W HID Fixture	287	4,903	20	$100	$0	$554	$0.07	18%	9.5	7.8	797	$0.125	$0.006
Lighting Efficiency		LED Street lighting - 140-209W	LED Street Light Fixture	164	4,903	400W HID Fixture	450	4,903	20	$125	$0	$626	$0.07	20%	6.1	4.9	1,404	$0.089	$0.004
Lighting Efficiency		LED Area lighting - 45-65W	LED Street Light Fixture	60	4,903	150W MH Fixture	185	4,903	20	$100	$0	$478	$0.07	21%	10.7	8.4	613	$0.163	$0.008
Lighting Efficiency		LED Area lighting - 66-89W	LED Street Light Fixture	78	4,903	175W MH Fixture	210	4,903	20	$125	$0	$520	$0.07	24%	11.0	8.3	650	$0.192	$0.010
Lighting Efficiency		LED Area lighting - 90-119W	LED Street Light Fixture	105	4,903	250W MH Fixture	295	4,903	20	$150	$0	$586	$0.07	26%	8.6	6.4	934	$0.161	$0.008
Lighting Efficiency		LED Area lighting - 120-140W	LED Street Light Fixture	130	4,903	400W MH Fixture	456	4,903	20	$175	$0	$649	$0.07	27%	5.6	4.1	1,598	$0.109	$0.005
Lighting Efficiency		LED Troffer Fixture 1X4	LED Troffer Fixture	45	5,335	Fluorescent Fixture	91	5,335	20	$50	$0	$223	$0.07	22%	13.4	10.4	245	$0.204	$0.010
Lighting Efficiency		LED Troffer Fixture 2X2	LED Troffer Fixture	39	5,335	Fluorescent Fixture	73	5,335	20	$50	$0	$197	$0.07	25%	15.8	11.8	184	$0.271	$0.014
Lighting Efficiency		LED Troffer Fixture 2X4	LED Troffer Fixture	63	5,335	Fluorescent Fixture	122	5,335	20	$50	$0	$241	$0.07	21%	11.3	8.9	317	$0.158	$0.008
Lighting Efficiency		LED Troffer Retrofit Kit 1X4	LED Troffer Fixture - Retrofit Kit	34	5,335	Fluorescent Fixture	72	5,335	20	$30	$0	$106	$0.07	28%	7.7	5.5	203	$0.148	$0.007
Lighting Efficiency		LED Troffer Retrofit Kit 2X2	LED Troffer Fixture - Retrofit Kit	37	5,335	Fluorescent Fixture	71	5,335	20	$30	$0	$165	$0.07	18%	13.5	11.1	180	$0.167	$0.008
Lighting Efficiency		LED Troffer Retrofit Kit 2X4	LED Troffer Fixture - Retrofit Kit	58	5,335	Fluorescent Fixture	115	5,335	20	$30	$0	$188	$0.07	16%	9.2	7.7	304	$0.099	$0.005
Lighting Efficiency		LED Exterior Wall Pack - <= 25W	LED Wall Pack Fixture	18	4,903	HID Wall Pack Fixture	98	4,903	20	$35	$0	$248	$0.07	14%	8.6	7.4	395	$0.089	$0.004
Lighting Efficiency		LED Exterior Wall Pack - 26W - 60W	LED Wall Pack Fixture	44	4,903	HID Wall Pack Fixture	218	4,903	20	$75	$0	$326	$0.07	23%	5.2	4.0	853	$0.088	$0.004
Lighting Efficiency		LED Exterior Wall Pack - 61W - 150W	LED Wall Pack Fixture	101	4,903	HID Wall Pack Fixture	416	4,903	20	$100	$0	$496	$0.07	20%	4.4	3.5	1,546	$0.065	$0.003
Lighting Efficiency		LED Parking Garage Wall Pack <= 25W	LED Parking Garage Fixture	18	8,760	HID Wall Pack Fixture	99	8,760	20	$35	$0	$279	$0.07	13%	5.4	4.7	710	$0.049	$0.002
Lighting Efficiency		LED Parking Garage Wall Pack - 26W - 60W	LED Parking Garage Fixture	44	8,760	HID Wall Pack Fixture	219	8,760	20	$75	$0	$378	$0.07	20%	3.4	2.7	1,530	$0.049	$0.002
Lighting Efficiency		LED Parking Garage Wall Pack - 61W - 150W	LED Parking Garage Fixture	94	8,760	HID Wall Pack Fixture	410	8,760	20	$100	$0	$566	$0.07	18%	2.8	2.3	2,771	$0.036	$0.002
Lighting Efficiency		LED Outdoor Canopy lighting - 25W - 60W	LED	40	4,903	Metal Halide	202	4,903	20	$100	$0	$351	$0.07	28%	6.1	4.3	793	$0.126	$0.006
Lighting Efficiency		LED Outdoor Canopy lighting - 61W - 150W	LED	103	4,903	Metal Halide	454	4,903	20	$125	$0	$328	$0.07	38%	2.6	1.6	1,719	$0.073	$0.004
Lighting Efficiency		LED Interior Lamp - A Lamps	LED lamp	11	5,649	Halogen, Incandescent, or CFL Lamp	21	5,649	5	$5	$4	$14	$0.07	35%	3.7	2.4	54	$0.093	$0.019
Lighting Efficiency		LED Interior Lamp - PAR20, R20	LED lamp	8	5,649	Halogen, Incandescent, or CFL Lamp	27	5,649	5	$10	$6	$13	$0.07	75%	1.7	0.4	107	$0.093	$0.017
Lighting Efficiency		LED Interior Lamp - PAR30	LED lamp	13	5,649	Halogen, Incandescent, or CFL Lamp	43	5,649	5	$15	$8	$21	$0.07	71%	1.7	0.5	171	$0.088	$0.016
Lighting Efficiency		LED Interior Lamp - BR30	LED lamp	11	5,649	Halogen, Incandescent, or CFL Lamp	37	5,649	5	$10	$8	$11	$0.07	92%	1.0	0.1	147	$0.068	$0.012
Lighting Efficiency		LED Interior Lamp - PAR38	LED lamp	17	5,649	Halogen, Incandescent, or CFL Lamp	57	5,649	5	$20	$6	$30	$0.07	67%	1.8	0.6	228	$0.088	$0.016
Lighting Efficiency		LED Interior Lamp - BR40	LED lamp	15	5,649	Halogen, Incandescent, or CFL Lamp	51	5,649	5	$20	$4	$22	$0.07	92%	1.5	0.1	203	$0.098	$0.018
Lighting Efficiency		LED Interior Lamp - PAR16	LED lamp	7	5,649	Halogen, Incandescent, or CFL Lamp	22	5,649	5	$6	$10	$11	$0.07	55%	1.7	0.8	87	$0.069	$0.013
Lighting Efficiency		LED Interior Lamp - MR16	LED lamp	6	5,649	Halogen, Incandescent, or CFL Lamp	27	5,649	5	$10	$4	$16	$0.07	63%	1.8	0.7	120	$0.084	$0.017
Lighting Efficiency		LED Interior Lamp - GU10	LED lamp	6	5,649	Halogen, Incandescent, or CFL Lamp	19	5,649	5	$10	$2	$13	$0.07	79%	2.5	0.5	70	$0.142	$0.026
Lighting Efficiency		LED Interior Lamp - Decorative (B, BA, Candle)	LED lamp	5	5,649	Halogen, Incandescent, or CFL Lamp	30	5,649	4	$5	$1	$19	$0.07	26%	1.9	1.4	142	$0.035	$0.008
Lighting Efficiency		LED Interior Screw In Fixture Retrofit	LED lamp	15	5,649	Halogen, Incandescent, or CFL Fixture	39	5,649	6	$15	$15	$19	$0.07	81%	1.9	0.4	134	$0.112	$0.018
Lighting Efficiency		Fluorescent Low Wattage T8 4' lamps	T8 25W and 28W Lamps	31	5,335	T8 32W Lamps	37	5,335	5	$1	$2	$4	$0.07	13%	1.7	1.5	34	$0.015	$0.003
Lighting Efficiency		Fluorescent High Bay - <= 300W	New Construction High Bay Fluorescents Less Than 300W	323	5,335	400W Metal Halide	568	5,335	20	$10	$179	$93	$0.07	11%	1.0	0.9	1,306	$0.008	$0.000
Lighting Efficiency		Fluorescent High Bay - <= 610W	New Construction High Bay Fluorescents Less Than 610W	596	5,335	750W Metal Halide	1,059	5,335	20	$15	$270	$134	$0.07	11%	0.8	0.7	2,467	$0.006	$0.000
Lighting Efficiency		Fluorescent High Bay - <= 900W	New Construction High Bay Fluorescents Less Than 900W	762	5,335	1000W Metal Halide	1,345	5,335	20	$20	$360	$159	$0.07	13%	0.7	0.6	3,110	$0.006	$0.000
Lighting Efficiency		CFL, Pin Based - <=19W	Pin Based CFL	20	5,335	Incandescent	49	5,335	20	$2	$40	$9	$0.07	22%	0.9	0.7	154	$0.013	$0.001
Lighting Efficiency		CFL, Pin Based - 19-32W	Pin Based CFL	44	5,335	Incandescent	97	5,335	20	$2	$40	$12	$0.07	16%	0.6	0.5	286	$0.007	$0.000
Lighting Efficiency		CFL, Pin Based - 33-100W	Pin Based CFL	37	5,335	Incandescent	92	5,335	20	$2	$41	$12	$0.07	16%	0.6	0.5	295	$0.007	$0.000
Lighting Efficiency		CFL, 2-foot Low Wattage - 25 - 28W	PL 25W CFL	33	5,335	PL 40W CFL	50	5,335	5	$1	$11	$12	$0.07	4%	2.0	1.9	90	$0.006	$0.001
Lighting Efficiency		LED Interior Fixture <= 25 Watts	LED Downlight Luminaire	21	5,335	Incandescent Luminaire	54	5,335	20	$25	$27	$72	$0.07	35%	6.1	4.0	176	$0.142	$0.007
Lighting Efficiency		LED Interior Fixture - 25W - 50W	LED Downlight Luminaire	47	5,335	Incandescent Luminaire	82	5,335	20	$40	$40	$175	$0.07	23%	13.9	10.8	186	$0.215	$0.011
Lighting Efficiency		LED Refrigerated Case Lighting	LED Strip lighting	51	8,760	T8 or T12 Fluorescent	139	8,760	20	$35	$19	$145	$0.07	24%	2.6	1.9	771	$0.045	$0.002
Lighting Efficiency		LED Parking Garage lighting 25W - 60W	LED Parking Garage Fixture	44	8,760	CMH	177	8,760	20	$25	$252	$108	$0.07	23%	1.3	1.0	1,165	$0.021	$0.001
Lighting Efficiency		LED Parking Garage lighting 61W - 83W	LED Parking Garage Fixture	72	8,760	HID Fixture	275	8,760	20	$35	$290	$137	$0.07	25%	1.1	0.8	1,778	$0.020	$0.001
Lighting Efficiency		LED High-Bay Luminaires - 95 - 189W	LED High Bay New Construction 95-189W	177	5,335	HPS Fixture <= 250W	327	5,335	20	$125	$206	$351	$0.07	36%	6.5	4.2	802	$0.156	$0.008
Lighting Efficiency		LED High-Bay Luminaires - 190 - 290W	LED High Bay New Construction 190-290W	299	5,335	HPS Fixture <= 400W	569	5,335	20	$140	$263	$608	$0.07	23%	6.2	4.8	1,442	$0.097	$0.005
Lighting Efficiency		LED High-Bay Luminaires - 291 - 464W	LED High Bay New Construction 291-464W	470	5,335	HPS Fixture <= 750W	1,046	5,335	20	$165	$374	$954	$0.07	17%	4.6	3.8	3,074	$0.054	$0.003
Lighting Efficiency		LED High-Bay Luminaires - 465 - 625W	LED High Bay New Construction 465-625W	675	5,335	HPS Fixture <= 1000W	1,370	5,335	20	$175	$450	$1,552	$0.07	11%	6.2	5.5	3,708	$0.047	$0.002
Lighting Efficiency		LED Street lighting - 30-44W	LED Street Light Fixture	37	4,903	70W HID Street Light Fixture	90	4,903	20	$15	$235	$160	$0.07	9%	8.5	7.7	258	$0.058	$0.003
Lighting Efficiency		LED Street lighting - 45-55W	LED Street Light Fixture	50	4,903	100W HPS Street Light Fixture	128	4,903	20	$25	$240	$178	$0.07	14%	6.4	5.5	382	$0.065	$0.003
Lighting Efficiency		LED Street lighting - 56-79W	LED Street Light Fixture	75	4,903	150W HID Street Light Fixture	182	4,903	20	$35	$248	$217	$0.07	16%	5.7	4.8	522	$0.067	$0.003
Lighting Efficiency		LED Street lighting - 80-109W	LED Street Light Fixture	105	4,903	175W HID Street Light Fixture	203	4,903	20	$55	$255	$264	$0.07	21%	7.5	6.0	479	$0.115	$0.006
Lighting Efficiency		LED Street lighting - 110-139W	LED Street Light Fixture	136	4,903	250W HID Street Light Fixture	288	4,903	20	$65	$258	$317	$0.07	21%	5.8	4.6	743	$0.087	$0.004
Lighting Efficiency		LED Street lighting - 140-209W	LED Street Light Fixture	164	4,903	400W HID Street Light Fixture	450	4,903	20	$85	$280	$346	$0.07	25%	3.4	2.5	1,404	$0.061	$0.003
Lighting Efficiency		LED Area lighting - 45-65W	LED Parking Area Fixture	55	4,903	150W MH Fixture	168	4,903	20	$55	$222	$243	$0.07	23%	6.0	4.7	554	$0.099	$0.005
Lighting Efficiency		LED Area lighting - 66-89W	LED Parking Area Fixture	78	4,903	175W MH Fixture	189	4,903	20	$65	$290	$230	$0.07	28%	5.8	4.1	547	$0.119	$0.006
Lighting Efficiency		LED Area lighting - 90-119W	LED Parking Area Fixture	105	4,903	250W MH Fixture	275	4,903	20	$75	$290	$296	$0.07	25%	4.9	3.6	836	$0.090	$0.004
Lighting Efficiency		LED Area lighting - 120-140W	LED Parking Area Fixture	130	4,903	400W MH Fixture	435	4,903	20	$85	$298	$351	$0.07	24%	3.2	2.4	1,495	$0.057	$0.003
Lighting Efficiency		LED Troffer Fixture 1X4	LED Troffer Fixture	45	5,335	Fluorescent Fixture	91	5,335	20	$30	$50	$173	$0.07	17%	10.4	8.6	245	$0.122	$0.006
Lighting Efficiency		LED Troffer Fixture 2X2	LED Troffer Fixture	39	5,335	Fluorescent Fixture	73	5,335	20	$30	$40	$157	$0.07	19%	12.6	10.2	184	$0.163	$0.008
Lighting Efficiency		LED Troffer Fixture 2X4	LED Troffer Fixture	63	5,335	Fluorescent Fixture	122	5,335	20	$30	$56	$185	$0.07	16%	8.7	7.3	317	$0.095	$0.005
Lighting Efficiency		LED Exterior Wall Pack - <= 25W	LED Wall Pack Fixture	19	4,903	HID Wall Pack Fixture	104	4,903	20	$15	$223	$27	$0.07	56%	0.9	0.4	419	$0.036	$0.002
Lighting Efficiency		LED Exterior Wall Pack - 26W - 60W	LED Wall Pack Fixture	48	4,903	HID Wall Pack Fixture	233	4,903	20	$30	$264	$75	$0.07	40%	1.1	0.7	903	$0.033	$0.002
Lighting Efficiency		LED Exterior Wall Pack - 61W - 150W	LED Wall Pack Fixture	104	4,903	HID Wall Pack Fixture	423	4,903	20	$50	$298	$206	$0.07	24%	1.8	1.4	1,567	$0.032	$0.002
Lighting Efficiency		LED Parking Garage Wall Pack <= 25W	LED Parking Garage Fixture	17	8,760	HID Wall Pack Fixture	92	8,760	20	$15	$198	$77	$0.07	19%	1.6	1.3	660	$0.023	$0.001
Lighting Efficiency		LED Parking Garage Wall Pack - 26W - 60W	LED Parking Garage Fixture	43	8,760	HID Wall Pack Fixture	210	8,760	20	$30	$234	$139	$0.07	22%	1.3	1.0	1,467	$0.020	$0.001
Lighting Efficiency		LED Parking Garage Wall Pack - 61W - 150W	LED Parking Garage Fixture	106	8,760	HID Wall Pack Fixture	421	8,760	20	$50	$294	$319	$0.07	16%	1.6	1.3	2,762	$0.018	$0.001
Lighting Efficiency		LED Outdoor Canopy - 25W - 60W	LED	40	4,903	Metal Halide	202	4,903	20	$50	$206	$145	$0.07	34%	2.5	1.6	793	$0.063	$0.003
Lighting Efficiency		LED Outdoor Canopy - 61W - 150W	LED	103	4,903	Metal Halide	454	4,903	20	$100	$262	$66	$0.07	151%	0.5	-0.3	1,719	$0.058	$0.003
Lighting Efficiency		Lighting Control System	Automated Lighting Controls Systems	78,412	2,613	Manually Switched System	84,111	2,613	15	$2,280	$0	$18,278	$0.07	12%	11.0	9.6	14,893	$0.153	$0.010
Lighting Efficiency		Custom Lighting & Recommissioning	Engineering Study		0	Existing Overlit Lighting System	0	0	0	$52,585	$0	$142,104	$0.07	37%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!
Lighting Efficiency		Custom Lighting	Custom Lighting Solution	99,000	4,558	Existing Overlit Lighting System	115,053	4,558	16	$6,421	$0	$22,054	$0.07	29%	4.1	2.9	73,176	$0.088	$0.005
Lighting Efficiency		Lighting Redesign Studies	Redesign Lighting Solution Study			Existing Overlit Lighting System				$12,038	$0	$17,949	$0.07	67%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!
Lighting Efficiency		Lighting Redesign Implementation	Redesign Lighting Solution Installed	81,354	7,834	Existing Overlit Lighting System	125,000	7,834	20	$17,459	$0	$86,652	$0.07	20%	3.5	2.8	341,943	$0.051	$0.003
Lighting Efficiency		LED High-Bay Luminaires with Fluorescent Baseline - 95 - 189W	LED High Bay 95-189W	142	5,335	High Bay Flourecent Fixture	209	5,335	20	$75	$0	$325	$0.07	23%	13.5	10.4	355	$0.211	$0.011
Lighting Efficiency		LED High-Bay Luminaires with Fluorescent Baseline - 190 - 290W	LED High Bay 190-290W	283	5,335	High Bay Fluorescent Fixture	421	5,335	20	$100	$0	$648	$0.07	15%	13.0	11.0	736	$0.136	$0.007
Lighting Efficiency		LED High-Bay Luminaires with Fluorescent Baseline - 291 - 464W	LED High Bay 291-464W	428	5,335	High Bay Fluorescent Fixture	633	5,335	20	$125	$0	$982	$0.07	13%	13.3	11.6	1,096	$0.114	$0.006
Lighting Efficiency		LED High-Bay Luminaires with Fluorescent Baseline - 465 - 625W	LED High Bay 465-625W	671	5,335	High Bay Fluorescent Fixture	988	5,335	20	$150	$0	$1,543	$0.07	10%	13.5	12.2	1,688	$0.089	$0.004
Lighting Efficiency		LED Area Lighting - 141-199W	LED Parking Area Fixture	170	4,903	750W MH Fixture	850	4,903	20	$200	$0	$747	$0.07	27%	3.1	2.2	3,334	$0.060	$0.003
Lighting Efficiency		LED Area Lighting - 200-550W	LED Parking Area Fixture	375	4,903	1000W MH Fixture	1,080	4,903	20	$250	$0	$1,249	$0.07	20%	4.9	4.0	3,457	$0.072	$0.004
Lighting Efficiency		LED Screw-in Lamps - 30 - 39W (70W HID replacement lamp)	LED High Bay Replacement Lamp	72	5,335	<=70W HID Fixture	107	5,335	8	$30	$8	$126	$0.07	24%	9.9	7.5	188	$0.160	$0.020
Lighting Efficiency		LED Screw-in Lamps - 40 - 49W (100W HID replacement lamp)	LED High Bay Replacement Lamp	87	5,335	<=100W HID Fixture	155	5,335	8	$40	$10	$126	$0.07	32%	5.1	3.5	364	$0.110	$0.014
Lighting Efficiency		LED Screw-in Lamps - 50 - 79W (175W HID replacement lamp)	LED High Bay Replacement Lamp	124	5,335	<=175W HID Fixture	253	5,335	8	$50	$11	$169	$0.07	30%	3.6	2.6	688	$0.073	$0.009
Lighting Efficiency		LED Screw-in Lamps - 80 -119W (250W HID replacement lamp)	LED High Bay Replacement Lamp	180	5,335	<=250W HID Fixture	357	5,335	8	$60	$10	$221	$0.07	27%	3.5	2.5	945	$0.063	$0.008
Lighting Efficiency		LED Screw-in Lamps - 120 - 144W (320W HID replacement lamp)	LED High Bay Replacement Lamp	227	5,335	<=320W HID Fixture	458	5,335	8	$75	$14	$252	$0.07	30%	3.0	2.1	1,233	$0.061	$0.007
Lighting Efficiency		LED Screw-in Lamps - 145 - 230W (400W HID replacement lamp)	LED High Bay Replacement Lamp	303	5,335	<=400W HID Fixture	568	5,335	8	$75	$10	$252	$0.07	30%	2.7	1.9	1,410	$0.053	$0.007
Lighting Efficiency		LED PL/G based CFL Replacement lamp	LED Plug In Lamp	21	5,335	CFL lamp	46	5,335	8	$7	$1	$20	$0.07	35%	2.2	1.4	136	$0.051	$0.006
Lighting Efficiency		LED Interior Fixture <= 25W (CFL baseline)	LED Downlight Fixture	25	5,336	CFL fixture	63	5,336	20	$25	$0	$88	$0.07	28%	6.4	4.6	204	$0.123	$0.006
Lighting Efficiency		LED Interior Fixture - 26-50W (CFL baseline)	LED Downlight Fixture	40	5,336	CFL fixture	84	5,336	20	$35	$0	$132	$0.07	27%	8.4	6.2	233	$0.150	$0.008
Lighting Efficiency		LED Tube Type A 4 foot T5	LED 4 Foot Tube Instafit	28	5,335	T5 Fluorescent Lamps	60	5,335	8	$2	$2	$14	$0.07	22%	1.2	0.9	171	$0.018	$0.002
Lighting Efficiency		LED Tube Type C 4 foot T5	LED 4 Foot Tube External Driver	26	5,335	T5 Fluorescent Lamps	57	5,335	20	$5	$0	$25	$0.07	20%	2.3	1.8	163	$0.031	$0.002
Lighting Efficiency		LED Tube Type B 4 foot T5	LED 4 Foot Tube Internal Driver	29	5,335	T5 Fluorescent Lamps	61	5,335	8	$3	$2	$17	$0.07	18%	1.4	1.2	175	$0.017	$0.002
Lighting Efficiency		LED Linear Ambient <=35W	LED Ambient Fixture <=35W	32	5,335	Flourescent Ambient Fixture	51	5,335	20	$20	$30	$129	$0.07	15%	23.0	19.5	103	$0.194	$0.010
Lighting Efficiency		LED Linear Ambient 36-60W	LED Ambient Fixture 36-60W	57	5,335	Flourescent Ambient Fixture	92	5,335	20	$25	$36	$180	$0.07	14%	16.6	14.3	184	$0.136	$0.007
Lighting Efficiency		LED Linear Ambient 61-100W	LED Ambient Fixture 61-100W	92	5,335	Flourescent Ambient Fixture	156	5,335	20	$38	$43	$252	$0.07	15%	11.9	10.1	339	$0.112	$0.006
Lighting Efficiency		Recommissioning Study Allocation	Existing building with measures as identified in Recommissioning	0	0	Existing Building	0	0	0	$4,530	$0	$7,246	$0.07	63%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!
Motor Efficiency		***Motor Efficiency***																	
Motor Efficiency		New Motor Enhanced	NEMA Premium +1% Efficient Motor	3,074	6,135	NEMA Premium	3,126	6,135	20	$40	$797	$181	$0.08	22%	7.5	5.9	319	$0.125	$0.006

Electric Measure Description	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
LED Traffic Balls and Arrows - 12" Red	0.1	0.1	$0.00	$0.00	55%	1	5	1	5	100%	100%	100%	0	2,907	125	450	0	2,907	125	450
LED Traffic Balls and Arrows - 8" Green	0.1	0.0	$0.00	$0.00	43%	1	5	1	5	100%	100%	100%	0	1,430	160	350	0	1,430	160	350
LED Traffic Balls and Arrows - 12" Green	0.1	0.1	$0.00	$0.00	43%	1	5	1	5	100%	100%	100%	0	2,907	160	450	0	2,907	160	450
LED Traffic Arrows - 12" Red	0.1	0.1	$0.00	$0.00	90%	1	5	1	5	100%	100%	100%	1	2,907	250	450	1	2,907	250	450
LED Parking Garage lighting - 25W - 60W	0.1	0.1	$0.00	$0.00	100%	4	500	4	500	100%	100%	100%	74	646,626	67,500	175,837	74	646,626	67,500	175,837
LED Parking Garage lighting - 61W - 83W	0.2	0.2	$0.00	$0.00	100%	5	700	5	700	100%	100%	100%	157	1,370,718	105,000	297,259	157	1,370,718	105,000	297,259
Integral Occupancy Sensor - 1 per fixture and installed as a manufacturer option	0.0	0.0	$0.00	-$0.44	84%	8	1,000	8	1,000	100%	100%	100%	14	86,826	20,000	37,500	14	86,826	20,000	37,500
Integral Photo Sensor – 1 per fixture and installed as a manufacturer option	0.0	0.0	$0.00	-$0.52	84%	8	1,000	8	1,000	100%	100%	100%	16	101,875	8,000	12,500	16	101,875	8,000	12,500
Integral Occupancy & Photo Sensor – 1 per fixture and installed as a manufacturer option	0.0	0.0	$0.00	-$0.58	84%	4	500	4	500	100%	100%	100%	9	57,139	14,000	25,000	9	57,139	14,000	25,000
LED High-Bay Luminaires - 95 - 189W	0.3	0.2	$0.00	-$7.54	84%	7	938	7	938	100%	100%	100%	218	1,383,271	126,563	380,552	218	1,383,271	126,563	380,552
LED High-Bay Luminaires - 190 - 290W	0.2	0.2	$0.00	-$6.24	84%	5	563	5	563	100%	100%	100%	108	686,862	84,375	383,525	108	686,862	84,375	383,525
LED High-Bay Luminaires - 291 - 464W	0.6	0.5	$0.00	-$16.75	84%	5	563	5	563	100%	100%	100%	291	1,843,042	112,500	585,875	291	1,843,042	112,500	585,875
LED High-Bay Luminaires - 465 - 625W	0.7	0.6	$0.00	-$19.36	84%	2	269	2	269	100%	100%	100%	160	1,017,605	67,188	414,265	160	1,017,605	67,188	414,265
Retrofit Kits for LED High-Bay Luminaires - 95 - 189W	0.3	0.2	$0.00	-$7.54	84%	1	38	1	38	100%	100%	100%	9	55,312	1,500	12,088	9	55,312	1,500	12,088
Retrofit Kits for LED High-Bay Luminaires - 190 - 290W	0.4	0.3	$0.00	-$10.74	84%	2	188	2	188	100%	100%	100%	62	393,824	9,375	80,101	62	393,824	9,375	80,101
Retrofit Kits for LED High-Bay Luminaires - 291 - 464W	0.6	0.5	$0.00	-$16.75	84%	2	188	2	188	100%	100%	100%	97	614,347	15,000	106,689	97	614,347	15,000	106,689
Retrofit Kits for LED High-Bay Luminaires - 465 - 625W	0.7	0.6	$0.00	-$19.36	84%	2	156	2	156	100%	100%	100%	93	591,631	25,000	119,218	93	591,631	25,000	119,218
LED Tube Type A 2 foot	0.0	0.0	$0.00	-$0.32	84%	54	7,500	54	7,500	100%	100%	100%	75	476,436	15,000	31,329	75	476,436	15,000	31,329
LED Tube Type C 2 foot	0.0	0.0	$0.00	-$0.24	84%	54	7,500	54	7,500	100%	100%	100%	56	355,739	37,500	162,375	56	355,739	37,500	162,375
LED Tube Type A 4 foot	0.0	0.0	$0.00	-$0.36	84%	143	20,000	143	20,000	100%	100%	100%	225	1,427,800	40,000	120,301	225	1,427,800	40,000	120,301
LED Tube Type C 4 foot	0.0	0.0	$0.00	-$0.41	84%	143	20,000	143	20,000	100%	100%	100%	252	1,601,062	100,000	501,600	252	1,601,062	100,000	501,600
LED Street lighting - 30-44W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	13,824	1,500	19,741	0	13,824	1,500	19,741
LED Street lighting - 45-55W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	20,473	2,000	20,924	0	20,473	2,000	20,924
LED Street lighting - 56-79W	0.1	0.0	$0.00	$0.00	0%	2	250	2	250	100%	100%	100%	0	139,725	12,500	116,007	0	139,725	12,500	116,007
LED Street lighting - 80-109W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	25,598	3,750	25,881	0	25,598	3,750	25,881
LED Street lighting - 110-139W	0.2	0.0	$0.00	$0.00	0%	2	175	2	175	100%	100%	100%	0	149,390	17,500	96,957	0	149,390	17,500	96,957
LED Street lighting - 140-209W	0.3	0.0	$0.00	$0.00	0%	1	125	1	125	100%	100%	100%	0	187,897	15,625	78,260	0	187,897	15,625	78,260
LED Area lighting - 45-65W	0.1	0.0	$0.00	$0.00	0%	1	100	1	100	100%	100%	100%	0	65,584	10,000	47,791	0	65,584	10,000	47,791
LED Area lighting - 66-89W	0.1	0.0	$0.00	$0.00	0%	2	150	2	150	100%	100%	100%	0	104,333	18,750	78,009	0	104,333	18,750	78,009
LED Area lighting - 90-119W	0.2	0.0	$0.00	$0.00	0%	2	200	2	200	100%	100%	100%	0	200,005	30,000	117,249	0	200,005	30,000	117,249
LED Area lighting - 120-140W	0.3	0.0	$0.00	$0.00	0%	3	300	3	300	100%	100%	100%	0	513,398	52,500	194,627	0	513,398	52,500	194,627
LED Troffer Fixture 1X4	0.0	0.0	$0.00	-$1.34	84%	4	450	4	450	100%	100%	100%	19	118,066	22,500	100,126	19	118,066	22,500	100,126
LED Troffer Fixture 2X2	0.0	0.0	$0.00	-$1.01	84%	31	4,250	31	4,250	100%	100%	100%	132	839,038	212,500	836,494	132	839,038	212,500	836,494
LED Troffer Fixture 2X4	0.1	0.1	$0.00	-$1.73	84%	24	3,250	24	3,250	100%	100%	100%	174	1,101,390	162,500	783,853	174	1,101,390	162,500	783,853
LED Troffer Retrofit Kit 1X4	0.0	0.0	$0.00	-$1.11	84%	1	20	1	20	100%	100%	100%	1	4,346	600	2,120	1	4,346	600	2,120
LED Troffer Retrofit Kit 2X2	0.0	0.0	$0.00	-$0.99	84%	3	300	3	300	100%	100%	100%	9	57,843	9,000	49,389	9	57,843	9,000	49,389
LED Troffer Retrofit Kit 2X4	0.1	0.1	$0.00	-$1.67	84%	22	3,000	22	3,000	100%	100%	100%	154	977,268	90,000	564,831	154	977,268	90,000	564,831
LED Exterior Wall Pack - <= 25W	0.1	0.0	$0.00	$0.00	0%	2	200	2	200	100%	100%	100%	0	84,510	7,000	49,601	0	84,510	7,000	49,601
LED Exterior Wall Pack - 26W - 60W	0.2	0.0	$0.00	$0.00	0%	6	750	6	750	100%	100%	100%	0	684,597	56,250	244,376	0	684,597	56,250	244,376
LED Exterior Wall Pack - 61W - 150W	0.3	0.0	$0.00	$0.00	0%	2	250	2	250	100%	100%	100%	0	413,847	25,000	124,031	0	413,847	25,000	124,031
LED Parking Garage Wall Pack <= 25W	0.1	0.1	$0.00	$0.00	100%	1	25	1	25	100%	100%	100%	2	18,997	875	6,964	2	18,997	875	6,964
LED Parking Garage Wall Pack - 26W - 60W	0.2	0.2	$0.00	$0.00	100%	1	25	1	25	100%	100%	100%	5	40,941	1,875	9,443	5	40,941	1,875	9,443
LED Parking Garage Wall Pack - 61W - 150W	0.3	0.3	$0.00	$0.00	100%	1	30	1	30	100%	100%	100%	10	88,999	3,000	16,995	10	88,999	3,000	16,995
LED Outdoor Canopy lighting - 25W - 60W	0.2	0.0	$0.00	$0.00	0%	1	75	1	75	100%	100%	100%	0	63,650	7,500	26,356	0	63,650	7,500	26,356
LED Outdoor Canopy lighting - 61W - 150W	0.4	0.0	$0.00	$0.00	0%	6	800	6	800	100%	100%	100%	0	1,472,650	100,000	262,520	0	1,472,650	100,000	262,520
LED Interior Lamp - A Lamps	0.0	0.0	$0.00	$0.00	82%	146	20,400	146	20,400	100%	100%	100%	172	1,179,784	102,000	294,372	172	1,179,784	102,000	294,372
LED Interior Lamp - PAR20, R20	0.0	0.0	$0.00	$0.00	82%	15	2,040	15	2,040	100%	100%	100%	34	233,628	20,400	27,183	34	233,628	20,400	27,183
LED Interior Lamp - PAR30	0.0	0.0	$0.00	$0.00	82%	59	8,160	59	8,160	100%	100%	100%	218	1,493,879	122,400	171,197	218	1,493,879	122,400	171,197
LED Interior Lamp - BR30	0.0	0.0	$0.00	$0.00	82%	41	5,610	41	5,610	100%	100%	100%	129	881,170	56,100	61,037	129	881,170	56,100	61,037
LED Interior Lamp - PAR38	0.0	0.0	$0.00	$0.00	82%	44	6,120	44	6,120	100%	100%	100%	218	1,492,517	122,400	182,835	218	1,492,517	122,400	182,835
LED Interior Lamp - BR40	0.0	0.0	$0.00	$0.00	82%	6	765	6	765	100%	100%	100%	24	166,631	15,300	16,669	24	166,631	15,300	16,669
LED Interior Lamp - PAR16	0.0	0.0	$0.00	$0.00	82%	1	61	1	61	100%	100%	100%	1	5,695	366	664	1	5,695	366	664
LED Interior Lamp - MR16	0.0	0.0	$0.00	$0.00	82%	66	9,180	66	9,180	100%	100%	100%	172	1,174,671	91,800	145,687	172	1,174,671	91,800	145,687
LED Interior Lamp - GU10	0.0	0.0	$0.00	$0.00	82%	1	102	1	102	100%	100%	100%	1	7,691	1,020	1,292	1	7,691	1,020	1,292
LED Interior Lamp - Decorative (B, BA, Candle)	0.0	0.0	$0.00	$0.00	82%	10	1,275	10	1,275	100%	100%	100%	28	193,452	6,375	24,480	28	193,452	6,375	24,480
LED Interior Screw In Fixture Retrofit	0.0	0.0	$0.00	$0.00	82%	1	102	1	102	100%	100%	100%	2	14,613	1,530	1,891	2	14,613	1,530	1,891
Fluorescent Low Wattage T8 4' lamps	0.0	0.0	$0.00	-$0.19	84%	72	10,000	72	10,000	100%	100%	100%	58	366,530	5,000	40,000	58	366,530	5,000	40,000
Fluorescent High Bay - <= 300W	0.2	0.2	$0.00	-$7.15	84%	1	30	1	30	100%	100%	100%	7	41,937	300	2,775	7	41,937	300	2,775
Fluorescent High Bay - <= 610W	0.5	0.4	$0.00	-$13.50	84%	4	500	4	500	100%	100%	100%	208	1,320,538	7,500	66,875	208	1,320,538	7,500	66,875
Fluorescent High Bay - <= 900W	0.6	0.6	$0.00	$0.00	100%	1	134	1	134	100%	100%	100%	84	446,163	2,680	21,306	84	446,163	2,680	21,306
CFL, Pin Based - <=19W	0.0	0.0	$0.00	-$0.84	84%	1	4	1	4	100%	100%	100%	0	658	8	37	0	658	8	37
CFL, Pin Based - 19-32W	0.1	0.0	$0.00	-$1.56	84%	3	305	3	305	100%	100%	100%	15	93,320	610	3,703	15	93,320	610	3,703
CFL, Pin Based - 33-100W	0.1	0.0	$0.00	-$1.61	84%	4	500	4	500	100%	100%	100%	25	157,812	1,000	6,170	25	157,812	1,000	6,170
CFL, 2-foot Low Wattage - 25 - 28W	0.0	0.0	$0.00	-$0.49	84%	1	5	1	5	100%	100%	100%	0	480	3	61	0	480	3	61
LED Interior Fixture <= 25 Watts	0.0	0.0	$0.00	-$0.96	84%	22	3,000	22	3,000	100%	100%	100%	89	563,742	75,000	217,085	89	563,742	75,000	217,085
LED Interior Fixture - 25W - 50W	0.0	0.0	$0.00	-$1.02	84%	11	1,500	11	1,500	100%	100%	100%	47	298,821	60,000	262,879	47	298,821	60,000	262,879
LED Refrigerated Case Lighting	0.1	0.1	$0.00	$0.00	100%	9	1,200	9	1,200	100%	100%	100%	114	991,068	42,000	173,484	114	991,068	42,000	173,484
LED Parking Garage lighting 25W - 60W	0.1	0.1	$0.00	$0.00	100%	3	400	3	400	100%	100%	100%	57	498,729	10,000	43,210	57	498,729	10,000	43,210
LED Parking Garage lighting 61W - 83W	0.2	0.2	$0.00	$0.00	100%					100%	100%	100%	0	0	0	0	0	0	0	0
LED High-Bay Luminaires - 95 - 189W	0.2	0.1	$0.00	-$4.39	84%	2	275	2	275	100%	100%	100%	37	236,051	34,375	96,498	37	236,051	34,375	96,498
LED High-Bay Luminaires - 190 - 290W	0.3	0.2	$0.00	-$7.89	84%	2	275	2	275	100%	100%	100%	67	424,574	38,500	167,123	67	424,574	38,500	167,123
LED High-Bay Luminaires - 291 - 464W	0.6	0.5	$0.00	-$16.83	84%	2	275	2	275	100%	100%	100%	143	905,154	45,375	262,423	143	905,154	45,375	262,423
LED High-Bay Luminaires - 465 - 625W	0.7	0.6	$0.00	-$20.29	84%	2	150	2	150	100%	100%	100%	94	595,465	26,250	232,790	94	595,465	26,250	232,790
LED Street lighting - 30-44W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	13,824	750	7,978	0	13,824	750	7,978
LED Street lighting - 45-55W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	20,473	1,250	8,919	0	20,473	1,250	8,919
LED Street lighting - 56-79W	0.1	0.0	$0.00	$0.00	0%	2	250	2	250	100%	100%	100%	0	139,852	8,750	54,185	0	139,852	8,750	54,185
LED Street lighting - 80-109W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	25,637	2,750	13,184	0	25,637	2,750	13,184
LED Street lighting - 110-139W	0.2	0.0	$0.00	$0.00	0%	2	175	2	175	100%	100%	100%	0	139,301	11,375	55,409	0	139,301	11,375	55,409
LED Street lighting - 140-209W	0.3	0.0	$0.00	$0.00	0%	1	125	1	125	100%	100%	100%	0	187,897	10,625	43,276	0	187,897	10,625	43,276
LED Area lighting - 45-65W	0.1	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	29,659	2,750	12,163	0	29,659	2,750	12,163
LED Area lighting - 66-89W	0.1	0.0	$0.00	$0.00	0%	1	75	1	75	100%	100%	100%	0	43,899	4,875	17,255	0	43,899	4,875	17,255
LED Area lighting - 90-119W	0.2	0.0	$0.00	$0.00	0%	1	100	1	100	100%	100%	100%	0	89,503	7,500	29,625	0	89,503	7,500	29,625
LED Area lighting - 120-140W	0.3	0.0	$0.00	$0.00	0%	2	150	2	150	100%	100%	100%	0	240,163	12,750	52,613	0	240,163	12,750	52,613
LED Troffer Fixture 1X4	0.0	0.0	$0.00	-$1.34	84%	1	100	1	100	100%	100%	100%	4	26,237	3,000	17,268	4	26,237	3,000	17,268
LED Troffer Fixture 2X2	0.0	0.0	$0.00	-$1.01	84%	17	2,250	17	2,250	100%	100%	100%	70	444,197	67,500	352,281	70	444,197	67,500	352,281
LED Troffer Fixture 2X4	0.1	0.1	$0.00	-$1.73	84%	22	3,000	22	3,000	100%	100%	100%	160	1,016,667	90,000	555,111	160	1,016,667	90,000	555,111
LED Exterior Wall Pack - <= 25W	0.1	0.0	$0.00	$0.00	0%	1	75	1	75	100%	100%	100%	0	33,621	1,125	2,016	0	33,621	1,125	2,016
LED Exterior Wall Pack - 26W - 60W	0.2	0.0	$0.00	$0.00	0%	3	300	3	300	100%	100%	100%	0	290,127	9,000	22,567	0	290,127	9,000	22,567
LED Exterior Wall Pack - 61W - 150W	0.3	0.0	$0.00	$0.00	0%	1	100	1	100	100%	100%	100%	0	167,774	5,000	20,616	0	167,774	5,000	20,616
LED Parking Garage Wall Pack <= 25W	0.1	0.1	$0.00	$0.00	100%	1	1	1	1	100%	100%	100%	0	707	15	77	0	707	15	77
LED Parking Garage Wall Pack - 26W - 60W	0.2	0.2	$0.00	$0.00	100%	1	10	1	10	100%	100%	100%	2	15,708	300	1,386	2	15,708	300	1,386
LED Parking Garage Wall Pack - 61W - 150W	0.3	0.3	$0.00	$0.00	100%	1	15	1	15	100%	100%	100%	5	44,354	750	4,787	5	44,354	750	4,787
LED Outdoor Canopy - 25W - 60W	0.2	0.0	$0.00	$0.00	0%	1	50	1	50	100%	100%	100%	0	42,433	2,500	7,255	0	42,433	2,500	7,255
LED Outdoor Canopy - 61W - 150W	0.4	0.0	$0.00	$0.00	0%	2	250	2	250	100%	100%	100%	0	460,203	25,000	16,555	0	460,203	25,000	16,555
Lighting Control System	5.7	0.0	$575.28	$0.00	0%	1	1	1	1	100%	100%	100%	0	15,945	2,280	18,278	0	15,945	2,280	18,278
Custom Lighting & Recommissioning	0.0	0.0	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Custom Lighting	16.1	11.7	$0.00	$0.00	68%	1	100	1	100	100%	100%	100%	1,167	7,834,743	642,132	2,205,386	1,167	7,834,743	642,132	2,205,386
Lighting Redesign Studies	0.0	0.0	$0.00	$0.00	100%	10	10	10	10	100%	100%	100%	0	0	120,381	179,488	0	0	120,381	179,488
Lighting Redesign Implementation	43.6	31.7	$0.00	$0.00	68%	4	4	4	4	100%	100%	100%	127	1,464,423	69,834	346,606	127	1,464,423	69,834	346,606
LED High-Bay Luminaires with Fluorescent Baseline - 95 - 189W	0.1	0.1	$0.00	-$1.94	84%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LED High-Bay Luminaires with Fluorescent Baseline - 190 - 290W	0.1	0.1	$0.00	-$4.03	84%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LED High-Bay Luminaires with Fluorescent Baseline - 291 - 464W	0.2	0.2	$0.00	-$6.00	84%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LED High-Bay Luminaires with Fluorescent Baseline - 465 - 625W	0.3	0.3	$0.00	-$9.24	84%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LED Area Lighting - 141-199W	0.7	0.0	$0.00	$0.00	0%	1	125	1	125	100%	100%	100%	0	446,204	25,000	93,351	0	446,204	25,000	93,351
LED Area Lighting - 200-550W	0.7	0.0	$0.00	$0.00	0%	1	125	1	125	100%	100%	100%	0	462,609	31,250	156,166	0	462,609	31,250	156,166
LED Screw-in Lamps - 30 - 39W (70W HID replacement lamp)	0.0	0.0	$0.00	-$1.03	84%	4	500	4	500	100%	100%	100%	16	100,674	15,000	62,805	16	100,674	15,000	62,805
LED Screw-in Lamps - 40 - 49W (100W HID replacement lamp)	0.1	0.1	$0.00	-$1.99	84%	2	150	2	150	100%	100%	100%	9	58,483	6,000	18,842	9	58,483	6,000	18,842
LED Screw-in Lamps - 50 - 79W (175W HID replacement lamp)	0.1	0.1	$0.00	-$3.76	84%	2	150	2	150	100%	100%	100%	17	110,457	7,500	25,281	17	110,457	7,500	25,281
LED Screw-in Lamps - 80 -119W (250W HID replacement lamp)	0.2	0.2	$0.00	-$5.17	84%	2	250	2	250	100%	100%	100%	40	253,019	15,000	55,301	40	253,019	15,000	55,301
LED Screw-in Lamps - 120 - 144W (320W HID replacement lamp)	0.2	0.2	$0.00	-$6.75	84%	2	250	2	250	100%	100%	100%	52	329,948	18,750	63,103	52	329,948	18,750	63,103
LED Screw-in Lamps - 145 - 230W (400W HID replacement lamp)	0.3	0.2	$0.00	-$7.72	84%	3	400	3	400	100%	100%	100%	95	603,807	30,000	100,964	95	603,807	30,000	100,964
LED PL/G based CFL Replacement lamp	0.0	0.0	$0.00	-$0.75	84%	25	3,500	25	3,500	100%	100%	100%	80	510,172	24,500	69,608	80	510,172	24,500	69,608
LED Interior Fixture <= 25W (CFL baseline)	0.0	0.0	$0.00	-$1.11	73%	1	50	1	50	100%	100%	100%	1	10,905	1,250	4,405	1	10,905	1,250	4,405
LED Interior Fixture - 26-50W (CFL baseline)	0.0	0.0	$0.00	-$1.28	73%	1	51	1	51	100%	100%	100%	2	12,730	1,785	6,736	2	12,730	1,785	6,736
LED Tube Type A 4 foot T5	0.0	0.0	$0.00	-$0.94	84%	51	2,532	51	2,532	100%	100%	100%	73	463,162	5,064	34,924	73	463,162	5,064	34,924
LED Tube Type C 4 foot T5	0.0	0.0	$0.00	-$0.89	84%	8	422	8	422	100%	100%	100%	12	73,624	2,110	10,584	12	73,624	2,110	10,584
LED Tube Type B 4 foot T5	0.0	0.0	$0.00	-$0.96	84%	25	1,266	25	1,266	100%	100%	100%	37	237,162	3,798	21,032	37	237,162	3,798	21,032
LED Linear Ambient <=35W	0.0	0.0	$0.00	-$1.90	84%	29	1,140	29	1,140	100%	100%	100%	20	125,565	22,800	147,341	20	125,565	22,800	147,341
LED Linear Ambient 36-60W	0.0	0.0	$0.00	-$2.53	84%	35	1,410	35	1,410	100%	100%	100%	44	277,292	35,250	254,478	44	277,292	35,250	254,478
LED Linear Ambient 61-100W	0.1	0.1	$0.00	-$3.56	84%	11	450	11	450	100%	100%	100%	26	163,299	17,100	113,573	26	163,299	17,100	113,573
Recommissioning Study Allocation	0.0	0.0	$0.00	$0.00	0%	1	14	1	14	100%	100%	100%	0	0	63,420	101,440	0	0	63,420	101,440
Motor Efficiency																				
New Motor Enhanced	0.1	0.0	$0.00	$0.00	78%	4	4	4	4	100%	100%	100%	0	1,366	160	725	0	1,366	160	725

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Increm't'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Motor Efficiency		Upgrade Motor	NEMA Premium Efficient Motor	15,650	4,806	EPACT Efficient Motor	15,950	4,806	20	$926	$0	$2,362	$0.08	39%	21.8	13.2	1,440	$0.643	$0.032	0.3	0.3	$0.00	$0.00	78%	40	54	40	54	100%	100%	100%	14	83,235	50,024	127,554	14	83,235	50,024	127,554
Motor Efficiency		Upgrade Motor Enhanced	NEMA Premium +1% Efficient Motor	5,447	5,243	EPACT Efficient Motor	5,663	5,243	20	$498	$0	$1,407	$0.08	35%	16.4	10.6	1,136	$0.438	$0.022	0.2	0.2	$0.00	$0.00	78%	9	13	9	13	100%	100%	100%	2	15,817	6,470	18,294	2	15,817	6,470	18,294
Motor Efficiency		Variable Frequency Drive	Equipment coupled with an ASD/VFD	7,699	4,643	Equipment without an ASD/VFD	11,443	4,643	15	$1,531	$0	$5,393	$0.08	28%	4.1	2.9	17,385	$0.088	$0.006	3.7	3.1	$0.00	$0.00	78%	400	1,138	400	1,138	100%	100%	100%	3,574	21,181,733	1,742,343	6,137,569	3,574	21,181,733	1,742,343	6,137,569
Motor Efficiency		CSMC	Motor with Voltage Controller	4,849	4,849	Motor without Voltage Controller	5,717	4,878	20	$345	$0	$1,188	$0.08	29%	3.6	2.6	4,376	$0.079	$0.004	0.9	0.7	$0.00	$0.00	78%	4	4	4	4	100%	100%	100%	3	18,740	1,379	4,754	3	18,740	1,379	4,754
Motor Efficiency		VFD on Well Pump	VFD Well Pump	60,222	2,653	Throttled Well Pump	85,155	2,653	15	$6,000	$0	$20,797	$0.08	29%	4.2	3.0	66,143	$0.091	$0.006	24.9	10.2	$0.00	$0.00	38%	3	3	3	3	100%	100%	100%	31	212,449	18,000	62,390	31	212,449	18,000	62,390
Motor Efficiency		Study	Motor Study	0	0	No Study	0	0	7	$10,000	$0	$20,000	$0.08	50%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	78%	1	1	1	1	100%	100%	100%	0	0	10,000	20,000	0	0	10,000	20,000
Motor Efficiency		Recommissioning Study	Efficient equipment as identified in a recommissioning study	0	0	Existing equipment	0	0	0	$32,980	$0	$56,547	$0.08	58%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	78%	1	1	1	1	100%	100%	100%	0	0	32,980	56,547	0	0	32,980	56,547
Motor Efficiency		Custom	New Equipment	47,392	4,549	Existing or New Inefficient	80,699	4,549	16	$7,770	$0	$49,399	$0.08	16%	3.6	3.0	151,521	$0.051	$0.003	33.3	12.6	$2,384.63	$0.00	35%	3	3	3	3	100%	100%	100%	38	486,684	23,310	148,196	38	486,684	23,310	148,196
Motor Efficiency		Tier 1 Constant to Constant 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.93	2,101	4,278	1	2,259	4278	20	$107	$0	$179.83	$0.07	60%	3.6	1.441	676.43	$0.159	$0.008	0.2	$0.13	$0.00	$0.00	78%	58	58	139	139	100%	100%	100%	8	42,006	6,228	10,430	18	100,669	14,927	24,996
Motor Efficiency		Tier 1 Constant to Constant 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.93	2,862	4,278	1	3,077	4278	20	$107	$0	$179.83	$0.07	60%	2.6	1.058	921.50	$0.117	$0.006	0.2	$0.18	$0.00	$0.00	78%	19	19	46	46	100%	100%	100%	3	18,746	2,040	3,417	8	45,385	4,940	8,272
Motor Efficiency		Tier 1 Constant to Constant 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.93	9,425	4,278	1	10,134	4278	20	$177	$0	$297.51	$0.07	59%	1.3	0.536	3034.83	$0.058	$0.003	0.7	$0.59	$0.00	$0.00	78%	101	101	242	240	100%	100%	100%	60	328,178	17,842	30,048	143	779,829	42,397	71,401
Motor Efficiency		Tier 1 Constant to Constant 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.93	12,840	4,278	1	13,806	4278	20	$177	$0	$297.51	$0.07	59%	1.0	0.393	4134.34	$0.043	$0.002	1.0	$0.81	$0.00	$0.00	78%	34	34	80	80	100%	100%	100%	28	150,501	6,006	10,115	65	354,119	14,132	23,800
Motor Efficiency		Tier 1 Constant to Constant 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.93	31,912	4,278	1	34,314	4278	20	$272	$0	$454.36	$0.07	60%	0.6	0.239	10275.70	$0.026	$0.001	2.4	$2.01	$0.00	$0.00	78%	64	64	153	152	100%	100%	100%	129	704,116	17,400	29,079	306	1,672,277	41,326	69,063
Motor Efficiency		Tier 1 Constant to Constant 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.93	43,474	4,278	1	46,746	4278	20	$272	$0	$454.36	$0.07	60%	0.4	0.175	13998.54	$0.019	$0.001	3.3	$2.74	$0.00	$0.00	78%	21	21	51	51	100%	100%	100%	58	314,742	5,710	9,542	140	764,374	13,866	23,172
Motor Efficiency		Tier 1 Constant to Constant 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.93	77,761	4,278	1	83,614	4278	20	$331	$0	$613.22	$0.07	54%	0.3	0.152	25039.01	$0.013	$0.001	5.9	$4.91	$0.00	$0.00	78%	17	17	40	40	100%	100%	100%	83	455,742	5,631	10,425	196	1,072,334	13,250	24,529
Motor Efficiency		Tier 1 Constant to Constant 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.93	105,933	4,278	1	113,907	4278	20	$331	$0	$613.22	$0.07	54%	0.2	0.111	34110.53	$0.010	$0.000	8.0	$6.69	$0.00	$0.00	78%	6	6	13	13	100%	100%	100%	40	219,125	1,988	3,679	87	474,772	4,306	7,972
Motor Efficiency		Tier 1 Variable to Variable 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,466	4,278	1	1,696	4278	20	$107	$0	$179.83	$0.07	60%	2.5	0.992	983.12	$0.109	$0.005	0.2	$0.19	$0.00	$0.00	78%	11	11	26	26	100%	100%	100%	2	11,579	1,181	1,978	5	27,367	2,792	4,676
Motor Efficiency		Tier 1 Variable to Variable 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,944	4,278	1	2,606	4278	20	$107	$0	$179.83	$0.07	60%	0.9	0.344	2831.22	$0.038	$0.002	0.7	$0.56	$0.00	$0.00	78%	4	4	9	9	100%	100%	100%	2	12,125	430	719	5	27,282	966	1,618
Motor Efficiency		Tier 1 Variable to Variable 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	6,579	4,278	1	7,009	4278	20	$177	$0	$297.51	$0.07	59%	2.2	0.883	1841.26	$0.096	$0.005	0.4	$0.36	$0.00	$0.00	78%	19	25	45	45	100%	100%	100%	9	49,284	4,416	7,438	16	88,711	7,949	13,388
Motor Efficiency		Tier 1 Variable to Variable 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	8,722	4,278	1	11,135	4278	20	$177	$0	$297.51	$0.07	59%	0.4	0.158	10320.63	$0.017	$0.001	2.4	$2.02	$0.00	$0.00	78%	6	12	15	15	100%	100%	100%	24	132,599	2,120	3,570	30	165,749	2,650	4,463
Motor Efficiency		Tier 1 Variable to Variable 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	22,276	4,278	1	23,733	4278	20	$272	$0	$454.36	$0.07	60%	1.0	0.394	6234.35	$0.044	$0.002	1.5	$1.22	$0.00	$0.00	78%	12	12	29	29	100%	100%	100%	15	80,099	3,263	5,452	35	193,572	7,885	13,176
Motor Efficiency		Tier 1 Variable to Variable 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	29,532	4,278	1	37,701	4278	20	$272	$0	$454.36	$0.07	60%	0.2	0.070	34944.82	$0.008	$0.000	8.2	$6.85	$0.00	$0.00	78%	4	4	10	10	100%	100%	100%	27	149,657	1,088	1,817	69	374,142	2,719	4,544
Motor Efficiency		Tier 1 Variable to Variable 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.47	54,280	4,278	1	57,831	4278	20	$331	$0	$613.22	$0.07	54%	0.5	0.250	15191.36	$0.022	$0.001	3.6	$2.98	$0.00	$0.00	78%	3	3	8	8	100%	100%	100%	9	48,795	994	1,840	24	130,119	2,650	4,906
Motor Efficiency		Tier 1 Variable to Variable 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.47	71,962	4,278	1	91,866	4278	20	$331	$0	$613.22	$0.07	54%	0.1	0.045	85150.75	$0.004	$0.000	19.9	$16.69	$0.00	$0.00	78%	1	1	2	2	100%	100%	100%	17	91,168	331	613	33	182,336	663	1,226
Motor Efficiency		Tier 1 Constant to Variable 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,466	4,278	1	2,259	4278	20	$591	$0	$1,477.09	$0.07	40%	5.9	3.519	3390.15	$0.174	$0.009	0.8	$0.66	$0.00	$0.00	78%	4	4	9	9	100%	100%	100%	3	14,519	2,362	5,908	6	32,667	5,316	13,294
Motor Efficiency		Tier 1 Constant to Variable 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,944	4,278	1	3,077	4278	20	$591	$0	$1,477.09	$0.07	40%	4.1	2.461	4847.63	$0.122	$0.006	1.1	$0.95	$0.00	$0.00	78%	1	3	3	3	100%	100%	100%	3	15,571	1,772	4,431	3	15,571	1,772	4,431
Motor Efficiency		Tier 1 Constant to Variable 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	6,579	4,278	1	10,134	4278	20	$1,204	$0	$2,228.59	$0.07	54%	2.0	0.906	15209.95	$0.079	$0.004	3.6	$2.98	$0.00	$0.00	78%	6	10	15	15	100%	100%	100%	30	162,847	12,045	22,286	45	244,271	18,067	33,429
Motor Efficiency		Tier 1 Constant to Variable 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	8,722	4,278	1	13,806	4278	20	$1,204	$0	$2,228.59	$0.07	54%	1.4	0.634	21748.95	$0.055	$0.003	5.1	$4.26	$0.00	$0.00	78%	2	11	5	5	100%	100%	100%	47	256,144	13,249	24,514	21	116,429	6,022	11,143
Motor Efficiency		Tier 1 Constant to Variable 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	22,276	4,278	1	34,314	4278	20	$3,208	$0	$5,358.18	$0.07	60%	1.4	0.562	51499.67	$0.062	$0.003	12.0	$10.10	$0.00	$0.00	78%	4	15	10	10	100%	100%	100%	151	827,083	48,123	80,373	101	551,388	32,082	53,582
Motor Efficiency		Tier 1 Constant to Variable 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	29,532	4,278	1	46,746	4278	20	$3,208	$0	$5,358.18	$0.07	60%	1.0	0.393	73640.19	$0.044	$0.002	17.2	$14.44	$0.00	$0.00	78%	1	11	3	3	100%	100%	100%	159	867,283	35,290	58,940	43	236,532	9,625	16,075
Motor Efficiency		Tier 1 Constant to Variable 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.47	54,280	4,278	1	83,614	4278	20	$6,758	$0	$11,441.87	$0.07	59%	1.2	0.502	125490.30	$0.054	$0.003	29.3	$24.60	$0.00	$0.00	78%	1	2	3	3	100%	100%	100%	49	268,716	13,515	22,884	74	403,074	20,273	34,326
Motor Efficiency		Tier 1 Constant to Variable 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.47	71,962	4,278	1	113,907	4278	20	$6,758	$0	$11,441.87	$0.07	59%	0.9	0.351	179440.55	$0.038	$0.002	41.9	$35.18	$0.00	$0.00	78%	0	2	1	1	100%	100%	100%	70	384,241	13,515	22,884	35	192,121	6,758	11,442
Motor Efficiency		Tier 2 Constant to Constant 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.855	1,931	4,278	1	2,259	4278	20	$197	$0	$449.07	$0.07	44%	4.3	2.423	1401.19	$0.141	$0.007	0.3	$0.27	$0.00	$0.00	78%	15	15	35	35	100%	100%	100%	4	22,503	2,953	6,736	10	52,507	6,891	15,718
Motor Efficiency		Tier 2 Constant to Constant 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.855	2,631	4,278	1	3,077	4278	20	$197	$0	$449.07	$0.07	44%	3.2	1.778	1908.83	$0.103	$0.005	0.4	$0.37	$0.00	$0.00	78%	5	5	12	12	100%	100%	100%	2	10,219	984	2,245	4	24,525	2,362	5,389
Motor Efficiency		Tier 2 Constant to Constant 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.855	8,665	4,278	1	10,134	4278	20	$442	$0	$739.03	$0.07	60%	1.6	0.637	6286.44	$0.070	$0.004	1.5	$1.23	$0.00	$0.00	78%	25	25	60	60	100%	100%	100%	31	168,267	11,041	18,476	74	403,840	26,498	44,342
Motor Efficiency		Tier 2 Constant to Constant 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.855	11,804	4,278	1	13,806	4278	20	$442	$0	$739.03	$0.07	60%	1.2	0.467	8563.99	$0.052	$0.003	2.0	$1.68	$0.00	$0.00	78%	8	8	20	20	100%	100%	100%	13	73,353	3,533	5,912	34	183,383	8,833	14,781
Motor Efficiency		Tier 2 Constant to Constant 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.855	29,339	4,278	1	34,314	4278	20	$653	$0	$1,123.77	$0.07	58%	0.7	0.298	21285.38	$0.031	$0.002	5.0	$4.17	$0.00	$0.00	78%	16	16	38	38	100%	100%	100%	67	364,632	10,440	17,980	159	866,000	24,796	42,703
Motor Efficiency		Tier 2 Constant to Constant 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.855	39,968	4,278	1	46,746	4278	20	$653	$0	$1,123.77	$0.07	58%	0.5	0.219	28996.98	$0.023	$0.001	6.8	$5.68	$0.00	$0.00	78%	5	7	13	13	100%	100%	100%	40	217,322	4,568	7,866	74	403,598	8,483	14,609
Motor Efficiency		Tier 2 Constant to Constant 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.855	71,490	4,278	1	83,614	4278	20	$861	$0	$1,511.92	$0.07	57%	0.4	0.169	51866.51	$0.017	$0.001	12.1	$10.17	$0.00	$0.00	78%	4	4	10	10	100%	100%	100%	41	222,126	3,445	6,048	102	555,316	8,613	15,119
Motor Efficiency		Tier 2 Constant to Constant 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.855	97,390	4,278	1	113,907	4278	20	$861	$0	$1,511.92	$0.07	57%	0.3	0.124	70657.52	$0.012	$0.001	16.5	$13.85	$0.00	$0.00	78%	1	1	3	3	100%	100%	100%	14	75,650	861	1,512	42	226,951	2,584	4,536
Motor Efficiency		Tier 2 Variable to Variable 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.415	1,295	4,278	1	1,696	4278	20	$197	$0	$449.07	$0.07	44%	3.5	1.977	1717.22	$0.115	$0.006	0.4	$0.34	$0.00	$0.00	78%	3	3	7	7	100%	100%	100%	1	5,516	591	1,347	2	12,870	1,378	3,144
Motor Efficiency		Tier 2 Variable to Variable 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.415	1,717	4,278	1	2,606	4278	20	$197	$0	$449.07	$0.07	44%	1.6	0.892	3804.45	$0.052	$0.003	0.9	$0.75	$0.00	$0.00	78%	1	2	2	2	100%	100%	100%	1	8,147	394	898	1	8,147	394	898
Motor Efficiency		Tier 2 Variable to Variable 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.415	5,809	4,278	1	7,009	4278	20	$442	$0	$739.03	$0.07	60%	1.9	0.780	5134.80	$0.086	$0.004	1.2	$1.01	$0.00	$0.00	78%	5	5	11	11	100%	100%	100%	5	27,488	2,208	3,695	11	60,474	4,858	8,129
Motor Efficiency		Tier 2 Variable to Variable 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.415	7,701	4,278	1	11,135	4278	20	$442	$0	$739.03	$0.07	60%	0.7	0.273	14687.05	$0.030	$0.002	3.4	$2.88	$0.00	$0.00	78%	2	2	4	4	100%	100%	100%	6	31,450	883	1,478	12	62,900	1,767	2,956
Motor Efficiency		Tier 2 Variable to Variable 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.415	19,669	4,278	1	23,733	4278	20	$653	$0	$1,123.77	$0.07	58%	0.9	0.365	17386.01	$0.038	$0.002	4.1	$3.41	$0.00	$0.00	78%	3	3	7	7	100%	100%	100%	10	55,844	1,958	3,371	24	130,302	4,568	7,866
Motor Efficiency		Tier 2 Variable to Variable 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.415	26,076	4,278	1	37,701	4278	20	$653	$0	$1,123.77	$0.07	58%	0.3	0.128	49729.17	$0.013	$0.001	11.6	$9.75	$0.00	$0.00	78%	1	1	2	2	100%	100%	100%	10	53,243	653	1,124	19	106,486	1,305	2,248
Motor Efficiency		Tier 2 Variable to Variable 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.415	47,928	4,278	1	57,831	4278	20	$861	$0	$1,511.92	$0.07	57%	0.5	0.207	42364.84	$0.020	$0.001	9.9	$8.31	$0.00	$0.00	78%	1	1	2	2	100%	100%	100%	8	45,359	861	1,512	17	90,717	1,723	3,024
Motor Efficiency		Tier 2 Variable to Variable 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.415	63,541	4,278	1	91,866	4278	20	$861	$0	$1,511.92	$0.07	57%	0.2	0.072	121176.07	$0.007	$0.000	28.3	$23.76	$0.00	$0.00	78%	0	1	1	1	100%	100%	100%	24	129,739	861	1,512	24	129,739	861	1,512
Motor Efficiency		Tier 2 Constant to Variable 1-5 HP Pump	Efficient non-vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,466	4,278	1	2,259	4278	20	$591	$0	$1,477.09	$0.07	40%	5.9	3.519	3390.15	$0.174	$0.009	0.8	$0.66	$0.00	$0.00	78%	1	1	2	2	100%	100%	100%	1	3,630	591	1,477	1	7,259	1,181	2,954
Motor Efficiency		Tier 2 Constant to Variable 1-5 HP Pump	Efficient vertical turbine pump with an average HP of 3.57 and a PEI of 0.47	1,944	4,278	1	3,077	4278	20	$591	$0	$1,477.09	$0.07	40%	4.1	2.461	4847.63	$0.122	$0.006	1.1	$0.95	$0.00	$0.00	78%	0	1	1	1	100%	100%	100%	1	5,190	591	1,477	1	5,190	591	1,477
Motor Efficiency		Tier 2 Constant to Variable 7.5-30 HP Pump	Efficient non-vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	6,579	4,278	1	10,134	4278	20	$1,204	$0	$2,228.59	$0.07	54%	2.0	0.906	15209.95	$0.079	$0.004	3.6	$2.98	$0.00	$0.00	78%	2	2	4	4	100%	100%	100%	6	32,569	2,409	4,457	12	65,139	4,818	8,914
Motor Efficiency		Tier 2 Constant to Variable 7.5-30 HP Pump	Efficient vertical turbine pump with an average HP of 16.0 and a PEI of 0.47	8,722	4,278	1	13,806	4278	20	$1,204	$0	$2,228.59	$0.07	54%	1.4	0.634	21748.95	$0.055	$0.003	5.1	$4.26	$0.00	$0.00	78%	1	2	1	1	100%	100%	100%	9	46,572	2,409	4,457	4	23,286	1,204	2,229
Motor Efficiency		Tier 2 Constant to Variable 40-75 HP Pump	Efficient non-vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	22,276	4,278	1	34,314	4278	20	$3,208	$0	$5,358.18	$0.07	60%	1.4	0.562	51499.67	$0.062	$0.003	12.0	$10.10	$0.00	$0.00	78%	1	2	2	2	100%	100%	100%	20	110,278	6,416	10,716	20	110,278	6,416	10,716
Motor Efficiency		Tier 2 Constant to Variable 40-75 HP Pump	Efficient vertical turbine pump with an average HP of 54.3 and a PEI of 0.47	29,532	4,278	1	46,746	4278	20	$3,208	$0	$5,358.18	$0.07	60%	1.0	0.393	73640.19	$0.044	$0.002	17.2	$14.44	$0.00	$0.00	78%	0	2	1	1	100%	100%	100%	29	157,688	6,416	10,716	14	78,844	3,208	5,358
Motor Efficiency		Tier 2 Constant to Variable 100-200 HP Pump	Efficient non-vertical turbine pump with an average HP of 132. and a PEI of 0.47	54,280	4,278	1	83,614	4278	20	$6,758	$0	$11,441.87	$0.07	59%	1.2	0.502	125490.30	$0.054	$0.003	29.3	$24.60	$0.00	$0.00	78%	0	2	1	1	100%	100%	100%	49	268,716	13,515	22,884	25	134,358	6,758	11,442
Motor Efficiency		Tier 2 Constant to Variable 100-200 HP Pump	Efficient vertical turbine pump with an average HP of 132. and a PEI of 0.47	71,962	4,278	1	113,907	4278	20	$6,758	$0	$11,441.87	$0.07	59%	0.9	0.351	179440.55	$0.038	$0.002	41.9	$35.18	$0.00	$0.00	78%	0	1	0	0	100%	100%	100%	35	192,121	6,758	11,442	0	0	0	0
Multi Family Building Efficiency		***Multi Family Building Efficiency***																																					
Multi Family Building Efficiency	Showerhead	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	103	8,760	2.5 GPM Showerhead	172	8,760	10	$5.60	$0	$5.60	0.12	100%	0.05	-	604	$0.009	$0.001	0.07	0.05	$39.46	$0.00	64%	33	269	7	67	100%	100%	100%	13	173,741	0	0	3.16	43,087	$373	$373
Multi Family Building Efficiency	Showerhead - Handheld	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	103	8,760	2.5 GPM Showerhead	172	8,760	10	$16.25	$0	$16.25	0.12	100%	0.15	-	604	$0.027	$0.003	0.07	0.05	$39.46	$0.00	64%	0	0	3	26	100%	100%	100%	0	0	0	0	1.25	17,055	$429	$429
Multi Family Building Efficiency	Aerators - Kitchen	Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.5 GPM Kitchen Faucet Aerator	24	8,760	2.2 GPM Kitchen Faucet Aerator	35	8,760	10	$2.86	$0	$2.86	0.12	100%	0.17	-	98	$0.029	$0.003	0.01	0.01	$5.40	$0.00	124%	34	276	5	47	100%	100%	100%	4	28,870	0	0	0.70	4,938	$135	$135
Multi Family Building Efficiency	Aerators - Bathroom	Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.0 GPM Bathroom Faucet Aerator	7	8,760	2.2 GPM Bathroom Faucet Aerator	15	8,760	10	$1.48	$0	$1.48	0.12	100%	0.11	-	73	$0.020	$0.002	0.01	0.01	$4.75	$0.00	124%	20	166	3	25	100%	100%	100%	2	12,908	0	0	0.28	1,944	$37	$37
Multi Family Building Efficiency	Aerators - Bathroom	Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	15	8,760	10	$4.00	$0	$4.00	0.12	100%	0.21	-	103	$0.039	$0.004	0.01	0.02	$6.73	$0.00	124%	14	110	10	93	100%	100%	100%	2	12,117	0	0	1.45	10,249	$372	$372
Multi Family Building Efficiency	~~Water Heater Blanket~~	~~Water Heater Blanket on Electric Water Heater~~	~~Add commercial insulation wrap R8 around Water Heater Tank~~	~~41~~	~~8,760~~	~~No External Insulation on water heater~~	~~69~~	~~8,760~~	~~7~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~0.12~~	~~#DIV/0!~~	~~-~~	~~-~~	~~245~~	~~$0.000~~	~~$0.000~~	~~0.03~~	~~0.03~~	~~$0.00~~	~~$0.00~~	~~100%~~	~~1~~	~~8~~	0	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~2,226~~	~~0~~	~~0~~	0.00	0.00	$0	$0
Multi Family Building Efficiency	Value LEDs	Replace screw-in incandescents within tenant units with LEDs	LED Bulbs	9	642	Average EISA Standard halogen A-Style Bulb	55	642	16	$5.48	$0	$5.48	0.12	100%	1.58	-	29	$0.187	$0.012	0.05	0.00	$0.00	$0.00	8%	6,388	52,573	5,372	51,167	100%	100%	100%	211	1,682,676	0	0	205	1637658	$280,394	$280,394
Multi Family Building Efficiency	Common Area LED	Replace screw-in incandescents in common areas with screw-in LEDs	LED Bulbs	9	4,243	Average EISA Standard halogen A-Style Bulb	70	4,243	6	$5.48	$0	$5.48	0.07	100%	0.29	-	257	$0.021	$0.004	0.06	0.05	$0.00	$0.00	74%	355	2,924	167	1,587	100%	100%	100%	142	804,964	0	0	77	436980	$8,698	$8,698
Multi Family Building Efficiency	~~Prescriptive Retrofit Lighting - Exit Signs~~	~~Exit sign retrofit and replacement~~	~~LED/LEC Exit~~	~~1~~	~~7,602~~	~~Incandescent~~	~~44~~	~~7,602~~	~~20~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~0.07~~	~~#DIV/0!~~	~~-~~	~~-~~	~~321~~	~~$0.000~~	~~$0.000~~	~~0.04~~	~~0.05~~	~~-$1.76~~	~~$0.00~~	~~100%~~	~~8~~	~~68~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~3~~	~~23,287~~	~~0~~	~~0~~	0.00	0.00	$0	$0
Multi Family Building Efficiency	~~Performance Buildings~~	~~Holistic efficiency projects totaling either 15%, 20%, or 25% whole-building savings~~	~~Average Performance Building~~	~~10,315~~	~~8,760~~	~~Average existing multifamily building after Direct Install measures completed~~	~~11,398~~	~~8,760~~	~~20~~	~~$2,401.24~~	~~$17,578~~	~~$2,366.02~~	~~0.07~~	~~105%~~	~~3.66~~	~~(0.19)~~	~~9,486~~	~~$0.263~~	~~$0.013~~	~~1.08~~	~~1.16~~	~~$0.00~~	~~$0.00~~	~~100%~~	~~12~~	~~101~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~118~~	~~1,025,783~~	~~251,615~~	~~238,968~~	0.00	0.00	$0	$0
Multi Family Building Efficiency	Water Heater Setback	Water Heater Setback	Building hot water system with setback	13,355	8,760	Building hot water system without setback	13,912	8,760	2	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	4,875	$0.000	$0.000	0.56	0.60	$0.00	$0.00	100%	0	0	0	1	100%	100%	100%	0	0	0	0	0.60	5,219.20	$0	$0
Multi Family Building Efficiency	Power Strip	Power Strip	Tier 1 Advanced Power Strip	45	6,588	Standard Power Strip	55	6,588	7	$15.00	$0	$15.00	0.12	100%	1.83	-	69	$0.216	$0.031	0.01	0.01	$0.00	$0.00	83%	0	0	720	6,860	100%	75%	100%	0	0	0	0	48.34	382,019.00	$102,900	$102,900
Multi Family Building Efficiency	Renter Kit 9W LED	Renter Kit 9W LED	9W LED	9	909	EISA Standard Bulb	43	909	17	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	31	$0.000	$0.000	0.03	0.00	$0.00	$0.00	8%	0	0	21	200	100%	55%	100%	0	0	0	0	0.32	3,639.89	$0	$0
Multi Family Building Efficiency	Renter Kit 11W LED	Renter Kit 11W LED	11W LED	11	909	EISA Standard Bulb	53	909	17	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	38	$0.000	$0.000	0.04	0.00	$0.00	$0.00	8%	0	0	21	200	100%	55%	100%	0	0	0	0	0.40	4,496.34	$0	$0
Multi Family Building Efficiency	Renter Kit Showerhead	Renter Kit Showerhead	1.5 GPM Showerhead	103	8,760	2.5 GPM Showerhead	172	8,760	10	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	604	$0.000	$0.000	0.07	0.05	$39.46	$0.00	64%	0	0	0	2	100%	35%	100%	0	0	0	0	0.03	452.49	$0	$0
Multi Family Building Efficiency	Renter Kit Bathroom Aerator	Renter Kit Kitchen Aerator	1.5 GPM Kitchen Faucet Aerator	24	8,760	2.2 GPM Kitchen Faucet Aerator	35	8,760	10	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	98	$0.000	$0.000	0.01	0.01	$5.40	$0.00	124%	0	0	0	2	100%	30%	100%	0	0	0	0	0.01	62.75	$0	$0
Multi Family Building Efficiency	Renter Kit Kitchen Aerator	Renter Kit Bathroom Aerator	1.0 GPM Bathroom Faucet Aerator	7	8,760	2.2 GPM Bathroom Faucet Aerator	15	8,760	10	$0.00	$0	$0.00	0.12	#DIV/0!	-	-	73	$0.000	$0.000	0.01	0.01	$4.75	$0.00	124%	0	0	0	2	100%	25%	100%	0	0	0	0	0.01	38.88	$0	$0
Multi Family Building Efficiency	MN - Custom Efficiency - Lighting	Custom Lighting Projects	LED Lighting	11	3,000	Low Efficient Option	42	3,000	17	$17	$2	$27	0.07	61%	4.14	1.62	92	$0.179	$0.011	0.03	0.01	$0.00	-$0.20	22%	0	0	34	326	100%	100%	100%	0	0	0	0	2.39	32,247.21	$5,401	$8,877
Multi Family Building Efficiency	MN - Lighting Efficiency Rebate & MN - Lighting Efficiency - Instant Rebate	Prescriptive Lighting Equipment	LED Lighting	17	4,297	Low Efficient Option	45	4,297	10	$15	$6	$23	0.07	66%	2.69	0.91	121	$0.125	$0.013	0.03	0.02	$0.00	-$0.36	73%	0	0	489	4,660	100%	100%	100%	0	0	0	0	103.54	605,714.81	$70,834	$107,202
Multi Family Building Efficiency	MN - Cooling Efficiency - Prescriptive	Prescriptive Cooling Equipment	Efficient Cooling Equipment	8,766	665	Inefficient Cooling Equipment	10,104	665	20	$761	$6,324	$2,254	0.08	34%	32.08	21.26	890	$0.855	$0.043	1.34	1.29	$0.00	$0.00	90%	0	0	1	11	100%	100%	100%	0	0	0	0	13.78	10,140.14	$8,098	$23,996
Multi Family Building Efficiency	MN - Motors and Drives - Prescriptive	Prescriptive Motors & Drives Equipment	Efficient Motors & Drives	1,439	4,727	Inefficient Motors	1,564	4,727	19	$231	$0	$975	0.07	24%	22.44	17.12	591	$0.392	$0.021	0.12	0.10	$0.00	$0.00	78%	0	0	1	11	100%	100%	100%	0	0	0	0	1.12	6,731.04	$2,463	$10,380
Multi Family Building Efficiency	Custom Projects	Custom Electric	Efficient Equipment	1,864	3,099	Inefficient Equipment	2,330	3,099	19	$227	$0	$2,132	0.12	11%	12.51	11.18	1,444	$0.157	$0.008	0.47	0.13	$0.00	$0.00	25%	0	0	1	12	100%	100%	100%	0	0	0	0	1.49	18,287.93	$2,688	$25,216
Multi Family Building Efficiency	Custom Projects	Custom Combo	Efficient Equipment	1,476	5,162	Inefficient Equipment	1,845	5,162	19	$104	$0	$848	0.12	12%	3.77	3.31	1,905	$0.055	$0.003	0.37	0.36	$0.00	$0.00	91%	0	0	3	27	100%	100%	100%	0	0	0	0	9.87	55,954.62	$2,861	$23,262

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Increm't'l Cost Payback Period w/o Rebate (yrs)	Increm't'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)
Multi Family Building Efficiency	Carryover Projects	Carryover Projects	Efficient Equipment	27,677	4,697	Inefficient Equipment	34,597	4,697	19	$7,991	$0	$17,929	0.12	45%	4.73	2.62	32,498
Process Efficiency		***Process Efficiency***	0	0	0	0	0	0	0	$0	$0	$0	#N/A	#DIV/0!	#N/A	#N/A	0
Process Efficiency		Custom	Optimized System	1,027,147	6,022	Old or less efficient systems or equipment	1,075,269	6,022	19	$19,054	$0	$141,025	$0.07	14%	2.5	2.2	289,767
Process Efficiency		Lighting	Optimized System	139	5,042	0	194	5,042	16	$23	$10	$90	$0.07	26%	4.6	3.4	278
Process Efficiency		Motors	Optimized System	8,003	4,696	Old or less efficient systems or equipment	11,546	4,696	15	$1,488	$2	$5,198	$0.08	29%	4.2	3.0	16,639
Process Efficiency		Implementation of ECO's found in studies	Post-Recommissioned Building	290,028	5,900	Pre-Recommissioned Building	322,254	5,900	7	$4,105	$0	$13,512	$0.06	30%	1.1	0.7	190,143
Process Efficiency		Cooling	More efficient cooling equipment	8,890	1,976	Code-minimum equipment	10,366	1,976	19	$975	$7,017	$2,275	$0.08	43%	10.3	5.9	2,918
Process Efficiency		Compressed Air and FSO Measures	Optimized System	53,197	5,896	Non-Optimized System	59,896	5,896	17	$3,390	$2,901	$9,751	$0.07	35%	3.6	2.4	39,501
Process Efficiency		Energy Design Assistance	More Efficient than Code Building	147,974	4,659	Code-Compliant Building	211,391	4,659	20	$33,092	$0	$116,752	$0.07	28%	5.6	4.0	295,453
Process Efficiency		Behavioral Changes	Behavior changes that reduce energy use	2,962,572	8,760	No change in behavior	3,024,892	8,760	1	$0	$0	$0	$0.06	#DIV/0!	0.0	0.0	545,921
Process Efficiency		Behavioral Changes	Behavior changes that reduce energy use	-1,975,048	8,760	No change in behavior	-2,016,594	8,760	1	$0	$0	$0	$0.06	#DIV/0!	0.0	0.0	-363,947
Process Efficiency		Phase 2 new customer contribution	0	0	0	0	0	0	0	$0	$0	$6,000	$0.07	0%	#DIV/0!	#DIV/0!	0
Process Efficiency		System Optimization and Annual Achievement Bonuses	0	0	0	0	0	0	0	$46,133	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0
Process Efficiency		Incentives to Trade Partners	0	0	0	0	0	0	0	$2,061	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0
Recommissioning		***Recommissioning***	0	0	0	0	0	0	0	$0	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0
Recommissioning		Recommissioning Implementation	Post-Recommissioned Building	290,028	5,900	Pre-Recommissioned Building	322,254	5,900	7	$4,105	$0	$13,512	$0.06	30%	1.1	0.7	190,143
Recommissioning		Recommissioning Studies	Study Cost and Rebate	0	0	0	0	0	0	$8,053	$0	$12,108	$0.06	67%	#DIV/0!	#DIV/0!	0
Recommissioning		BOC Program Attributable Savings	Energy Use After Class	319,343	8,760	Energy Usage Before Class	322,254	8,760	5	$318	$0	$646	$0.06	49%	0.4	0.2	25,498
Recommissioning		Refrigeration Recommissioning	Optimized Refrigeration Systems	0	0	Existing Refrigeration Systems - Not Tuned or Optimized	0	0	0	$0	$0	$0	$0.06	#DIV/0!	#DIV/0!	#DIV/0!	0
Turn Key Services		***Turn Key Services***	0	0	0	0	0	0	0	$0	$0	$0	#N/A	#DIV/0!	#N/A	#N/A	0
Turn Key Services		Identification ~ On site audit	Identification of opportunities	0	0	0	0	0	0	$1,735	$0	$2,275	$0.08	76%	#DIV/0!	#DIV/0!	0
Turn Key Services		Implementation	High Eff Project	29,500	4,393	Lower Efficient Product or System	39,041	4,393	16	$5,630	$0	$13,712	$0.08	41%	4.2	2.5	41,913
Turn Key Services		Building Tune Up Implementation	Implemented Recommissioning Measures	96,408	6,138	Existing systems	107,120	6,138	7	$2,681	$0	$12,244	$0.06	22%	1.6	1.3	65,746
Electric Rate Savings		***Electric Rate Savings***	0	0	0	0	0	0	0	$0	$0	$0	$0.07	#DIV/0!	#DIV/0!	#DIV/0!	0
Electric Rate Savings		The Electric Rate Savings Program is offered to any business customer who can reduce their electric loads during control periods by at least 50 kW. In return for reducing their electric loads, they receive a monthly discount on their demand charges.	Utility Load Control for control period	150,000	18	No Control	350,000	18	5	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	3,532
Saver's Switch for Business		***Saver's Switch For Business***	0	0	0	0	0	0	0	$0	$0	$0	#N/A	#DIV/0!	#N/A	#N/A	0
Saver's Switch for Business		Commercial AC Switch Single Stage - MN	Utility Load Control for control period with smart switch	0	0	No Control, No Switch	4,562	1	15	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	3
Saver's Switch for Business		Commercial AC Switch Multi Stage - MN	Utility Load Control for control period with smart switch	0	0	No Control, No Switch	14,023	0	15	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	6
Residential Demand Response		***Residential Demand Response***															
Residential Demand Response	MN - Smart Thermostat - DR - Self Install	Residential Smart Thermostat	Utility Load Control for control period with Tier II or III thermostat	0	1	Existing standard manual or Non Utilized Tier I Thermostat	2,402	1	10	$125	$0	$215	$0.11	58%	1059.4	443.5	2
Residential Demand Response	MN - Smart Thermostat - DR - Direct Install	Residential Smart Thermostat	Utility Load Control for control period with Tier II or III thermostat	0	1	Existing standard manual or Non Utilized Tier I Thermostat	2,402	1	10	$225	$0	$225	$0.11	100%	1108.7	0.0	2
Residential Demand Response	MN - Smart Thermostat - DR - BYOT	Residential Smart Thermostat	Utility Load Control for control period with Tier II or III thermostat	0	1	Existing standard manual or Non Utilized Tier I Thermostat	2,402	1	10	$75	$0	$0	$0.11	#DIV/0!	0.0	-369.6	2
Residential Demand Response	MN - Residential AC Switch	MN - Residential AC Switch	Utility Load Control for control period with smart switch	0	0	No control, no switch	2,402	1	15	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	2
Residential Demand Response	MN - Residential WH Switch	MN - Residential WH Switch	Utility Load Control for control period with smart switch	0	0	No control, no switch	4,500	1	15	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	3
Residential Demand Response	MN - Smart Thermostat - EE - Direct Install	Direct Install Smart Thermostat EE - AC & Gas Heating - Electric only & Combo	Average Single Family House with EnergyStar Smart Thermostat	2,707	442	Average Single Family House with Standard Thermostat	3,008	442	10	$0	$0	$0	$0.10	#DIV/0!	0.0	0.0	133
Residential Demand Response	MN - Smart Thermostat - EE - Direct Install	Direct Install Smart Thermostat EE - AC & Electric Heating	Average Single Family House with EnergyStar Smart Thermostat	2,707	4,068	Average Single Family House with Standard Thermostat	3,008	4,250	10	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	1,770
Residential Demand Response	MN - Smart Thermostat - EE - Self Install	BYOT EE - AC & Gas Heating - Electric Only Customer	Average Single Family House with EnergyStar Smart Thermostat	2,707	442	Average Single Family House with Standard Thermostat	3,008	442	10	$50	$0	$215	$0.10	23%	15.7	12.1	133
Residential Demand Response	MN - Smart Thermostat - EE - Self Install	BYOT EE - AC & Gas Heating - Combo Customer	Average Single Family House with EnergyStar Smart Thermostat	2,707	442	Average Single Family House with Standard Thermostat	3,008	442	10	$19	$0	$81	$0.10	23%	5.9	4.5	133
Residential Demand Response	MN - Smart Thermostat - EE - Self Install	BYOT EE - AC & Electric Heating	Average Single Family House with EnergyStar Smart Thermostat	2,707	4,068	Average Single Family House with Standard Thermostat	3,008	4,250	10	$50	$0	$215	$0.11	23%	1.1	0.8	1,770
Residential Demand Response	Water Heater DR - Heat Pump Water Heater (CTA 2045)	Demand response capability on new heat pump water heater (CTA 2045)	Heat Pump Water Heater w/ DR Management	0	0	No management of water heater time of use	4,500	1	15	$100	$0	$100	$0.11	100%	263.0	0.0	3
Residential Demand Response	Water Heater DR - Grid Enabled Electric Resistance Water Heater (CTA 2045)	Demand response capability on grid enabled electric resistance water heater (CTA 2045)	Electric Resistance Water Heater w/ DR Management	0	0	No management of water heater time of use	4,500	1	15	$100	$0	$100	$0.11	100%	263.0	0.0	3
Residential Demand Response	Water Heater DR - Electric Resistance Water Heater Grid Retrofit (Non-CTA 2045)	Demand response capability on existing electric resistance water heater equipped with demand response capable retrofit device (DR switch w/ Non-CTA 2045)	Electric Resistance Water Heater w/ DR Management	0	0	No management of water heater time of use	4,500	1	15	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	3
Home Energy Savings Program		***Home Energy Savings Program***															
Home Energy Savings Program		Refrigerator Replacements	Top Mounted Freezer w/ Auto Defrost Energy Star refrigerator 22.0 Cf	66	5,592	Top Mounted Freezer w/ Auto Defrost Refrigerator 22.0 Cf > 15 years	173	5,592	18	$617	$0	$617	$0.11	100%	9.4	0.0	595
Home Energy Savings Program		Freezer Replacement	Energy Star standard freezer	57	5,592	Existing unit vintage > 15 years old	147	5,592	18	$320	$0	$320	$0.11	100%	5.7	0.0	508
Home Energy Savings Program		Refrigerator Recycling	Removal of second refrigerator	0	0	Existing primary unit - age mostly >15 years	203	5,592	8	$47	$0	$47	$0.11	100%	0.4	0.0	1,133
Home Energy Savings Program		Freezer Recycling	Removal of freezer	0	0	Existing primary unit - age mostly >10 years	206	5,592	6	$43	$0	$43	$0.11	100%	0.3	0.0	1,155
Home Energy Savings Program		Window Air Conditioner Replacement	Energy Star 10,000 Btu/hr 10.8 EER Window AC Unit	885	662	Standard 10,000 Btu/hr 9.8 EER Window AC Unit	917	662	9	$409	$0	$409	$0.11	100%	173.2	0.0	21
Home Energy Savings Program		Window Air Conditioner Recycling	Removal of Standard 10,000 Btu/hr 9.8 EER Window AC Unit	0	662	Standard 10,000 Btu/hr 9.8 EER Window AC Unit	917	662	5	$63	$0	$63	$0.11	100%	0.9	0.0	607
Home Energy Savings Program		EC Fan Motor on New Residential Furnace without AC	ECM Furnace Fan	301	2,783	Non-ECM Fan	504	2,783	18	$525	$0	$525	$0.11	100%	10.9	0.0	565
Home Energy Savings Program		Attic Insulation - Gas Heated & Electrically Cooled Home	Insulate the attic to R-48 & perform Bypass air sealing	32,685	490	Existing home with average attic area of 823 sq. ft. and R-17 insulation	32,770	490	20	$24	$0	$24	$0.11	100%	5.1	0.0	42
Home Energy Savings Program		Attic Insulation - Electrically Heated & Non-Cooled Home	Insulate the attic to R-48 & perform Bypass air sealing	31,626	1,261	Existing home with average attic area of 823 sq. ft. and R-17 insulation	32,770	1,261	20	$1,524	$0	$1,524	$0.11	100%	9.6	0.0	1,443
Home Energy Savings Program		Attic Insulation - Electrically Heated & Cooled Home	Insulate the attic to R-48 & perform Bypass air sealing	31,922	1,751	Existing home with average attic area of 823 sq. ft. and R-17 insulation	32,770	1,751	20	$1,524	$0	$1,524	$0.11	100%	9.3	0.0	1,484
Home Energy Savings Program		Air Sealing - Gas Heated & Electrically Cooled Home	Perform Bypass air sealing along with Attic Insulation	32,624	490	Existing home with average home size of 1406 sq. ft.	32,685	490	10	$77	$0	$77	$0.11	100%	23.3	0.0	30
Home Energy Savings Program		Air Sealing - Electrically Heated & Non-Cooled Home	Perform Bypass air sealing along with Attic Insulation	30,480	1,261	Existing home with average home size of 1406 sq. ft.	31,626	1,261	10	$880	$0	$880	$0.11	100%	5.5	0.0	1,445
Home Energy Savings Program		Air Sealing - Electrically Heated & Cooled Home	Perform Bypass air sealing along with Attic Insulation	31,080	1,751	Existing home with average home size of 1406 sq. ft.	31,922	1,751	10	$880	$0	$880	$0.11	100%	5.4	0.0	1,475
Home Energy Savings Program		Wall Insulation - Gas Heated and Electrically Cooled Home	Add Insulation to Walls (R-11 added)	32,580	490	Existing Home with empty wall cavity (assume structure insulation value)	32,770	490	20	$103	$0	$103	$0.11	100%	10.0	0.0	93
Home Energy Savings Program		Wall Insulation - Electrically Heated and Non-Cooled Home	Add Insulation to Walls (R-11 added)	30,208	1,261	Existing Home with empty wall cavity (assume structure insulation value)	32,770	1,261	20	$1,295	$0	$1,295	$0.11	100%	3.6	0.0	3,230
Home Energy Savings Program		Wall Insulation - Electrically Heated and Cooled Home	Add Insulation to Walls (R-11 added)	30,872	1,751	Existing Home with empty wall cavity (assume structure insulation value)	32,770	1,751	20	$1,295	$0	$1,295	$0.11	100%	3.5	0.0	3,324
Home Energy Savings Program		LEDs - 2017	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	7	$3	$0	$3	$0.11	100%	0.9	0.0	34
Home Energy Savings Program		LEDs - 2018	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	6	$3	$0	$3	$0.11	100%	0.9	0.0	34
Home Energy Savings Program		LEDs - 2019	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	5	$4	$0	$4	$0.11	100%	0.9	0.0	34
Multi-Family Energy Savings Program		***Multi-Family Energy Savings Program***															
Multi-Family Energy Savings Program		Refrigerator Replacement with new Energy Star Refrigerator	Top Mounted Freezer w/ Auto Defrost Energy Star refrigerator 22.0 Cf	66	5,592	Top Mounted Freezer w/ Auto Defrost Refrigerator 22.0 Cf > 15 years	173	5,592	18	$520	$0	$520	$0.11	100%	7.9	0.0	595
Multi-Family Energy Savings Program		Freezer Replacement with new Energy Star Freezer	Energy Star standard freezer	57	5,592	Existing unit vintage > 15 years old	147	5,592	18	$244	$0	$244	$0.11	100%	4.4	0.0	508
Multi-Family Energy Savings Program		Refrigerator Removal and Recycling	Removal of second refrigerator	0	0	Existing primary unit - age mostly >15 years	203	5,592	8	$33	$0	$33	$0.11	100%	0.3	0.0	1,133
Multi-Family Energy Savings Program		Freezer Removal and Recycling	Removal of freezer	0	0	Existing primary unit - age mostly >10 years	206	5,592	6	$33	$0	$33	$0.11	100%	0.3	0.0	1,155
Multi-Family Energy Savings Program		Window Air Conditioner Replacement with Energy Star 10,000 Btu/hr 10.8 EER Window AC Unit	Energy Star 10,000 Btu/hr 10.8 EER Window AC Unit	885	662	Standard 10,000 Btu/hr 9.8 EER Window AC Unit	917	662	9	$409	$0	$409	$0.11	100%	180.2	0.0	21
Multi-Family Energy Savings Program		Window Air Conditioner Removal and Recycling of Standard 10,000 Btu/hr 9.8 EER Window AC Unit	Removal of Standard 10,000 Btu/hr 9.8 EER Window AC Unit	0	0	Standard 10,000 Btu/hr 9.8 EER Window AC Unit	917	662	5	$33	$0	$33	$0.11	100%	0.5	0.0	607
Multi-Family Energy Savings Program		Value LED Bulbs - 2017	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	7	$5	$0	$5	$0.11	100%	1.4	0.0	34
Multi-Family Energy Savings Program		Value LED Bulbs - 2018	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	6	$5	$0	$5	$0.11	100%	1.4	0.0	34
Multi-Family Energy Savings Program		Value LED Bulbs - 2019	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	5	$5	$0	$5	$0.11	100%	1.4	0.0	34
Energy Efficient Showerhead		***Energy Efficient Showerhead***															
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	59	8,760	2.5 GPM Showerhead	98	8,760	10	$3	$0	$3	$0.11	100%	0.1	0.0	343
Energy Efficient Showerhead		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	74
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$0	$0	$0	$0.11	100%	0.0	0.0	64
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM for second faucet to replace existing 2.2 gpm aerator in home with electric DHW heater	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$0	$0	$0	$0.11	100%	0.0	0.0	64
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	59	8,760	2.5 GPM Showerhead	98	8,760	10	$3	$0	$3	$0.11	100%	0.1	0.0	343
Energy Efficient Showerhead		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	74
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	91
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM for second faucet to replace existing 2.2 gpm aerator in home with electric DHW heater	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	91
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510
Energy Efficient Showerhead		Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	1.5 GPM Showerhead	59	8,760	2.5 GPM Showerhead	98	8,760	10	$3	$0	$3	$0.11	100%	0.1	0.0	343
Energy Efficient Showerhead		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	74

Program	Electric Measure Description	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Multi Family Building Efficiency	Carryover Projects	$0.246	$0.013	6.92	3.68	-$41.05	$0.00	49%	0	0	1	10	100%	100%	100%	0	0	0	0	36.78	347,947.54	$79,910	$179,293
Process Efficiency	***Process Efficiency***	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	0	0	0	0	0%	0%	0%	0	0	0	0	0	0	0	0
Process Efficiency	Custom	$0.066	$0.004	48.1	11.2	$35,302.58	$0.00	22%	68	68	68	68	100%	100%	100%	761	21,096,503	1,295,665	9,589,695	761	21,096,503	1,295,665	9,589,695
Process Efficiency	Lighting	$0.083	$0.005	0.1	0.0	$0.00	-$0.73	65%	19	19,500	19	19,500	100%	100%	100%	752	5,797,138	451,832	1,754,788	752	5,797,138	451,832	1,754,788
Process Efficiency	Motors	$0.089	$0.006	3.5	3.0	$0.00	$0.00	78%	63	569	63	569	100%	100%	100%	1,692	10,142,657	846,995	2,959,441	1,692	10,142,657	846,995	2,959,441
Process Efficiency	Implementation of ECO's found in studies	$0.022	$0.003	32.2	17.7	$1,365.94	$0.00	51%	1	1	1	1	100%	100%	100%	18	203,579	4,105	13,512	18	203,579	4,105	13,512
Process Efficiency	Cooling	$0.334	$0.017	1.5	1.4	$0.00	$0.00	90%	20	843	20	843	100%	100%	100%	1,198	2,633,200	822,077	1,917,556	1,198	2,633,200	822,077	1,917,556
Process Efficiency	Compressed Air and FSO Measures	$0.086	$0.005	6.7	5.1	$0.00	$0.00	71%	13	72	13	72	100%	100%	100%	366	3,037,464	243,447	700,319	366	3,037,464	243,447	700,319
Process Efficiency	Energy Design Assistance	$0.112	$0.006	63.4	49.7	-$46.02	$0.00	73%	9	9	9	9	100%	100%	100%	447	2,846,976	297,825	1,050,772	447	2,846,976	297,825	1,050,772
Process Efficiency	Behavioral Changes	$0.000	$0.000	62.3	34.2	$0.00	$0.00	51%	2	2	2	2	100%	100%	100%	68	1,168,996	0	0	68	1,168,996	0	0
Process Efficiency	Behavioral Changes	$0.000	$0.000	-41.5	-40.0	$0.00	$0.00	90%	2	2	2	2	100%	100%	100%	-80	-779,330	0	0	-80	-779,330	0	0
Process Efficiency	Phase 2 new customer contribution	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	15	15	15	15	100%	100%	100%	0	0	0	90,000	0	0	0	90,000
Process Efficiency	System Optimization and Annual Achievement Bonuses	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	10	10	10	10	100%	100%	100%	0	0	461,325	0	0	0	461,325	0
Process Efficiency	Incentives to Trade Partners	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	16	16	16	16	100%	100%	100%	0	0	32,977	0	0	0	32,977	0
Recommissioning	***Recommissioning***	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Recommissioning	Recommissioning Implementation	$0.022	$0.003	32.2	17.7	$1,365.94	$0.00	51%	30	30	30	30	100%	100%	100%	531	6,107,379	123,146	405,363	531	6,107,379	123,146	405,363
Recommissioning	Recommissioning Studies	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	40	40	40	40	100%	100%	100%	0	0	322,111	484,317	0	0	322,111	484,317
Recommissioning	BOC Program Attributable Savings	$0.012	$0.002	2.9	1.6	$0.00	$0.00	51%	19	19	19	19	100%	100%	100%	30	518,704	6,036	12,269	30	518,704	6,036	12,269
Recommissioning	Refrigeration Recommissioning	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	51%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Turn Key Services	***Turn Key Services***	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	0	0	0	0	0%	0%	0%	0	0	0	0	0	0	0	0
Turn Key Services	Identification ~ On site audit	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	145	145	145	145	100%	100%	100%	0	0	251,575	329,875	0	0	251,575	329,875
Turn Key Services	Implementation	$0.134	$0.008	9.5	5.6	-$22.01	$0.00	55%	131	131	131	131	100%	100%	100%	738	5,878,532	737,516	1,796,232	738	5,878,532	737,516	1,796,232
Turn Key Services	Building Tune Up Implementation	$0.041	$0.006	10.7	6.3	$0.00	$3,596.12	55%	30	30	30	30	100%	100%	100%	190	2,111,767	80,415	367,310	190	2,111,767	80,415	367,310
Electric Rate Savings	***Electric Rate Savings***	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Electric Rate Savings	The Electric Rate Savings Program is offered to any business customer who can reduce their electric loads during control periods by at least 50 kW. In return for reducing their electric loads, they receive a monthly discount on their demand charges.	$0.000	$0.000	200.0	102.1	$0.00	$0.00	47%	45	45	45	45	100%	100%	100%	4,593	170,174	0	0	4,593	170,174	0	0
Saver's Switch for Business	***Saver's Switch For Business***	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	0	0	0	0	0%	0%	0%	0	0	0	0	0	0	0	0
Saver's Switch for Business	Commercial AC Switch Single Stage - MN	$0.000	$0.000	4.562	1.094	$0.00	$0.00	22%	747	2,240	747	2,240	100%	100%	100%	2,451	6,276	0	0	2,451	6,276	0	0
Saver's Switch for Business	Commercial AC Switch Multi Stage - MN	$0.000	$0.000	14.023	2.449	$0.00	$0.00	16%	187	560	187	560	100%	100%	100%	1,372	3,393	0	0	1,372	3,393	0	0
Residential Demand Response	***Residential Demand Response***																						
Residential Demand Response	Residential Smart Thermostat (MN - Smart Thermostat - DR - Self Install)	$69.926	$6.993	2.402	1.244	$0.00	$0.00	47%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Residential Demand Response	Residential Smart Thermostat (MN - Smart Thermostat - DR - Direct Install)	$125.866	$12.587	2.402	1.244	$0.00	$0.00	47%	1,500	1,500	6,250	6,250	100%	100%	100%	1,866	2,927	337,500	337,500	7,775	12,197	1,406,250	1,406,250
Residential Demand Response	Residential Smart Thermostat (MN - Smart Thermostat - DR - BYOT)	$41.955	$4.196	2.4	1.2	$0.00	$0.00	47%	13,500	13,500	3,750	3,750	100%	100%	100%	16,793	26,346	1,012,500	0	4,665	7,318	281,250	0
Residential Demand Response	MN - Residential AC Switch	$0.000	$0.000	2.4	0.7	$0.00	$0.00	28%	20,000	20,000	10,000	10,000	100%	100%	100%	14,987	39,031	0	0	7,493	19,515	0	0
Residential Demand Response	MN - Residential WH Switch	$0.000	$0.000	4.5	0.2	$0.00	$0.00	4%	25	25	25	25	100%	100%	100%	5	91	0	0	5	91	0	0
Residential Demand Response	Direct Install Smart Thermostat EE - AC & Gas Heating - Electric only & Combo	$0.000	$0.000	0.3	0.3	$0.00	$0.00	76%	0	0	6,235	6,235	100%	100%	100%	0	0	0	0	1,563	904,984	0	0
Residential Demand Response	Direct Install Smart Thermostat EE - AC & Electric Heating	$0.000	$0.000	0.3	0.3	$0.00	$0.00	76%	0	0	15	15	100%	100%	100%	0	0	0	0	4	28,986	0	0
Residential Demand Response	BYOT EE - AC & Gas Heating - Electric Only Customer	$0.376	$0.038	0.3	0.3	$0.00	$0.00	76%	0	0	1,585	1,585	100%	100%	100%	0	0	0	0	397	230,056	79,250	340,775
Residential Demand Response	BYOT EE - AC & Gas Heating - Combo Customer	$0.141	$0.014	0.3	0.3	$0.00	$0.00	76%	0	0	1,750	1,750	100%	100%	100%	0	0	0	0	439	254,005	32,900	141,470
Residential Demand Response	BYOT EE - AC & Electric Heating	$0.028	$0.003	0.3	0.3	$0.00	$0.00	76%	0	0	15	15	100%	100%	100%	0	0	0	0	4	28,986	750	3,225
Residential Demand Response	Demand response capability on new heat pump water heater (CTA 2045)	$29.861	$1.991	4.5	4.9	$0.00	$0.00	100%	0	0	15	15	100%	100%	100%	0	0	0	0	74	55	1,500	1,500
Residential Demand Response	Demand response capability on grid enabled electric resistance water heater (CTA 2045)	$29.861	$1.991	4.5	4.9	$0.00	$0.00	100%	0	0	15	15	100%	100%	100%	0	0	0	0	74	55	1,500	1,500
Residential Demand Response	Demand response capability on existing electric resistance water heater equipped with demand response capable retrofit device (DR switch w/ Non-CTA 2045)	$0.000	$0.000	4.5	4.9	$0.00	$0.00	100%	0	0	10	10	100%	100%	100%	0	0	0	0	49	37	0	0
Home Energy Savings Program	***Home Energy Savings Program***																						
Home Energy Savings Program	Refrigerator Replacements	$1.036	$0.058	0.1	0.1	$0.00	$0.00	64%	548	685	548	685	100%	100%	100%	51	445,144	411,732	422,527	51	445,144	411,732	422,527
Home Energy Savings Program	Freezer Replacement	$0.629	$0.035	0.1	0.1	$0.00	$0.00	64%	201	275	201	275	100%	100%	100%	17	152,627	87,157	87,956	17	152,627	87,157	87,956
Home Energy Savings Program	Refrigerator Recycling	$0.041	$0.005	0.2	0.1	$0.00	$0.00	64%	4	5	4	5	100%	100%	100%	1	6,184	235	235	1	6,184	235	235
Home Energy Savings Program	Freezer Recycling	$0.037	$0.006	0.2	0.1	$0.00	$0.00	64%	1	2	1	2	100%	100%	100%	0	2,521	85	85	0	2,521	85	85
Home Energy Savings Program	Window Air Conditioner Replacement	$19.044	$2.116	0.0	0.0	$0.00	$0.00	90%	334	480	334	480	100%	100%	100%	15	11,266	190,384	196,526	15	11,266	190,384	196,526
Home Energy Savings Program	Window Air Conditioner Recycling	$0.103	$0.023	0.9	0.9	$0.00	$0.00	90%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	EC Fan Motor on New Residential Furnace without AC	$0.929	$0.052	0.2	0.1	-$14.06	$0.00	27%	82	139	82	139	100%	100%	100%	8	85,737	65,343	72,953	8	85,737	65,343	72,953
Home Energy Savings Program	Attic Insulation - Gas Heated & Electrically Cooled Home	$0.567	$0.028	0.1	0.0	$0.00	$0.00	0%	85	119	85	119	100%	100%	100%	0	5,409	2,748	2,807	0	5,409	2,748	2,807
Home Energy Savings Program	Attic Insulation - Electrically Heated & Non-Cooled Home	$1.056	$0.053	1.1	0.0	$0.00	$0.00	0%	4	15	4	15	100%	100%	100%	0	23,626	15,242	22,862	0	23,626	15,242	22,862
Home Energy Savings Program	Attic Insulation - Electrically Heated & Cooled Home	$1.027	$0.051	0.8	0.0	$0.00	$0.00	0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	Air Sealing - Gas Heated & Electrically Cooled Home	$2.573	$0.257	0.1	0.1	$0.00	$0.00	100%	85	119	85	119	100%	100%	100%	8	3,876	8,941	9,133	8	3,876	8,941	9,133
Home Energy Savings Program	Air Sealing - Electrically Heated & Non-Cooled Home	$0.609	$0.061	1.1	0.0	$0.00	$0.00	0%	4	15	4	15	100%	100%	100%	0	23,667	8,802	13,203	0	23,667	8,802	13,203
Home Energy Savings Program	Air Sealing - Electrically Heated & Cooled Home	$0.597	$0.060	0.8	0.1	$0.00	$0.00	10%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	Wall Insulation - Gas Heated and Electrically Cooled Home	$1.105	$0.055	0.2	0.2	$0.00	$0.00	100%	13	28	13	28	100%	100%	100%	6	2,850	2,370	2,885	6	2,850	2,370	2,885
Home Energy Savings Program	Wall Insulation - Electrically Heated and Non-Cooled Home	$0.401	$0.020	2.6	0.0	$0.00	$0.00	0%	5	15	5	15	100%	100%	100%	0	52,898	14,245	19,426	0	52,898	14,245	19,426
Home Energy Savings Program	Wall Insulation - Electrically Heated and Cooled Home	$0.390	$0.019	1.9	0.2	$0.00	$0.00	10%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	LEDs - 2017	$0.099	$0.014	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	LEDs - 2018	$0.101	$0.016	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Savings Program	LEDs - 2019	$0.102	$0.020	0.0	0.0	$0.00	$0.00	8%	752	2,400	752	2,400	100%	100%	100%	8	89,965	8,413	8,413	8	89,965	8,413	8,413
Multi-Family Energy Savings Program	***Multi-Family Energy Savings Program***																						
Multi-Family Energy Savings Program	Refrigerator Replacement with new Energy Star Refrigerator	$0.874	$0.049	0.1	0.1	$0.00	$0.00	64%	89	697	89	697	100%	100%	100%	52	452,942	362,440	362,440	52	452,942	362,440	362,440
Multi-Family Energy Savings Program	Freezer Replacement with new Energy Star Freezer	$0.480	$0.027	0.1	0.1	$0.00	$0.00	64%	3	22	3	22	100%	100%	100%	1	12,210	5,368	5,368	1	12,210	5,368	5,368
Multi-Family Energy Savings Program	Refrigerator Removal and Recycling	$0.029	$0.004	0.2	0.1	$0.00	$0.00	64%	1	11	1	11	100%	100%	100%	2	13,606	363	363	2	13,606	363	363
Multi-Family Energy Savings Program	Freezer Removal and Recycling	$0.029	$0.005	0.2	0.1	$0.00	$0.00	64%	1	11	1	11	100%	100%	100%	2	13,865	363	363	2	13,865	363	363
Multi-Family Energy Savings Program	Window Air Conditioner Replacement with Energy Star 10,000 Btu/hr 10.8 EER Window AC Unit	$19.044	$2.116	0.0	0.0	$0.00	$0.00	55%	53	414	53	414	100%	100%	100%	8	9,717	169,504	169,504	8	9,717	169,504	169,504
Multi-Family Energy Savings Program	Window Air Conditioner Removal and Recycling of Standard 10,000 Btu/hr 9.8 EER Window AC Unit	$0.054	$0.012	0.9	0.6	$0.00	$0.00	55%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Multi-Family Energy Savings Program	Value LED Bulbs - 2017	$0.151	$0.021	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Multi-Family Energy Savings Program	Value LED Bulbs - 2018	$0.151	$0.025	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Multi-Family Energy Savings Program	Value LED Bulbs - 2019	$0.151	$0.030	0.0	0.0	$0.00	$0.00	8%	1,619	12,702	1,619	12,702	100%	100%	100%	42	476,139	66,050	66,050	42	476,139	66,050	66,050
Energy Efficient Showerhead	***Energy Efficient Showerhead***																						
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	$0.006	$0.001	0.1	0.0	$33.37	$0.00	64%	0	0	0	0	100%	60%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	$0.009	$0.001	0.0	0.0	$22.44	$0.00	64%	0	0	0	0	100%	50%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.020	$0.002	0.0	0.0	$4.17	$0.00	124%	0	0	0	0	100%	40%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.007	$0.001	0.0	0.0	$4.19	$0.00	124%	0	0	0	0	100%	40%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM for second faucet to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.007	$0.001	0.0	0.0	$4.19	$0.00	124%	0	0	0	0	100%	30%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	$0.006	$0.001	0.1	0.0	$33.37	$0.00	64%	0	0	0	0	100%	60%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	$0.009	$0.001	0.0	0.0	$22.44	$0.00	64%	0	0	0	0	100%	50%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.021	$0.002	0.0	0.0	$4.17	$0.00	124%	0	0	0	0	100%	40%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.018	$0.002	0.0	0.0	$5.93	$0.00	124%	0	0	0	0	100%	40%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM for second faucet to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.018	$0.002	0.0	0.0	$5.93	$0.00	124%	0	0	0	0	100%	30%	100%	0	0	0	0	0	0	0	0
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in electric DHW heater	$0.007	$0.001	0.1	0.0	$33.37	$0.00	64%	427	1,920	427	1,920	100%	60%	100%	47	641,916	6,374	6,374	47	641,916	6,374	6,374
Energy Efficient Showerhead	Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in electric DHW heater	$0.010	$0.001	0.0	0.0	$22.44	$0.00	64%	320	1,440	320	1,440	100%	50%	100%	20	269,730	4,781	4,781	20	269,730	4,781	4,781
Energy Efficient Showerhead	Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	$0.022	$0.002	0.0	0.0	$4.17	$0.00	124%	427	1,920	427	1,920	100%	40%	100%	9	61,867	3,091	3,091	9	61,867	3,091	3,091

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Incremt'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	91	$0.019	$0.002	0.0	0.0	$5.93	$0.00	124%	427	1,920	427	1,920	100%	40%	100%	11	76,060	3,300	3,300	11	76,060	3,300	3,300
Energy Efficient Showerhead		Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM for second faucet to replace existing 2.2 gpm aerator in home with electric DHW heater	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$2	$0	$2	$0.11	100%	0.1	0.0	91	$0.019	$0.002	0.0	0.0	$5.93	$0.00	124%	320	1,440	320	1,440	100%	30%	100%	6	42,784	2,475	2,475	6	42,784	2,475	2,475
Energy Feedback Residential		***Energy Feedback Residential***	0	0	0	0	0	0	0	$0	$0	$0	#N/A	#DIV/0!	#N/A	#N/A	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	0	0	0	0	0%	0%	0%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Rollup: Online Group Savings	Treatment	809	8,426	Control	811	8,426	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	19	$0.000	$0.000	0.0	0.0	$0.00	$0.00	85%	26,220	26,220	26,220	26,220	100%	100%	100%	55	538,606	0	0	55	538,606	0	0
Energy Feedback Residential		Rollup: Existing Participant 2017 Savings	Treatment	1,215	4,108	Control	1,267	4,106	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	212	$0.000	$0.000	0.1	0.1	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Rollup: New Participant 2017 Savings	Treatment	1,073	4,156	Control	1,098	4,155	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	105	$0.000	$0.000	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Rollup: Existing Participant 2018 Savings	Treatment	1,116	4,120	Control	1,166	4,119	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	204	$0.000	$0.000	0.1	0.1	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Rollup: New Participant 2018 Savings	Treatment	1,028	4,170	Control	1,053	4,169	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	104	$0.000	$0.000	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Rollup: Existing Participant 2019 Savings	Treatment	1,055	4,121	Control	1,105	4,120	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	207	$0.000	$0.000	0.1	0.1	$0.00	$0.00	96%	210,100	210,100	210,100	210,100	100%	100%	100%	11,208	47,379,913	0	0	11,208	47,379,913	0	0
Energy Feedback Residential		Rollup: New Participant 2019 Savings	Treatment	974	4,164	Control	999	4,163	1	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	103	$0.000	$0.000	0.0	0.0	$0.00	$0.00	96%	20,000	20,000	20,000	20,000	100%	100%	100%	527	2,248,908	0	0	527	2,248,908	0	0
Energy Feedback Residential		Behavioral Adjustment-Online Group Savings	Treatment	-539	8,426	Control	-541	8,426	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-13	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	85%	0	26,220	0	26,220	100%	100%	100%	-36	-359,071	0	0	-36	-359,071	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: Existing Participants 2017 Savings	Treatment	-810	4,108	Control	-845	4,106	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-141	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: New Participant 2017 Savings	Treatment	-715	4,156	Control	-732	4,155	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-70	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: Existing Participants 2018 Savings	Treatment	-744	4,120	Control	-777	4,119	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-136	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: New Participant 2018 Savings	Treatment	-685	4,170	Control	-702	4,169	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-69	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: Existing Participants 2019 Savings	Treatment	-703	4,121	Control	-737	4,120	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-138	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	210,100	0	210,100	100%	100%	100%	-7,472	-31,586,608	0	0	-7,472	-31,586,608	0	0
Energy Feedback Residential		Behavioral Adjustments Rollup: New Participant 2019 Savings	Treatment	-649	4,164	Control	-666	4,163	0	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	-69	$0.000	#DIV/0!	0.0	0.0	$0.00	$0.00	96%	0	20,000	0	20,000	100%	100%	100%	-351	-1,499,272	0	0	-351	-1,499,272	0	0
Efficient New Home Construction		***Efficient New Home Construction***	0	0	0	0	0	0	0	$0	$0	$0	$0.11	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Efficient New Home Construction		Low Income Envelope Improvements - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 1773 and Average 12.7% Better Than Code	12,586	678	Reference Home Based upon Local Code	12,686	678	20	$34	$0	$80	$0.12	42%	10.0	5.8	68	$0.494	$0.025	0.1	0.1	$0.00	$0.00	72%	14	25	14	25	100%	100%	100%	2	1,850	837	1,993	2	1,850	837	1,993
Efficient New Home Construction		10% to 15% improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3630 and Average 13.1% Better Than Code	43,895	269	Reference Home Based upon Local Code	44,223	269	20	$31	$0	$157	$0.12	19%	15.1	12.2	88	$0.346	$0.017	0.3	0.3	$0.00	$0.00	90%	112	200	112	200	100%	100%	100%	65	19,233	6,100	31,368	65	19,233	6,100	31,368
Efficient New Home Construction		15% to 20% improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3834 and Average 17.4% Better Than Code	35,432	339	Reference Home Based upon Local Code	35,843	339	20	$57	$0	$258	$0.12	22%	15.7	12.2	139	$0.409	$0.020	0.4	0.4	$0.00	$0.00	90%	210	376	210	376	100%	100%	100%	153	57,255	21,432	96,969	153	57,255	21,432	96,969
Efficient New Home Construction		20% to 25% improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4439 and Average 21.3% Better Than Code	22,868	564	Reference Home Based upon Local Code	23,421	564	20	$122	$0	$417	$0.12	29%	11.3	8.0	312	$0.391	$0.020	0.6	0.5	$0.00	$0.00	90%	80	144	80	144	100%	100%	100%	79	49,060	17,568	60,098	79	49,060	17,568	60,098
Efficient New Home Construction		25% to 30% improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5711 and Average 25.9% Better Than Code	45,217	349	Reference Home Based upon Local Code	46,217	349	20	$160	$0	$630	$0.12	25%	15.3	11.4	349	$0.458	$0.023	1.0	1.0	$0.00	$0.00	90%	22	40	22	40	100%	100%	100%	39	15,218	6,384	25,182	39	15,218	6,384	25,182
Efficient New Home Construction		30% to 35% improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5613 and Average 32.7% Better Than Code	6,876	2,660	Reference Home Based upon Local Code	10,209	2,660	20	$774	$0	$4,054	$0.12	19%	3.9	3.1	8,866	$0.087	$0.004	3.3	1.1	$0.00	$0.00	30%	22	40	22	40	100%	100%	100%	43	387,180	30,960	162,168	43	387,180	30,960	162,168
Efficient New Home Construction		35% and greater improvement over local code - Combo Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4362 and Average 35.8% Better Than Code	4,393	2,419	Reference Home Based upon Local Code	5,893	2,419	20	$432	$0	$2,184	$0.12	20%	5.1	4.1	3,629	$0.119	$0.006	1.5	0.6	$0.00	$0.00	38%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Efficient New Home Construction		10% to 15% improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3630 and Average 8.1% Better Than Code	20,147	620	Reference Home Based upon Local Code	20,556	620	20	$100	$0	$158	$0.12	63%	5.3	2.0	254	$0.394	$0.020	0.4	0.4	$0.00	$0.00	90%	112	201	112	201	100%	100%	100%	81	55,663	20,100	31,835	81	55,663	20,100	31,835
Efficient New Home Construction		15% to 20% improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3834 and Average 13.2% Better Than Code	21,509	565	Reference Home Based upon Local Code	21,970	565	20	$100	$0	$259	$0.12	39%	8.4	5.2	261	$0.384	$0.019	0.5	0.5	$0.00	$0.00	90%	400	717	400	717	100%	100%	100%	326	204,039	71,700	185,994	326	204,039	71,700	185,994
Efficient New Home Construction		20% to 25% improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4439 and Average 17.5% Better Than Code	20,709	613	Reference Home Based upon Local Code	21,257	613	20	$100	$0	$419	$0.12	24%	10.6	8.0	336	$0.298	$0.015	0.5	0.5	$0.00	$0.00	90%	123	220	123	220	100%	100%	100%	119	80,709	22,000	92,106	119	80,709	22,000	92,106
Efficient New Home Construction		25% to 30% improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5711 and Average 21.3% Better Than Code	45,217	349	Reference Home Based upon Local Code	46,217	349	20	$100	$0	$630	$0.12	16%	15.3	12.9	349	$0.287	$0.014	1.0	1.0	$0.00	$0.00	90%	34	61	34	61	100%	100%	100%	60	23,208	6,100	38,402	60	23,208	6,100	38,402
Efficient New Home Construction		30% to 35% improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5613 and Average 25.9% Better Than Code	6,876	2,660	Reference Home Based upon Local Code	10,209	2,660	20	$100	$0	$4,054	$0.12	2%	3.9	3.8	8,866	$0.011	$0.001	3.3	1.1	$0.00	$0.00	30%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Efficient New Home Construction		35% and greater improvement over local code - Electric Only Customers	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4362 and Average 32.7% Better Than Code	4,393	2,419	Reference Home Based upon Local Code	5,893	2,419	20	$100	$0	$2,184	$0.12	5%	5.1	4.9	3,629	$0.028	$0.001	1.5	0.6	$0.00	$0.00	38%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Efficient New Home Construction		Energy Star Clothes Washer - Combo Customers w/ Electric DHW	Energy Star Clothes Washer	370	295	Standard Clothes Washer	477	295	11	$10	$677	$30	$0.12	33%	2.2	1.5	32	$0.316	$0.029	0.1	0.0	$10.00	$0.00	3%	1	1	1	1	100%	100%	100%	0	35	10	30	0	35	10	30
Efficient New Home Construction		Energy Star Clothes Washer - Electric Only Customers w/ Electric DHW	Energy Star Clothes Washer	370	295	Standard Clothes Washer	477	295	11	$10	$677	$30	$0.12	33%	2.2	1.5	32	$0.316	$0.029	0.1	0.0	$10.00	$0.00	3%	193	345	193	345	100%	100%	100%	1	11,904	3,450	10,350	1	11,904	3,450	10,350
Efficient New Home Construction		Energy Star Clothes Washer - Combo Customers w/ Gas DHW	Energy Star Clothes Washer	111	295	Standard Clothes Washer	132	295	11	$3	$677	$10	$0.12	33%	0.9	0.6	6	$0.514	$0.047	0.0	0.0	$10.00	$0.00	3%	143	256	143	256	100%	100%	100%	0	1,767	832	2,496	0	1,767	832	2,496
Efficient New Home Construction		Energy Star Clothes Washer - Electric Only Customers w/ Gas DHW	Energy Star Clothes Washer	111	295	Standard Clothes Washer	132	295	11	$10	$677	$10	$0.12	103%	0.9	0.0	6	$1.582	$0.144	0.0	0.0	$10.00	$0.00	3%	1	1	1	1	100%	100%	100%	0	7	10	10	0	7	10	10
Efficient New Home Construction		Energy Star Refrigerator	Top Mounted Freeezer w/ Auto Defrost Energy Star refrigerator 22.0 Cf	66	5,592	Top Mounted Freeezer w/ Auto Defrost Standard refrigerator 22.0 Cf	74	5,592	18	$15	$663	$26	$0.12	58%	5.4	2.3	41	$0.364	$0.020	0.0	0.0	$0.00	$0.00	64%	558	1,000	558	1,000	100%	100%	100%	5	45,000	15,000	26,040	5	45,000	15,000	26,040
Efficient New Home Construction		Energy Star Radon Fan	Energy Star Radon Fan - Radonaway RP140	17	8,760	Energy Star Radon Fan - Radonaway RP145	48	8,760	10	$10	$139	-$4	$0.12	-250%	-0.1	-0.4	273	$0.037	$0.004	0.0	0.0	$0.00	$0.00	100%	202	202	202	202	100%	100%	100%	7	60,262	2,020	-808	7	60,262	2,020	-808
Residential Heating		***Residential Heating***																																					
Residential Heating		EC Fan Motor on Retrofit Residential Furnace with AC	ECM Furnace Fan	357	2,542	Non-ECM Fan	569	2,542	7	$100	$236	$212	$0.11	47%	4.3	2.3	539	$0.186	$0.027	0.2	0.1	-$9.50	$0.00	63%	50	50	50	50	100%	100%	100%	7	29,421	5,000	10,600	7	29,421	5,000	10,600
Residential Heating		EC Fan Motor on Retrofit Residential Furnace no AC	ECM Furnace Fan	298	2,133	Non-ECM Fan	501	2,133	7	$100	$236	$212	$0.11	47%	5.6	2.9	433	$0.231	$0.033	0.2	0.1	-$9.50	$0.00	27%	50	50	50	50	100%	100%	100%	3	23,635	5,000	10,600	3	23,635	5,000	10,600
Residential Heating		EC Fan Motor on new Residential Furnace with AC	ECM Furnace Fan	390	3,556	Non-ECM Fan	579	3,556	18	$100	$236	$212	$0.11	47%	3.5	1.9	672	$0.149	$0.008	0.2	0.1	-$14.06	$0.00	71%	8,900	8,900	8,900	8,900	100%	100%	100%	1,310	6,529,258	890,000	1,886,800	1,310	6,529,258	890,000	1,886,800
Residential Heating		EC Fan Motor on new Residential Furnace no AC	ECM Furnace Fan	301	2,783	Non-ECM Fan	504	2,783	18	$100	$236	$212	$0.11	47%	4.4	2.3	565	$0.177	$0.010	0.2	0.1	-$14.06	$0.00	27%	1,000	1,000	1,000	1,000	100%	100%	100%	60	616,812	100,000	212,000	60	616,812	100,000	212,000
Home Energy Squad		***Home Energy Squad***																																					
Home Energy Squad		NEC Energy Squad Service 2017	weighted average Energy Efficient measures by participant	63	955	weighted average Baseline measures by participant	104	955	7		$0	$3	$0.12	0%	0.5	0.5	40	$0.000	$0.000	0.0	0.0	$0.07	$0.87	10%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Squad		NEC Energy Squad Service 2018	weighted average Energy Efficient measures by participant	63	955	weighted average Baseline measures by participant	104	955	6		$0	$3	$0.12	0%	0.5	0.5	40	$0.000	$0.000	0.0	0.0	$0.07	$0.87	10%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Squad		NEC Energy Squad Service 2019	weighted average Energy Efficient measures by participant	63	955	weighted average Baseline measures by participant	104	955	5		$0	$3	$0.12	0%	0.5	0.5	40	$0.000	$0.000	0.0	0.0	$0.07	$0.87	10%	2,199	50,831	2,199	50,831	100%	100%	100%	230	2,218,264	0	154,000	230	2,218,264	0	154,000
Home Energy Squad		NEC - TV peripherals turned off with Timer	TV peripherals turned off with Timer (replacing power strip)	2	4,420	Power used in "standby" mode while equipment is unused	28	4,420	5	$0	$0	$20	$0.12	0%	1.5	1.5	115	$0.000	$0.000	0.0	0.0	$0.00	$0.00	19%	0	1	0	1	100%	100%	100%	0	120	0	19	0	120	0	19
Home Energy Squad		Install Second Programmable Thermostat	Second T-state w/ Auto setup by 1 F for cooling assume 3 ton AC, 10 SEER	1,504	442	Base modeled home w/ 10 SEER AC and no setup temp	1,565	449	10	$0	$0	$30	$0.12	0%	1.0	1.0	38	$0.000	$0.000	0.1	0.1	$0.00	$25.17	90%	1	17	1	17	100%	100%	100%	1	709	0	518	1	709	0	518
Home Energy Squad		CEE Energy Squad Service 2017	weighted average Energy Efficient measures by participant	83	973	weighted average Baseline measures by participant	125	973	7		$0	$0	$0.12	0%	0.1	0.1	41	$0.000	$0.000	0.0	0.0	$0.09	$0.00	11%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Squad		CEE Energy Squad Service 2018	weighted average Energy Efficient measures by participant	83	973	weighted average Baseline measures by participant	125	973	6		$0	$0	$0.12	0%	0.1	0.1	41	$0.000	$0.000	0.0	0.0	$0.09	$0.00	11%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Energy Squad		CEE Energy Squad Service 2019	weighted average Energy Efficient measures by participant	83	973	weighted average Baseline measures by participant	125	973	6		$0	$0	$0.12	0%	0.1	0.1	41	$0.000	$0.000	0.0	0.0	$0.09	$0.00	11%	2,499	41,688	2,499	41,688	100%	100%	100%	205	1,875,592	0	14,805	205	1,875,592	0	14,805
Home Energy Squad		CEE - TV peripherals turned off with Timer	TV peripherals turned off with Timer (replacing power strip)	2	4,420	Power used in "standby" mode while equipment is unused	28	4,420	5	$0	$0	$20	$0.12	0%	1.5	1.5	115	$0.000	$0.000	0.0	0.0	$0.00	$0.00	19%	0	1	0	1	100%	100%	100%	0	139	0	22	0	139	0	22
Home Energy Squad		CEE - Install Second Programmable Thermostat	Second T-state w/ Auto setup by 1 F for cooling assume 3 ton AC, 10 SEER	1,504	442	Base modeled home w/ 10 SEER AC and no setup temp	1,565	449	10	$0	$0	$9	$0.12	0%	2.0	2.0	38	$0.000	$0.000	0.1	0.1	$0.00	$0.00	76%	1	20	1	20	100%	100%	100%	1	821	0	181	1	821	0	181
Home Energy Squad		≤ 50 pints/day dehumidifier	ENERGY STAR Dehumidifier - low capacity	389	1,620	Standard efficiency dehumidifier (Current Federal Standard)	519	1,620	12	$0	$224	$25	$0.11	50%	2.2	1.1	211	$0.119	$0.010	0.1	0.1	$0.00	$0.00	100%	365	365	365	365	100%	100%	100%	52	83,897	0	18,237	52	83,897	0	18,237
Home Energy Squad		>50 pints/day dehumidifier	ENERGY STAR Dehumidifier - high capacity	647	1,620	Standard efficiency dehumidifier (Current Federal Standard)	757	1,620	12	$0	$220	$23	$0.11	52%	2.5	1.2	178	$0.140	$0.012	0.1	0.1	$0.00	$0.00	100%	306	306	306	306	100%	100%	100%	37	59,550	0	14,818	37	59,550	0	14,818
Home Lighting		***Home Lighting***																														**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Home Lighting		Average CFL	Average CFL	15	854	Average EISA Standard Halogen A-Style Bulb	48	854	7	$1	$1	$1	$0.11	119%	0.3	-0.1	29	$0.044	$0.006	0.0	0.0	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average CFL	Average CFL	15	5,649	Average EISA Standard Halogen A-Style Bulb	48	5,649	2	$1	$1	$1	$0.11	119%	0.0	0.0	206	$0.006	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average LED Bulb	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	7	$3	$2	$7	$0.11	38%	1.9	1.2	34	$0.080	$0.011	0.03777	0.00331	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average LED Bulb	Average LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	48	5,649	3	$3	$2	$7	$0.11	38%	0.3	0.2	232	$0.012	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	7	$2	$1	$2	$0.11	68%	0.7	0.2	30	$0.049	$0.007	0.0	0.0	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	43	5,649	2	$2	$1	$2	$0.11	68%	0.1	0.0	205	$0.007	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average CFL	Average CFL	15	854	Average EISA Standard Halogen A-Style Bulb	48	854	6	$1	$1	$1	$0.11	119%	0.3	-0.1	29	$0.044	$0.007	0.0	0.0	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average CFL	Average CFL	15	5,649	Average EISA Standard Halogen A-Style Bulb	48	5,649	2	$1	$1	$1	$0.11	119%	0.0	0.0	206	$0.006	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average LED Bulb	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	48	909	6	$3	$2	$6	$0.11	44%	1.7	0.9	34	$0.080	$0.013	0.0	0.0	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average LED Bulb	Average LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	48	5,649	3	$3	$2	$6	$0.11	44%	0.2	0.1	232	$0.012	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	6	$2	$1	$2	$0.11	80%	0.6	0.1	30	$0.049	$0.008	0.0	0.0	$0.00	$0.00	8.0%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	43	5,649	2	$2	$1	$2	$0.11	80%	0.1	0.0	205	$0.007	$0.004	0.0	0.0	$0.00	$0.00	82.1%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average CFL	Average CFL	15	854	Average EISA Standard Halogen A-Style Bulb	48	854	5	$1	$1	$1	$0.11	119%	0.3	-0.1	29	$0.044	$0.009	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average CFL	Average CFL	15	5,649	Average EISA Standard Halogen A-Style Bulb	48	5,649	2	$1	$1	$1	$0.11	119%	0.0	0.0	189	$0.006	$0.004	0.0	0.0	$0.00	$0.00	82%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Home Lighting		Average LED Bulb	Average LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	50	909	5	$3	$1	$6	$0.11	47%	1.5	0.8	36	$0.080	$0.016	0.0	0.0	$0.00	$0.00	8%	72,308	940,000	72,308	940,000	100%	100%	100%	3,272	37,012,431	2,566,200	5,505,050	3,272	37,012,431	2,566,200	5,505,050
Home Lighting		Average LED Bulb	Average LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	50	5,649	4	$3	$1	$6	$0.11	47%	0.2	0.1	224	$0.012	$0.004	0.0	0.0	$0.00	$0.00	82%	2,308	60,000	2,308	60,000	100%	100%	100%	2,143	14,681,779	163,800	351,386	2,143	14,681,779	163,800	351,386
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	5	$2	$1	$2	$0.11	96%	0.5	0.0	30	$0.049	$0.010	0.0	0.0	$0.00	$0.00	8%	69,242	900,144	69,242	900,144	100%	100%	100%	2,633	29,790,393	1,350,216	1,405,008	2,633	29,790,393	1,350,216	1,405,008
Home Lighting		Average Value LED Bulb	Average Value LED Bulb	10	5,649	Average EISA Standard Halogen A-Style Bulb	43	5,649	2	$2	$1	$2	$0.11	96%	0.1	0.0	188	$0.007	$0.004	0.0	0.0	$0.00	$0.00	82%	2,210	57,456	2,210	57,456	100%	100%	100%	1,725	11,817,002	86,184	89,681	1,725	11,817,002	86,184	89,681
Whole Home Efficiency		***Whole Home Efficiency***																																					
Whole Home Efficiency		EC Fan Motor on new Residential Furnace with AC	ECM Furnace Fan	390	3,556	Non-ECM Fan	579	3,556	18	$125	$236	$212	$0.11	59%	3.5	1.5	672	$0.186	$0.010	0.2	0.1	-$14.06	$0.00	71%	3	30	3	30	100%	100%	100%	4	22,009	3,750	6,360	4	22,009	3,750	6,360
Whole Home Efficiency		EC Fan Motor on new Residential Furnace no AC	ECM Furnace Fan	301	2,783	Non-ECM Fan	504	2,783	18	$125	$236	$212	$0.11	59%	4.4	1.8	565	$0.221	$0.012	0.2	0.1	-$14.06	$0.00	27%	1	10	1	10	100%	100%	100%	1	6,168	1,250	2,120	1	6,168	1,250	2,120
Whole Home Efficiency		EC Fan Motor on Retrofit Residential Furnace with AC	ECM Furnace Fan	357	2,542	Non-ECM Fan	569	2,542	7	$125	$236	$212	$0.11	59%	4.3	1.7	539	$0.232	$0.033	0.2	0.1	-$9.50	$0.00	63%	2	20	2	20	100%	100%	100%	3	11,769	2,500	4,240	3	11,769	2,500	4,240
Whole Home Efficiency		EC Fan Motor on Retrofit Residential Furnace no AC	ECM Furnace Fan	298	2,133	Non-ECM Fan	501	2,133	7	$125	$236	$212	$0.11	59%	5.6	2.3	433	$0.289	$0.041	0.2	0.1	-$9.50	$0.00	27%	0	5	0	5	100%	100%	100%	0	2,364	625	1,060	0	2,364	625	1,060

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Incremt'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Whole Home Efficiency		Installation of new AC 15 SEER 2.5 tons	Non - Quality Installation of 15 SEER 2.5 tons	2,479	435	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,732	456	15	$200	$1,057	$461	$0.11	43%	25.2	14.3	166	$1.205	$0.080	0.3	0.2	$0.00	$0.00	90%	0	2	0	2	100%	100%	100%	0	362	400	921	0	362	400	921
Whole Home Efficiency		Installation of new AC 16 SEER 2.5 tons	Non - Quality Installation of 16 SEER 2.5 tons	2,380	425	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,732	456	15	$300	$1,057	$691	$0.11	43%	26.9	15.2	233	$1.286	$0.086	0.4	0.3	$0.00	$0.00	90%	1	10	1	10	100%	100%	100%	3	2,547	3,000	6,910	3	2,547	3,000	6,910
Whole Home Efficiency		Provide Quality Installation of new AC 13 - 14.5 SEER 2.5 tons	Quality Installation of 13 - 14.5 SEER 2.5 tons	2,318	421	Non-Quality Installation of 2.5 Ton AC 13 - 14.5 SEER 2.5 tons	2,620	447	15	$175	$0	$152	$0.11	115%	7.1	-1.1	196	$0.894	$0.060	0.3	0.3	$0.00	$0.00	90%	0	5	0	5	100%	100%	100%	1	1,069	875	761	1	1,069	875	761
Whole Home Efficiency		Provide Quality Installation of new AC 15 SEER 2.5 tons	Quality Installation of 15 SEER 2.5 tons	2,195	409	Non-Quality Installation of 2.5 Ton AC 15 SEER 2.5 tons	2,479	435	15	$175	$0	$121	$0.11	144%	6.1	-2.7	180	$0.971	$0.065	0.3	0.3	$0.00	$0.00	90%	0	2	0	2	100%	100%	100%	1	394	350	243	1	394	350	243
Whole Home Efficiency		Provide Quality Installation of new AC 16 SEER 2.5 tons	Quality Installation of 16 SEER 2.5 tons	2,109	399	Non-Quality Installation of 2.5 Ton AC 16 SEER 2.5 tons	2,380	425	15	$175	$0	$98	$0.11	178%	5.3	-4.1	169	$1.036	$0.069	0.3	0.3	$0.00	$0.00	90%	1	10	1	10	100%	100%	100%	3	1,845	1,750	984	3	1,845	1,750	984
Whole Home Efficiency		Energy Star Clothes Washer - Combo Customers w/ Gas DHW	Energy Star Clothes Washer	111	295	Standard Clothes Washer	132	295	11	$2	$677	$7	$0.11	33%	2.3	1.5	6	$0.363	$0.033	0.0	0.0	$2.30	$0.00	3%	1	15	1	15	100%	100%	100%	0	104	34	103	0	104	34	103
Whole Home Efficiency		Refrigerator Replacement	Top Mounted Freeezer w/ Auto Defrost Energy Star refrigerator 22.0 Cf	66	5,592	Top Mounted Freeezer w/ Auto Defrost Standard refrigerator 22.0 Cf	74	5,592	18	$15	$663	$26	$0.11	58%	5.7	2.4	41	$0.364	$0.020	0.0	0.0	$0.00	$0.00	64%	2	20	2	20	100%	100%	100%	0	900	300	521	0	900	300	521
Whole Home Efficiency		Attic Insulation in Gas Heated Homes With Cooling - Combo Customer	Home with additional insulation	3,880	490	Home with R20 or less existing Insulation	4,000	490	20	$39	$0	$263	$0.11	15%	40.7	34.7	59	$0.664	$0.033	0.1	0.1	$0.00	$0.00	100%	9	100	9	100	100%	100%	100%	13	6,404	3,896	26,267	13	6,404	3,896	26,267
Whole Home Efficiency		Wall Insulation in Gas Heated Homes With Cooling - Combo Customer	R-11 insulation	3,682	490	Baseline assumes R-0 in wall cavities as existing level	4,000	490	20	$34	$0	$249	$0.11	14%	14.5	12.6	156	$0.217	$0.011	0.3	0.3	$0.00	$0.00	100%	11	120	11	120	100%	100%	100%	42	20,429	4,057	29,901	42	20,429	4,057	29,901
Whole Home Efficiency		Air Sealing T2 - 25% - Gas Heated Homes With Cooling - Combo Customer	Home with Tier 2 Air Sealing - Average 27% reduction	7,787	490	Existing Home Without Air Sealing	8,000	490	10	$28	$0	$163	$0.11	17%	14.2	11.8	104	$0.268	$0.027	0.2	0.2	$0.00	$0.00	100%	4	40	4	40	100%	100%	100%	9	4,562	1,120	6,524	9	4,562	1,120	6,524
Whole Home Efficiency		Air Sealing T3 - 30% - Gas Heated Homes With Cooling - Combo Customer	Home with Tier 3 Air Sealing - average 42% reduction	7,524	490	Existing Home Without Air Sealing	8,000	490	10	$19	$0	$131	$0.11	15%	5.1	4.4	233	$0.083	$0.008	0.5	0.5	$0.00	$0.00	100%	6	70	6	70	100%	100%	100%	37	17,819	1,350	9,194	37	17,819	1,350	9,194
Whole Home Efficiency		Programmable Thermostat (Install and Program)	New T-stat w/ Auto setup by 1.2 F for cooling assume 3 ton AC, 10 SEER	3,008	442	Base modeled home w/ 10 SEER AC and no setup temp	3,130	449	10	$2	$0	$8	$0.11	31%	0.9	0.6	75	$0.031	$0.003	0.1	0.1	$0.00	$0.00	76%	4	40	4	40	100%	100%	100%	4	3,285	94	302	4	3,285	94	302
Whole Home Efficiency		Energy Efficient Showerhead in home with electric DHW (Direct Install)	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$4	$0	$4	$0.11	100%	0.0	0.0	510	$0.007	$0.001	0.1	0.0	$33.37	$0.00	64%	1	12	1	12	100%	100%	100%	0	6,687	45	45	0	6,687	45	45
Whole Home Efficiency		Energy Efficient Bathroom Aerator in home with electric DHW (Direct Install	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$1	$0	$1	$0.11	100%	0.1	0.0	74	$0.014	$0.001	0.0	0.0	$4.17	$0.00	124%	2	18	2	18	100%	100%	100%	0	1,450	18	18	0	1,450	18	18
Whole Home Efficiency		Energy Efficient Kitchen Aerator in home with electric DHW (Direct Install)	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$2	$0	$2	$0.11	100%	0.2	0.0	64	$0.031	$0.003	0.0	0.0	$4.19	$0.00	124%	1	8	1	8	100%	100%	100%	0	559	16	16	0	559	16	16
Whole Home Efficiency		Energy Efficient Bathroom Aerator in home with electric DHW (Direct Install)	0.5 GPM Bathroom Faucet Aerator	3	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$1	$0	$1	$0.11	0%	0.1	0.1	91	$0.000	$0.000	0.0	0.0	$5.93	$0.00	124%	1	4	1	4	100%	100%	100%	0	396	0	4	0	396	4	4
Whole Home Efficiency		Water heater blankets (direct install)	Add commercial Insulation wrap R8 around Water Heater Tank	40	8,760	No External Insulation on water heater	69	8,760	7	$23	$0	$23	$0.11	100%	0.8	0.0	254	$0.092	$0.014	0.0	0.0	$0.00	$0.00	100%	2	25	2	25	100%	100%	100%	1	6,936	587	587	1	6,936	587	587
Whole Home Efficiency		Average Value LED Bulb - 2017 (Direct Install)	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	7	$3	$0	$3	$0.11	100%	0.8	0.0	30	$0.091	$0.013	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency		Average Value LED Bulb - 2018 (Direct Install)	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	6	$3	$0	$3	$0.11	100%	0.8	0.0	30	$0.091	$0.015	0.0	0.0	$0.00	$0.00	8%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency		Average Value LED Bulb - 2019 (Direct Install)	Average Value LED Bulb	10	909	Average EISA Standard Halogen A-Style Bulb	43	909	5	$3	$0	$3	$0.11	100%	0.8	0.0	30	$0.091	$0.018	0.0	0.0	$0.00	$0.00	8%	147	1,600	147	1,600	100%	100%	100%	5	52,952	4,400	4,400	5	52,952	4,400	4,400
Whole Home Efficiency		Mini-Split Heat Pump	MSHP size 1.2 tons, 21.27 SEER, 10.50 HSPF	1,088	1,216	MSHP size 1.2 tons, 14 SEER, 8.2 HSPF	1,647	1,216	18	$200	$3,440	$512	$0.11	39%	6.9	4.2	680	$0.294	$0.016	0.6	0.3	$0.00	$0.00	55%	0	5	0	5	100%	100%	100%	2	3,709	1,000	2,562	2	3,709	1,000	2,562
Whole Home Efficiency		≤ 50 pints/day dehumidifier	ENERGY STAR Dehumidifier - low capacity	389	1,620	Standard efficiency dehumidifier (Current Federal Standard)	519	1,620	12	$25	$224	$50	$0.11	50%	2.2	1.1	211	$0.119	$0.010	0.1	0.1	$0.00	$0.00	100%	16	16	16	16	100%	100%	100%	2	3,570	388	776	2	3,570	388	776
Whole Home Efficiency		>50 pints/day dehumidifier	ENERGY STAR Dehumidifier - high capacity	647	1,620	Standard efficiency dehumidifier (Current Federal Standard)	757	1,620	12	$25	$220	$48	$0.11	52%	2.5	1.2	178	$0.140	$0.012	0.1	0.1	$0.00	$0.00	100%	13	13	13	13	100%	100%	100%	2	2,534	326	631	2	2,534	326	631
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,021	385	Minimum Efficiency Electric Water Heater	4,593	909	10	$450	$959	$611	$0.11	74%	2.1	0.6	2,627	$0.171	$0.017	0.6	0.6	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,107	10	$450	$959	$611	$0.11	74%	1.6	0.4	3,463	$0.130	$0.013	0.6	0.6	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,265	10	$450	$959	$611	$0.11	74%	1.5	0.4	4,187	$0.107	$0.011	0.6	0.6	-$65.17	$0.00	100%	0	0	0.5	5	100%	100%	100%	0	0	0	0	3	22,855	2,250	3,057
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,018	379	Minimum Efficiency Electric Water Heater	4,500	914	10	$450	$959	$611	$0.11	74%	2.1	0.6	2,588	$0.174	$0.017	0.5	0.5	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,021	386	Minimum Efficiency Electric Water Heater	4,500	1,116	10	$450	$959	$611	$0.11	74%	1.6	0.4	3,471	$0.130	$0.013	0.5	0.5	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)	High Efficiency Heat Pump Water Heater	4,018	380	Minimum Efficiency Electric Water Heater	4,500	1,277	10	$450	$959	$611	$0.11	74%	1.5	0.4	4,221	$0.107	$0.011	0.5	0.5	-$65.17	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,021	385	Minimum Efficiency Electric Water Heater	4,593	909	10	$550	$959	$611	$0.11	90%	2.1	0.2	2,627	$0.209	$0.021	0.6	0.6	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & ASHP Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,107	10	$550	$959	$611	$0.11	90%	1.6	0.2	3,463	$0.159	$0.016	0.6	0.6	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,265	10	$550	$959	$611	$0.11	90%	1.5	0.2	4,187	$0.131	$0.013	0.6	0.6	-$65.17	$0.00	100%	0	0	0.5	5	100%	100%	100%	0	0	0	0	3	22,855	2,750	3,057
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,018	379	Minimum Efficiency Electric Water Heater	4,500	914	10	$550	$959	$611	$0.11	90%	2.1	0.2	2,588	$0.213	$0.021	0.5	0.5	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & ASHP Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,021	386	Minimum Efficiency Electric Water Heater	4,500	1,116	10	$550	$959	$611	$0.11	90%	1.6	0.2	3,471	$0.158	$0.016	0.5	0.5	$0.00	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Whole Home Efficiency	Heat Pump Water Heater	Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon) + CEA/ANSI Communications Port	High Efficiency Heat Pump Water Heater	4,018	380	Minimum Efficiency Electric Water Heater	4,500	1,277	10	$550	$959	$611	$0.11	90%	1.5	0.2	4,221	$0.130	$0.013	0.5	0.5	-$65.17	$0.00	100%	0	0	0.0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Insulation Rebate		***Insulation Rebate***																																					
Insulation Rebate		Electric Heat Homes Without Cooling	Home with additional insulation	5,936	1,261	Home with R20 or less existing Insulation	8,000	1,261	20	$297	$0	$2,077	$0.11	14%	7.3	6.2	2,602	$0.114	$0.006	2.1	0.0	$0.00	$0.00	0%	17	23	17	23	100%	100%	100%	0	65,338	6,824	47,770	0	65,338	6,824	47,770
Insulation Rebate		Electric Heat Homes With Cooling	Home with additional insulation	6,687	1,751	Home with R20 or less existing Insulation	8,000	1,751	20	$288	$0	$1,682	$0.11	17%	6.7	5.5	2,299	$0.125	$0.006	1.3	0.1	$0.00	$0.00	10%	25	35	25	35	100%	100%	100%	5	87,851	10,070	58,857	5	87,851	10,070	58,857
Insulation Rebate		Gas Heat Homes With Cooling, Combo Customer	Home with additional insulation	3,880	490	Home with R20 or less existing Insulation	4,000	490	20	$292	$0	$1,966	$0.11	15%	22.5	19.1	59	$4.971	$0.249	0.1	0.1	$0.00	$81.07	100%	254	350	254	350	100%	100%	100%	46	22,415	102,055	688,132	46	22,415	102,055	688,132
Insulation Rebate		Electric Heat Homes Without Cooling	R-11 insulation	392	1,261	Baseline assumes R-0 in wall cavities as existing level	8,000	1,261	20	$276	$0	$3,935	$0.11	7%	3.7	3.5	9,594	$0.029	$0.001	7.6	0.0	$0.00	$0.00	0%	62	85	62	85	100%	100%	100%	0	890,261	23,428	334,477	0	890,261	23,428	334,477
Insulation Rebate		Electric Heat Homes With Cooling	R-11 insulation	-665	1,751	Baseline assumes R-0 in wall cavities as existing level	8,000	1,751	20	$300	$0	$1,751	$0.11	17%	1.0	0.9	15,173	$0.020	$0.001	8.7	1.0	$0.00	$0.00	10%	21	29	21	29	100%	100%	100%	28	480,356	8,700	50,777	28	480,356	8,700	50,777
Insulation Rebate		Gas Heat Homes With Cooling, Combo Customer	R-11 insulation	3,682	490	Baseline assumes R-0 in wall cavities as existing level	4,000	490	20	$253	$0	$1,865	$0.11	14%	8.0	6.9	156	$1.623	$0.081	0.3	0.3	$0.00	$215.52	100%	87	120	87	120	100%	100%	100%	42	20,429	30,364	223,810	42	20,429	30,364	223,810
Insulation Rebate		Electric Heat Homes Without Cooling	Home with Tier 2 Air Sealing	3,481	1,261	Existing Home Without Air Sealing	8,000	1,261	10	$131	$0	$2,338	$0.11	6%	3.7	3.5	5,699	$0.023	$0.002	4.5	0.0	$0.00	$0.00	0%	11	15	11	15	100%	100%	100%	0	93,316	1,969	35,074	0	93,316	1,969	35,074
Insulation Rebate		Electric Heat Homes With Cooling	Home with Tier 2 Air Sealing	4,980	1,751	Existing Home Without Air Sealing	8,000	1,751	10	$135	$0	$635	$0.11	21%	1.1	0.9	5,289	$0.026	$0.003	3.0	0.2	$0.00	$0.00	7%	8	11	8	11	100%	100%	100%	3	63,509	1,485	6,983	3	63,509	1,485	6,983
Insulation Rebate		Gas Heat Homes With Cooling, Combo Customer	Home with Tier 2 Air Sealing	3,781	490	Existing Home Without Air Sealing	4,000	490	10	$143	$0	$874	$0.11	16%	4.0	3.3	107	$1.330	$0.133	0.2	0.2	$0.00	$208.54	100%	108	149	108	149	100%	100%	100%	36	17,438	21,247	130,173	36	17,438	21,247	130,173
Insulation Rebate		Gas Heat Homes with Cooling, Electric-Only Customer	Home with additional insulation	3,880	490	Home with R20 or less existing Insulation	4,000	490	20	$40	$0	$1,966	$0.11	2%	#DIV/0!	#DIV/0!	59	#DIV/0!	#DIV/0!	0.1	0.1	$0.00	$81.07	100%	10	10	10	10	100%	100%	100%	1	640	400	19,661	1	640	400	19,661
Insulation Rebate		Gas Heat Homes with Cooling, Electric-Only Customer	R-11 insulation	3,682	490	Baseline assumes R-0 in wall cavities as existing level	4,000	490	20	$35	$0	$1,865	$0.11	2%	#DIV/0!	#DIV/0!	156	#DIV/0!	#DIV/0!	0.3	0.3	$0.00	$215.52	100%	3	3	3	3	100%	100%	100%	1	511	105	5,595	1	511	105	5,595
Insulation Rebate		Gas Heat Homes with Cooling, Electric-Only Customer	Home with Tier 2 Air Sealing	3,781	490	Existing Home Without Air Sealing	4,000	490	10	$25	$0	$874	$0.11	3%	#DIV/0!	#DIV/0!	107	#DIV/0!	#DIV/0!	0.2	0.2	$0.00	$208.54	100%	13	13	13	13	100%	100%	100%	3	1,521	325	11,357	3	1,521	325	11,357
Refrigerator Recycling		***Refrigerator Recycling***																																					
Refrigerator Recycling		Remove refrigerator from service and recycle	removal of refrigerator	0	0	existing secondary unit - age mostly >10 years	170	5,592	9	$35	$0	$0	$0.12	#DIV/0!	0.0	-0.3	953	$0.037	$0.004	0.2	0.1	$0.00	$0.00	64%	6,000	6,000	6,000	6,000	100%	100%	100%	715	6,239,680	210,000	0	715	6,239,680	210,000	0
Refrigerator Recycling		Remove freezer from service and recycle	removal of freezer	0	0	existing freezer unit - age mostly >10 years	206	5,592	6	$35	$0	$0	$0.12	#DIV/0!	0.0	-0.3	1,155	$0.030	$0.005	0.2	0.1	$0.00	$0.00	64%	900	900	900	900	100%	100%	100%	130	1,134,437	31,500	0	130	1,134,437	31,500	0
Refrigerator Recycling		Room AC Recycling	removal of room ac	0	0	Existing 10,000 BTU/h Room Air Conditioner	582	536	3	$0	$0	$0	$0.12	#DIV/0!	0.0	0.0	312	$0.000	$0.000	0.6	0.6	$0.00	$0.00	90%	90	90	90	90	100%	100%	100%	52	30,631	0	0	52	30,631	0	0
Refrigerator Recycling		Dehumidifier Recycling	removal of dehumidifier	0	0	Existing dehumidifier	355	2,160	5	$0	$0	$0	$0.12	#DIV/0!	0.0	0.0	766	$0.000	$0.000	0.4	0.4	$0.00	$0.00	100%	110	110	110	110	100%	100%	100%	43	92,034	0	0	43	92,034	0	0
Residential Cooling		***Residential Cooling***																																					
Residential Cooling		Installation of new AC 15 SEER 2.5 tons	Non - Quality Installation of 15 SEER 2.5 tons	2,439	412	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,683	432	15	$200	$1,057	$461	$0.11	43%	27.1	15.3	155	$1.294	$0.086	0.2	0.24112	$0.00	$0.00	90%	5	10	5	10	100%	100%	100%	2	1,688	2,000	4,606	2	1,688	2,000	4,606
Residential Cooling		Installation of new AC 16 SEER 2.5 tons	Non - Quality Installation of 16 SEER 2.5 tons	2,344	402	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,683	432	15	$300	$1,057	$691	$0.11	43%	28.9	16.4	217	$1.380	$0.092	0.3	0.33514	$0.00	$0.00	90%	12	24	12	24	100%	100%	100%	8	5,695	7,200	16,583	8	5,695	7,200	16,583
Residential Cooling		Provide Quality Installation of new AC 13 - 14.5 SEER 2.5 tons	Quality Installation of 13 - 14.5 SEER 2.5 tons	2,576	386	Non-Quality Installation of 13 - 14.5 SEER 2.5 tons	2,576	424	15	$150	$0	$117	$0.11	128%	10.8	-3.1	98	$1.527	$0.102	0.0	0.00000	$0.00	$0.00	90%	37	37	37	37	100%	100%	100%	0	3,967	5,550	4,327	0	3,967	5,550	4,327
Residential Cooling		Provide Quality Installation of new AC 15 SEER 2.5 tons	Quality Installation of 15 SEER 2.5 tons	2,439	375	Non-Quality Installation of 15 SEER 2.5 tons	2,439	412	15	$150	$0	$117	$0.11	128%	11.8	-3.3	90	$1.659	$0.111	0.0	0.00000	$0.00	$0.00	90%	5	10	5	10	100%	100%	100%	0	987	1,500	1,170	0	987	1,500	1,170
Residential Cooling		Provide Quality Installation of new AC 16 SEER 2.5 tons	Quality Installation of 16 SEER 2.5 tons	2,344	366	Non-Quality Installation of 16 SEER 2.5 tons	2,344	402	15	$150	$0	$117	$0.11	128%	12.5	-3.5	85	$1.769	$0.118	0.0	0.00000	$0.00	$0.00	90%	12	24	12	24	100%	100%	100%	0	2,221	3,600	2,807	0	2,221	3,600	2,807
Residential Cooling		Installation of new AC 15 SEER 2.5 tons	Non - Quality Installation of 15 SEER 2.5 tons	2,479	435	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,732	456	15	$200	$1,057	$461	$0.11	43%	25.2	14.3	166	$1.205	$0.080	0.3	0.24931	$0.00	$0.00	90%	868	1,736	868	1,736	100%	100%	100%	433	314,460	347,200	799,645	433	314,460	347,200	799,645
Residential Cooling		Installation of new AC 16 SEER 2.5 tons	Non - Quality Installation of 16 SEER 2.5 tons	2,380	425	Non-Quality Installation of 13 SEER (Baseline and Model) 2.5 tons	2,732	456	15	$300	$1,057	$691	$0.11	43%	26.9	15.2	233	$1.286	$0.086	0.4	0.34685	$0.00	$0.00	90%	2,389	4,778	2,389	4,778	100%	100%	100%	1,657	1,217,096	1,433,400	3,301,359	1,657	1,217,096	1,433,400	3,301,359
Residential Cooling		Provide Quality Installation of new AC 13 - 14.5 SEER 2.5 tons	Quality Installation of 13 - 14.5 SEER 2.5 tons	2,318	421	Non-Quality Installation of 2.5 Ton AC 13 - 14.5 SEER 2.5 tons	2,620	447	15	$150	$0	$152	$0.11	99%	7.1	0.1	196	$0.766	$0.051	0.3021	0.29817	$0.00	$0.00	90%	4,727	4,727	4,727	4,727	100%	100%	100%	1,409	1,010,310	709,050	719,083	1,409	1,010,310	709,050	719,083
Residential Cooling		Provide Quality Installation of new AC 15 SEER 2.5 tons	Quality Installation of 15 SEER 2.5 tons	2,195	409	Non-Quality Installation of 2.5 Ton AC 15 SEER 2.5 tons	2,479	435	15	$150	$0	$121	$0.11	124%	6.1	-1.4	180	$0.832	$0.055	0.2838	0.28003	$0.00	$0.00	90%	868	1,736	868	1,736	100%	100%	100%	486	341,612	260,400	210,776	486	341,612	260,400	210,776
Residential Cooling		Provide Quality Installation of new AC 16 SEER 2.5 tons	Quality Installation of 16 SEER 2.5 tons	2,109	399	Non-Quality Installation of 2.5 Ton AC 16 SEER 2.5 tons	2,380	425	15	$150	$0	$98	$0.11	152%	5.3	-2.8	169	$0.888	$0.059	0.2707	0.26711	$0.00	$0.00	90%	2,389	4,778	2,389	4,778	100%	100%	100%	1,276	881,456	716,700	470,072	1,276	881,456	716,700	470,072
Residential Cooling		Installation of new ASHP 15 SEER ASHP 2.5 Tons	Non - Quality Installation of 15 SEER ASHP 2.5 Tons	2,439	412	Non-Quality Installation of 14 SEER (Baseline) ASHP 2.5 Tons	2,551	422	15	$200	$1,944	$457	$0.11	44%	57.9	32.6	72	$2.787	$0.186	0.1120	0.11052	$0.00	$0.00	90%	1	1	1	1	100%	100%	100%	0	78	200	457	0	78	200	457
Residential Cooling		Installation of new ASHP 16 SEER ASHP 2.5 Tons	Non - Quality Installation of 16 SEER ASHP 2.5 Tons	2,344	402	Non-Quality Installation of 14 SEER (Baseline) ASHP 2.5 Tons	2,551	422	15	$300	$1,944	$914	$0.11	33%	61.8	41.5	135	$2.229	$0.149	0.2073	0.20454	$0.00	$0.00	90%	1	1	1	1	100%	100%	100%	0	147	300	914	0	147	300	914
Residential Cooling		Provide Quality Installation of new ASHP 14 SEER (Baseline) ASHP 2.5 Tons	Quality Installation of 14 SEER (Baseline) ASHP 2.5 Tons	2,551	384	Non-Quality Installation of 14 SEER (Baseline) ASHP 2.5 Tons	2,551	422	15	$150	$0	$117	$0.11	128%	11.0	-3.1	97	$1.548	$0.103	0.0000	0.00000	$0.00	$0.00	90%	1	1	1	1	100%	100%	100%	0	106	150	117	0	106	150	117
Residential Cooling		Provide Quality Installation of new ASHP 15 SEER ASHP 2.5 Tons	Quality Installation of 15 SEER ASHP 2.5 Tons	2,439	375	Non-Quality Installation of 15 SEER ASHP 2.5 Tons	2,439	412	15	$150	$0	$117	$0.11	128%	11.8	-3.3	90	$1.659	$0.111	0.0000	0.00000	$0.00	$0.00	90%	1	1	1	1	100%	100%	100%	0	99	150	117	0	99	150	117
Residential Cooling		Provide Quality Installation of new ASHP 16 SEER ASHP 2.5 Tons	Quality Installation of 16 SEER ASHP 2.5 Tons	2,344	366	Non-Quality Installation of 16 SEER ASHP 2.5 Tons	2,344	402	15	$150	$0	$117	$0.11	128%	12.5	-3.5	85	$1.769	$0.118	0.0	0.00000	$0.00	$0.00	90%	1	1	1	1	100%	100%	100%	0	93	150	117	0	93	150	117
Residential Cooling		Installation of new ASHP 15 SEER ASHP 2.5 Tons	Non - Quality Installation of ASHP 15 SEER ASHP 2.5 Tons	2,479	435	Non-Quality Installation of ASHP 14 SEER (Baseline) ASHP 2.5 Tons	2,595	445	15	$200	$1,944	$457	$0.11	44%	53.9	30.3	77	$2.596	$0.173	0.1	0.11439	$0.00	$0.00	90%	7	14	7	14	100%	100%	100%	2	1,177	2,800	6,397	2	1,177	2,800	6,397
Residential Cooling		Installation of new ASHP 16 SEER ASHP 2.5 Tons	Non - Quality Installation of ASHP 16 SEER ASHP 2.5 Tons	2,380	425	Non-Quality Installation of ASHP 14 SEER (Baseline) ASHP 2.5 Tons	2,595	445	15	$300	$1,944	$914	$0.11	33%	57.5	38.6	144	$2.077	$0.138	0.2	0.21194	$0.00	$0.00	90%	25	25	25	25	100%	100%	100%	5	3,942	7,500	22,845	5	3,942	7,500	22,845
Residential Cooling		Provide Quality Installation of new ASHP 14 SEER (Baseline) ASHP 2.5 Tons	Quality Installation of 2.5 Ton ASHP 14 SEER (Baseline) ASHP 2.5 Tons	2,296	419	Non-Quality Installation of 2.5 Ton ASHP 14 SEER (Baseline) ASHP 2.5 Tons	2,595	445	15	$150	$0	$79	$0.11	190%	3.7	-3.4	193	$0.777	$0.052	0.3	0.29496	$0.00	$0.00	90%	4	4	4	4	100%	100%	100%	1	843	600	315	1	843	600	315
Residential Cooling		Provide Quality Installation of new ASHP 15 SEER ASHP 2.5 Tons	Quality Installation of 2.5 Ton ASHP 15 SEER ASHP 2.5 Tons	2,195	409	Non-Quality Installation of 2.5 Ton ASHP 15 SEER ASHP 2.5 Tons	2,479	435	15	$150	$0	$75	$0.11	200%	3.8	-3.8	180	$0.832	$0.055	0.3	0.28003	$0.00	$0.00	90%	1	3	1	3	100%	100%	100%	1	590	450	225	1	590	450	225
Residential Cooling		Provide Quality Installation of new ASHP 16 SEER ASHP 2.5 Tons	Quality Installation of 2.5 Ton ASHP 16 SEER ASHP 2.5 Tons	2,109	399	Non-Quality Installation of 2.5 Ton ASHP 16 SEER ASHP 2.5 Tons	2,380	425	15	$150	$0	$75	$0.11	200%	4.0	-4.0	169	$0.888	$0.059	0.3	0.26711	$0.00	$0.00	90%	12	25	12	25	100%	100%	100%	7	4,612	3,750	1,875	7	4,612	3,750	1,875
Residential Cooling		Installation of High Efficiency GSHP equipment New/Existing Home	Quality Installation of 2 Ton, closed loop, 14.1 EER GSHP	1,702	414	Non-Quality Installation of 2 Ton 13 SEER AC	2,185	524	20	$300	$846	$1,168	$0.11	26%	24.2	18.0	440	$0.682	$0.034	0.5	0.47673	$0.00	$0.00	90%	66	66	66	66	100%	100%	100%	31	31,673	19,800	77,088	31	31,673	19,800	77,088
Residential Cooling		Mini-Split Heat Pump	MSHP size 1.1 tons, 21.87 SEER, 13.47 EER, 10.50 HSPF	1,025	1,121	MSHP size 1.1 tons, 14 SEER, 8.57 EER, 8.2 HSPF	1,611	1,121	18	$200	$3,465	$549	$0.11	36%	7.6	4.8	657	$0.304	$0.017	0.6	0.57830	$0.00	$0.00	90%	150	150	150	150	100%	100%	100%	87	107,614	30,000	82,293	87	107,614	30,000	82,293
School Education Kits		***School Education Kits***																																					
School Education Kits		9 Watt LED Bulbs - 2017	High efficiency LED lighting (2 at 9W)	18	909	Incandescent light bulb	86	909	7	$6	$0	$6	$0.11	100%	0.9	0.0	62	$0.103	$0.015	0.1	0.0	$0.00	$0.00	8%	0	0	0	0	100%	55%	100%	0	0	0	0	0	0	0	0
School Education Kits		11 Watt LED Bulbs - 2017	High efficiency LED lighting (2 at 11W)	22	909	Incandescent light bulb	106	909	7	$10	$0	$10	$0.11	100%	1.1	0.0	76	$0.126	$0.018	0.1	0.0	$0.00	$0.00	8%	0	0	0	0	100%	55%	100%	0	0	0	0	0	0	0	0
School Education Kits		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2017	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510	$0.006	$0.001	0.1	0.0	$33.37	$0.00	64%	0	0	0	0	100%	35%	100%	0	0	0	0	0	0	0	0
School Education Kits		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2017	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$1	$0	$1	$0.11	100%	0.1	0.0	74	$0.016	$0.002	0.0	0.0	$4.17	$0.00	124%	0	0	0	0	100%	30%	100%	0	0	0	0	0	0	0	0
School Education Kits		Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2017	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$0	$0	$0	$0.11	100%	0.0	0.0	64	$0.008	$0.001	0.0	0.0	$4.19	$0.00	124%	0	0	0	0	100%	25%	100%	0	0	0	0	0	0	0	0
School Education Kits		9 Watt LED Bulbs - 2018	High efficiency LED lighting (2 at 9W)	18	909	Incandescent light bulb	86	909	6	$6	$0	$6	$0.11	100%	0.9	0.0	62	$0.103	$0.017	0.1	0.0	$0.00	$0.00	8%	0	0	0	0	100%	55%	100%	0	0	0	0	0	0	0	0
School Education Kits		11 Watt LED Bulbs - 2018	High efficiency LED lighting (2 at 11W)	22	909	Incandescent light bulb	106	909	6	$10	$0	$10	$0.11	100%	1.1	0.0	76	$0.126	$0.021	0.1	0.0	$0.00	$0.00	8%	0	0	0	0	100%	55%	100%	0	0	0	0	0	0	0	0

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Increm't'l Cost Payback Period w/o Rebate (yrs)	Increm't'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)
School Education Kits		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2018	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510
School Education Kits		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2018	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$1	$0	$1	$0.11	100%	0.1	0.0	74
School Education Kits		Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2018	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$0	$0	$0	$0.11	100%	0.0	0.0	64
School Education Kits		9 Watt LED Bulbs - 2019	High efficiency LED lighting (2 at 9W)	18	909	Incandescent light bulb	86	909	5	$6	$0	$6	$0.11	100%	0.9	0.0	62
School Education Kits		11 Watt LED Bulbs - 2019	High efficiency LED lighting (2 at 11W)	22	909	Incandescent light bulb	106	909	5	$10	$0	$10	$0.11	100%	1.1	0.0	76
School Education Kits		Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2019	1.5 GPM Showerhead	87	8,760	2.5 GPM Showerhead	146	8,760	10	$3	$0	$3	$0.11	100%	0.0	0.0	510
School Education Kits		Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2019	1.5 GPM Kitchen Faucet Aerator	18	8,760	2.2 GPM Kitchen Faucet Aerator	26	8,760	10	$1	$0	$1	$0.11	100%	0.1	0.0	74
School Education Kits		Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2019	1.0 GPM Bathroom Faucet Aerator	6	8,760	2.2 GPM Bathroom Faucet Aerator	13	8,760	10	$1	$0	$1	$0.11	100%	0.0	0.0	64
School Education Kits	9 Watt LEDs	9 Watt LED Bulbs - 2020 Electric Only kit	High efficiency LED lighting (2 at 9W)	18	909	Incandescent light bulb	86	909	5	$6	$0	$6	$0.12	100%	0.9	0.0	62
School Education Kits	11 Watt LEDs	11 Watt LED Bulbs - 2020 Electric Only kit	High efficiency LED lighting (2 at 11W)	22	909	Incandescent light bulb	106	909	5	$10	$0	$10	$0.12	100%	1.1	0.0	76
Self Direct		***Self Direct***															
Self Direct		Average Project	New Equipment	828,135	2,876	Old or less efficient systems or equipment	1,150,184	2,876	17	$173,612	$0	$503,145	$0.08	35%	6.9	4.5	926,303
LI Home Energy Squad		***LI Home Energy Squad***															
LI Home Energy Squad		Total Energy Squad Service 2017	Weighted Average of 2017 LI Squad Services	63	965	Existing Home	104	965	7	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	39
LI Home Energy Squad		Total Energy Squad Service 2018	Weighted Average of 2018 LI Squad Services	63	965	Existing Home	104	965	6	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	39
LI Home Energy Squad		Total Energy Squad Service 2019	Weighted Average of 2019 LI Squad Services	63	965	Existing Home	104	965	5	$0	$0	$0	$0.11	#DIV/0!	0.0	0.0	39
Energy Star Retail Products Platform Pilot		***Energy Star Retail Products Platform Pilot***															
Energy Star Retail Products Platform Pilot		Freezers B	ENERGY STAR ®	50	5,592	Industry Standard	56	5,592	11	$15	$0	$0	$0.11	#DIV/0!	0.0	-4.4	31
Energy Star Retail Products Platform Pilot		Freezers A	ENERGY STAR v5 +5%	48	5,592	Industry Standard	56	5,592	11	$20	$0	$0	$0.11	#DIV/0!	0.0	-4.0	45
Energy Star Retail Products Platform Pilot		Room Air Conditioners	ENERGY STAR ®	848	662	Industry Standard	922	662	9	$10	$0	$50	$0.10	20%	10.0	8.0	49
Energy Star Retail Products Platform Pilot		Refrigerators A	ENERGY STAR Most Efficient 2019	83	5,592	Industry Standard	96	5,592	14	$15	$0	$20	$0.11	75%	2.4	0.6	75
Energy Star Retail Products Platform Pilot		Clothes Washer A	ENERGY STAR Most Efficient 2019	1,199	295	Industry Standard	2,098	295	11	$20	$0	$120	$0.11	17%	4.1	3.4	265
Energy Star Retail Products Platform Pilot		Electric Clothes Dryers A	ENERGY STAR Most Efficient 2019	1,965	283	Industry Standard	2,717	283	12	$40	$0	$75	$0.11	53%	3.2	1.5	213
Energy Star Retail Products Platform Pilot		Gas Clothes Dryers A	ENERGY STAR ®	121	283	Industry Standard	149	283	12	$5	$0	$26	$0.11	19%	30.2	24.6	8
Energy Star Retail Products Platform Pilot		Sound Bars A	ENERGY STAR ® + 50%	3	8,760	Industry Standard	10	8,760	7	$15	$0	$0	$0.11	#DIV/0!	0.0	-2.1	66
Energy Star Retail Products Platform Pilot		Air Cleaners A	ENERGY STAR ®	54	5,840	Industry Standard	91	5,840	9	$20	$0	$56	$0.11	36%	2.4	1.5	214
Energy Information Systems		***Energy Information Systems***															
Energy Information Systems		Energy Information System	New Energy Information System	0	0	No EIS	0	0	5	$9,720	$0	$32,400	$0.08	30%	#DIV/0!	#DIV/0!	0
Energy Information Systems		Behavioral and Operational Measures	Efficient behavior/operations	853,920	8,760	Less efficient behavior/operations	875,815	8,760	1	$1,752	$0	$0	$0.06	#DIV/0!	0.0	0.3	191,804
Energy Information Systems		Behavioral and Operational Measures Adjustment	Efficient behavior/operations	-683,136	8,760	Less efficient behavior/operations	-700,652	8,760	1	$0	$0	$0	$0.06	#DIV/0!	0.0	0.0	-153,443
Energy Information Systems		Retrocommissioning Measures	Optimized Building Systems	1,293,826	5,900	Non-optimized Building Systems	1,300,271	5,900	7	$656	$0	$821	$0.06	80%	0.1	0.0	38,029
Heating Efficiency		***Heating Efficiency***															
Heating Efficiency		EC Fan Motor on New Commercial Furnace	ECM Furnace Fan	405	4,321	Non-ECM Fan	813	4,321	18	$100	$236	$212	$0.11	47%	1.2	0.6	1,763
Heating Efficiency		EC Fan Motor on Existing Commercial Furnace	ECM Furnace Fan	541	4,519	Non-ECM Fan	857	4,519	7	$100	$0	$212	$0.11	47%	1.4	0.7	1,426
Heating Efficiency		Infrared	Infrared heater	0	1,848	Non-condensing standard forced-air unit heater	1,140	1,848	15	$71	$1,179	$167	$0.11	43%	0.7	0.4	2,108
Thermostat Optimization Program		***Thermostat Optimization Program***															
Thermostat Optimization Program		~~Install Energy Star certified smart thermostat - AC ONLY~~	~~Average Single Family House with EnergyStar Smart Thermostat~~	~~2,707~~	~~442~~	~~Average Single Family House with Standard Thermostat~~	~~3,008~~	~~442~~	~~10~~	~~$50~~	~~$50~~	~~$200~~	~~$0.10~~	~~25%~~	~~14.6~~	~~11.0~~	~~132,954~~
Thermostat Optimization Program		~~Install Energy Star certified smart thermostat - AC & GAS~~	~~Average Single Family House with EnergyStar Smart Thermostat~~	~~2,707~~	~~442~~	~~Average Single Family House with Standard Thermostat~~	~~3,008~~	~~442~~	~~10~~	~~$19~~	~~$19~~	~~$200~~	~~$0.10~~	~~9%~~	~~14.6~~	~~11.0~~	~~132.9536~~
Thermostat Optimization Program		~~Install Energy Star certified smart thermostat - AC & ELEC HEAT~~	~~Average Single Family House with EnergyStar Smart Thermostat~~	~~2,707~~	~~4,068~~	~~Average Single Family House with Standard Thermostat~~	~~3,008~~	~~4,250~~	~~10~~	~~$50~~	~~$50~~	~~$200~~	~~$0.11~~	~~25%~~	~~1.0~~	~~0.8~~	~~1,770.089~~
Commercial Refrigeration Efficiency		***Commercial Refrigeration Efficiency***															
Commercial Refrigeration Efficiency		*Condenser or Evaporator Coil Cleaning*	After Tune-Up	597	8,760	Before Tune-Up	642	8,760	1	$25	$0	$25	$0.08	100%	0.8	0.0	393
Commercial Refrigeration Efficiency		*Sink Aerator -restroom, elec water heating (per aerator)*	.6 gallons per minute restroom faucet aerator	83	8,760	2.2 gallons per minute faucet	303	8,760	10	$7	$0	$7	$0.11	100%	0.0	0.0	1,933
Commercial Refrigeration Efficiency		*Sink Aerator -kitchen, elec water heating (per aerator)*	1.5 gallons per minute kitchen faucet aerator	95	8,760	2.2 gallons per minute faucet	139	8,760	10	$7	$0	$7	$0.11	100%	0.1	0.0	389
Commercial Refrigeration Efficiency		*CHW Pre-Rinse Sprayer - electric water heating*	1.28 gallons per minute sprayer	208	8,760	1.60 gallons per minute sprayer	259	8,760	5	$45	$0	$45	$0.11	100%	0.7	0.0	455
Commercial Refrigeration Efficiency		*LED Refrigerated Case Lighting - Retrofit Screw Base*	LED Screw Base	20	5,124	Incandescent screw base	115	5,124	5	$24	$0	$24	$0.08	100%	0.6	0.0	486
Commercial Refrigeration Efficiency		*ECM Motors - Medium Temp Display Case*	ECM Motor	24	8,672	Shaded Pole Motor	72	8,672	15	$40	$0	$141	$0.07	28%	5.1	3.6	414
Commercial Refrigeration Efficiency		*ECM Motors - Low Temp Display Case*	ECM Motor	28	8,672	Shaded Pole Motor	84	8,672	15	$40	$0	$141	$0.07	28%	4.3	3.1	489
Commercial Refrigeration Efficiency		*ECM Motors - Medium Temp Walk-in, Evap fan <= 15" Diameter*	ECM Motor	44	8,585	Shaded Pole Motor	137	8,585	15	$70	$0	$269	$0.07	26%	5.1	3.7	793
Commercial Refrigeration Efficiency		*ECM Motors - Low Temp Walk-in, Evap fan <= 15" Diameter*	ECM Motor	52	8,585	Shaded Pole Motor	161	8,585	15	$70	$0	$269	$0.07	26%	4.3	3.2	936
Commercial Refrigeration Efficiency		*ECM Motors - Medium Temp Walk-in, Evap fan > 15" Diameter*	ECM Motor	68	8,585	Shaded Pole Motor	138	8,585	15	$70	$0	$269	$0.07	26%	6.6	4.9	605
Commercial Refrigeration Efficiency		*ECM Motors - Low Temp Walk-in, Evap fan > 15" Diameter*	ECM Motor	80	8,585	Shaded Pole Motor	163	8,585	15	$70	$0	$269	$0.07	26%	5.6	4.2	714
Commercial Refrigeration Efficiency		*Anti-Sweat Heater Controls, Medium Temperature Case*	Anti-Sweat Heater Controls	12	8,760	Anti-Sweat Heaters running constantly	121	8,760	12	$60	$0	$300	$0.07	20%	4.7	3.8	955
Commercial Refrigeration Efficiency		*Anti-Sweat Heater Controls, Low Temperature Case*	Anti-Sweat Heater Controls	24	8,760	Anti-Sweat Heaters running constantly	238	8,760	12	$60	$0	$300	$0.07	20%	2.4	1.9	1,873
Commercial Refrigeration Efficiency		*No Heat Case Doors (Cooler)*	No Heat Case Doors	0	8,760	Anti-Sweat Heaters running constantly	121	8,760	10	$100	$0	$275	$0.07	36%	3.9	2.5	1,061
Commercial Refrigeration Efficiency		*No Heat Case Doors (Freezer)*	No Heat Case Doors	0	8,760	Anti-Sweat Heaters running constantly	238	8,760	10	$150	$0	$800	$0.07	19%	5.7	4.7	2,082
Commercial Refrigeration Efficiency		*Evaporative Motor Fan Controller (EMFC) (Cooler)*	Evaporative motor fan control on commercial medium temp walk-in	4	3,262	No motor fan controls on commercial medium temp walk-in	137	3,262	15	$35	$0	$351	$0.07	10%	12.1	10.9	432
Commercial Refrigeration Efficiency		*Evaporative Motor Fan Controller (EFMC) (Freezer)*	Evaporative motor fan control on low temp walk-in	5	1,717	No motor fan controls on commercial low temp walk-in	161	1,717	15	$35	$0	$351	$0.07	10%	19.6	17.6	268
Commercial Refrigeration Efficiency		*Night Curtains for Reach-In Cases (per linear foot)*	Night Curtains on Cases	120	1,825	Open Reach-In Cases	120	2,920	4	$20	$0	$42	$0.07	48%	7.5	3.9	131
Commercial Refrigeration Efficiency		*Medium-temp Enclosed Reach-In Case (per linear foot)*	Medium-temp Reach-In Cases with Doors	21	8,760	Medium-temp Open Reach-In Cases	132	8,760	15	$70	$0	$1,011	$0.07	7%	15.6	14.5	970
Commercial Refrigeration Efficiency		*Retrofit of open multi-deck cooler cases with solid glass doors (per linear foot of case)*	Closed Case with Doors	12	8,760	Open Case with No Doors	71	8,760	12	$50	$0	$237	$0.07	21%	2.6	2.0	515
Commercial Refrigeration Efficiency		*Retrofit of open multi-deck freezer cases with solid glass doors (per linear foot of case)*	Closed Case with Doors	39	8,760	Open Case with No Doors	216	8,760	12	$75	$0	$343	$0.07	22%	2.0	1.5	1,558
Commercial Refrigeration Efficiency		*LED Refrigerated Case Lighting*	LED Strip lighting	51	8,760	T8 or T12 Fluorescent	139	8,760	20	$45	$0	$164	$0.07	27%	3.2	2.3	771
Commercial Refrigeration Efficiency		*Demand Contolled Ventilation - Electric Only or Combo Customer*	Commercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HP Motor	11,766	3,307	Commercial kitchen ventilation hoods without Demand Controlled Ventilation with 8.65 HP Motor	19,597	3,307	20	$865	$0	$16,019	$0.07	5%	3.9	3.7	25,896
Commercial Refrigeration Efficiency		*Misc Custom Measures*	Efficiency systems and practices	18,369	3,000	Existing systems and practices	25,000	3,000	10	$862	$0	$11,126	$0.07	8%	8.4	7.7	19,892
Peak Partner Rewards		***Peak Partner Rewards***															
Peak Partner Rewards	Peak Partner Rewards-New	*Customer reducion of their electrical load by an agreed upon amount when the electric grid experiences peak demand periods.*	Participation in program	0	6	No participation in program	885,294	6	1	$28,418	$0	$0	$16.25	#DIV/0!	0.0	-0.3	5,312
Peak Partner Rewards	Peak Partner Rewards-Existing	*Customer reducion of their electrical load by an agreed upon amount when the electric grid experiences peak demand periods.*	Participation in program	0	6	No participation in program	885,294	6	1	$28,418	$0	$0	$16.25	#DIV/0!	0.0	-0.3	5,312
Water Heater Rebate		***Water Heater Rebate***															
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,021	385	Minimum Efficiency Electric Water Heater	4,593	909	10	$400	$959	$611	$0.11	65%	2.1	0.7	2,627
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,107	10	$400	$959	$611	$0.11	65%	1.6	0.6	3,463
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,265	10	$400	$959	$611	$0.11	65%	1.5	0.5	4,187
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,018	379	Minimum Efficiency Electric Water Heater	4,500	914	10	$400	$959	$611	$0.11	65%	2.1	0.7	2,588
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,021	386	Minimum Efficiency Electric Water Heater	4,500	1,116	10	$400	$959	$611	$0.11	65%	1.6	0.6	3,471
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)*	High Efficiency Heat Pump Water Heater	4,018	380	Minimum Efficiency Electric Water Heater	4,500	1,277	10	$400	$959	$611	$0.11	65%	1.5	0.5	4,221
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,021	385	Minimum Efficiency Electric Water Heater	4,593	909	10	$500	$959	$611	$0.11	82%	2.1	0.4	2,627
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & ASHP Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,107	10	$500	$959	$611	$0.11	82%	1.6	0.3	3,463
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,029	402	Minimum Efficiency Electric Water Heater	4,593	1,265	10	$500	$959	$611	$0.11	82%	1.5	0.3	4,187

Program	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
School Education Kits	$0.007	$0.001	0.1	0.0	$33.37	$0.00	64%	0	0	0	0	100%	35%	100%	0	0	0	0	0	0	0	0
School Education Kits	$0.017	$0.002	0.0	0.0	$4.17	$0.00	124%	0	0	0	0	100%	30%	100%	0	0	0	0	0	0	0	0
School Education Kits	$0.008	$0.001	0.0	0.0	$4.19	$0.00	124%	0	0	0	0	100%	25%	100%	0	0	0	0	0	0	0	0
School Education Kits	$0.103	$0.020	0.1	0.0	$0.00	$0.00	8%	2,800	14,000	2,800	14,000	100%	55%	100%	46	519,599	89,320	89,320	46	519,599	89,320	89,320
School Education Kits	$0.126	$0.025	0.1	0.0	$0.00	$0.00	8%	2,800	14,000	2,800	14,000	100%	55%	100%	57	641,857	134,680	134,680	57	641,857	134,680	134,680
School Education Kits	$0.007	$0.001	0.1	0.0	$33.37	$0.00	64%	2,800	1,680	2,800	1,680	100%	35%	100%	24	327,645	5,746	5,746	24	327,645	5,746	5,746
School Education Kits	$0.017	$0.002	0.0	0.0	$4.17	$0.00	124%	2,800	1,680	2,800	1,680	100%	30%	100%	6	40,600	2,166	2,166	6	40,600	2,166	2,166
School Education Kits	$0.008	$0.001	0.0	0.0	$4.19	$0.00	124%	2,800	1,680	2,800	1,680	100%	25%	100%	4	29,361	863	863	4	29,361	863	863
School Education Kits	$0.103	$0.020	0.1	0.0	$0.00	$0.00	8%	0	0	7,500	15,000	100%	55%	100%	0	0	0	0	49	556,713	95,700	95,700
School Education Kits	$0.126	$0.025	0.1	0.0	$0.00	$0.00	8%	0	0	7,500	15,000	100%	55%	100%	0	0	0	0	61	687,704	144,300	144,300
Self Direct																						
Self Direct	$0.187	$0.011	322.0	217.2	$0.00	$0.00	63%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LI Home Energy Squad																						
LI Home Energy Squad	$0.000	$0.000	0.0	0.0	$0.00	$0.00	11%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LI Home Energy Squad	$0.000	$0.000	0.0	0.0	$0.00	$0.00	11%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
LI Home Energy Squad	$0.000	$0.000	0.0	0.0	$0.00	$0.00	11%	1,900	31,942	1,900	31,942	100%	100%	100%	152	1,374,942	0	0	152	1,374,942	0	0
Energy Star Retail Products Platform Pilot																						
Energy Star Retail Products Platform Pilot	$0.480	$0.044	0.0	0.0	$0.00	$0.00	55%	3999	3999	3,999	3,999	100%	100%	100%	13	136,425	59,985	0	13	136,425	59,985	0
Energy Star Retail Products Platform Pilot	$0.441	$0.040	0.0	0.0	$0.00	$0.00	55%	40	40	40	40	100%	100%	100%	0	1,979	800	0	0	1,979	800	0
Energy Star Retail Products Platform Pilot	$0.205	$0.023	0.1	0.1	$0.00	$0.00	90%	13569	13569	13,569	13,569	100%	100%	100%	986	721,950	135,690	678,450	986	721,950	135,690	678,450
Energy Star Retail Products Platform Pilot	$0.200	$0.014	0.0	0.0	$0.00	$0.00	64%	12984	12984	12,984	12,984	100%	100%	100%	122	1,062,272	194,760	259,680	122	1,062,272	194,760	259,680
Energy Star Retail Products Platform Pilot	$0.075	$0.007	0.9	0.0	$0.00	$0.00	3%	7546	7546	7,546	7,546	100%	100%	100%	223	2,186,747	150,920	905,520	223	2,186,747	150,920	905,520
Energy Star Retail Products Platform Pilot	$0.188	$0.016	0.8	0.0	$0.00	$0.00	2%	18	18	18	18	100%	100%	100%	0	4,182	720	1,350	0	4,182	720	1,350
Energy Star Retail Products Platform Pilot	$0.614	$0.051	0.0	0.0	$0.00	$0.00	2%	75	75	0	0	100%	100%	100%	0	638	359	1,939	0	0	0	0
Energy Star Retail Products Platform Pilot	$0.227	$0.032	0.0	0.0	$0.00	$0.00	100%	339	339	0	0	100%	100%	100%	3	24,414	5,082	0	0	0	0	0
Energy Star Retail Products Platform Pilot	$0.094	$0.010	0.0	0.0	$0.00	$0.00	100%	291	291	0	0	100%	100%	100%	12	67,903	5,816	16,285	0	0	0	0
Energy Information Systems																						
Energy Information Systems	#DIV/0!	#DIV/0!	0.0	0.0	$0.00	$0.00	0%	5	5	5	5	100%	100%	100%	0	0	48,600	162,000	0	0	48,600	162,000
Energy Information Systems	$0.009	$0.009	21.9	12.0	-$18,000.00	$0.00	51%	20	20	20	20	100%	100%	100%	241	4,107,142	35,033	0	241	4,107,142	35,033	0
Energy Information Systems	$0.000	$0.000	-17.5	-9.6	$14,400.00	$0.00	51%	0	20	0	20	100%	100%	100%	-192	-3,285,714	0	0	-192	-3,285,714	0	0
Energy Information Systems	$0.017	$0.002	6.4	3.5	$273.19	$11,355.85	51%	20	52	20	52	100%	100%	100%	184	2,117,225	34,138	42,691	184	2,117,225	34,138	42,691
Heating Efficiency																						
Heating Efficiency	$0.057	$0.003	0.4	0.3	$0.00	-$9.82	57%	45	60	45	60	100%	100%	100%	15	115,475	6,000	12,720	15	115,475	6,000	12,720
Heating Efficiency	$0.070	$0.010	0.3	0.2	$0.00	-$3.02	70%	10	10	10	10	100%	100%	100%	2	15,567	1,000	2,120	2	15,567	1,000	2,120
Heating Efficiency	$0.034	$0.002	1.1	1.3	$0.00	$0.00	100%	9	11	9	11	100%	100%	100%	14	25,309	780	1,835	14	25,309	780	1,835
Thermostat Optimization Program																						
Thermostat Optimization Program	~~$0.376~~	~~$0.038~~	~~0.3008~~	~~0.2507~~	~~$0.00~~	~~$0.00~~	~~76%~~	~~1,054~~	~~1,054~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~264~~	~~152,083~~	~~52,700~~	~~210,799~~	0	0	0	0
Thermostat Optimization Program	~~$0.141~~	~~$0.014~~	~~0.3008~~	~~0.2507~~	~~$0.00~~	~~$0.00~~	~~76%~~	~~2,789~~	~~2,789~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~699~~	~~404,761~~	~~52,427~~	~~557,731~~	0	0	0	0
Thermostat Optimization Program	~~$0.028~~	~~$0.003~~	~~0.3008~~	~~0.2507~~	~~$0.00~~	~~$0.00~~	~~76%~~	~~38~~	~~38~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~10~~	~~73,317~~	~~1,897~~	~~7,588~~	0	0	0	0
Commercial Refrigeration Efficiency																						
Commercial Refrigeration Efficiency	$0.064	$0.064	0.0	0.0	$0.00	$0.00	100%	75	630	75	630	100%	100%	100%	30	265,382	15,750	15,750	30	265,382	15,750	15,750
Commercial Refrigeration Efficiency	$0.003	$0.000	0.2	0.0	$57.73	$0.00	2%	2	21	2	21	100%	100%	100%	0	43,452	141	141	0	43,452	141	141
Commercial Refrigeration Efficiency	$0.017	$0.002	0.0	0.0	$8.44	$0.00	1%	1	5	1	5	100%	100%	100%	0	2,081	34	34	0	2,081	34	34
Commercial Refrigeration Efficiency	$0.099	$0.020	0.1	0.0	$13.97	$0.00	3%	0	4	0	4	100%	100%	100%	0	1,947	180	180	0	1,947	180	180
Commercial Refrigeration Efficiency	$0.049	$0.010	0.1	0.1	$0.00	$0.00	87%	12	98	12	98	100%	100%	100%	9	51,038	2,346	2,346	9	51,038	2,346	2,346
Commercial Refrigeration Efficiency	$0.097	$0.006	0.0	0.1	$0.00	$0.00	99%	18	154	18	154	100%	100%	100%	8	68,295	6,160	21,669	8	68,295	6,160	21,669
Commercial Refrigeration Efficiency	$0.082	$0.005	0.1	0.1	$0.00	$0.00	99%	12	98	12	98	100%	100%	100%	6	51,268	3,920	13,790	6	51,268	3,920	13,790
Commercial Refrigeration Efficiency	$0.088	$0.006	0.1	0.1	$0.00	$0.00	98%	43	363	43	363	100%	100%	100%	35	308,245	25,410	97,651	35	308,245	25,410	97,651
Commercial Refrigeration Efficiency	$0.075	$0.005	0.1	0.1	$0.00	$0.00	98%	20	167	20	167	100%	100%	100%	19	167,284	11,690	44,925	19	167,284	11,690	44,925
Commercial Refrigeration Efficiency	$0.116	$0.008	0.1	0.1	$0.00	$0.00	98%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Commercial Refrigeration Efficiency	$0.098	$0.007	0.1	0.1	$0.00	$0.00	98%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Commercial Refrigeration Efficiency	$0.063	$0.005	0.1	0.1	$0.00	$0.00	90%	22	187	22	187	100%	100%	100%	20	191,207	11,220	56,100	20	191,207	11,220	56,100
Commercial Refrigeration Efficiency	$0.032	$0.003	0.2	0.2	$0.00	$0.00	90%	8	68	8	68	100%	100%	100%	14	136,397	4,080	20,400	14	136,397	4,080	20,400
Commercial Refrigeration Efficiency	$0.094	$0.009	0.1	0.1	$0.00	$0.00	100%	19	162	19	162	100%	100%	100%	21	184,050	16,200	44,550	21	184,050	16,200	44,550
Commercial Refrigeration Efficiency	$0.072	$0.007	0.2	0.3	$0.00	$0.00	100%	7	56	7	56	100%	100%	100%	14	124,808	8,400	44,800	14	124,808	8,400	44,800
Commercial Refrigeration Efficiency	$0.081	$0.005	0.1	0.1	$0.00	$0.00	37%	4	34	4	34	100%	100%	100%	2	15,735	1,190	11,951	2	15,735	1,190	11,951
Commercial Refrigeration Efficiency	$0.130	$0.009	0.2	0.0	$0.00	$0.00	20%	1	8	1	8	100%	100%	100%	0	2,299	280	2,812	0	2,299	280	2,812
Commercial Refrigeration Efficiency	$0.153	$0.038	0.0	0.0	-$3.16	$0.00	0%	35	296	35	296	100%	100%	100%	0	41,524	5,920	12,432	0	41,524	5,920	12,432
Commercial Refrigeration Efficiency	$0.072	$0.005	0.1	0.1	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Commercial Refrigeration Efficiency	$0.097	$0.008	0.1	0.1	$0.00	$58.09	100%	12	105	12	105	100%	100%	100%	7	57,876	5,250	24,902	7	57,876	5,250	24,902
Commercial Refrigeration Efficiency	$0.048	$0.004	0.2	0.2	$0.00	$71.65	100%	12	105	12	105	100%	100%	100%	20	175,160	7,875	36,046	20	175,160	7,875	36,046
Commercial Refrigeration Efficiency	$0.058	$0.003	0.1	0.1	$0.00	$0.00	100%	40	336	40	336	100%	100%	100%	32	277,499	15,120	55,020	32	277,499	15,120	55,020
Commercial Refrigeration Efficiency	$0.033	$0.002	7.8	4.2	$0.00	$2,380.02	49%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Commercial Refrigeration Efficiency	$0.043	$0.004	6.6	2.3	$0.00	$0.00	33%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Peak Partner Rewards																			0	0	0	0
Peak Partner Rewards	$5.350	$5.350	885.3	951.9	$0.00	$0.00	100%	0	0	15	15	100%	100%	100%	0	0	0	0	14,279	79,676	426,269	0
Peak Partner Rewards	$5.350	$5.350	885.3	951.9	$0.00	$0.00	100%	0	0	0	0	100%	100%	100%	0	0	0	0	0	0	0	0
Water Heater Rebate																						
Water Heater Rebate	$0.152	$0.015	0.6	0.6	$0.00	$0.00	100%	0	0	2	2	100%	100%	100%	0	0	0	0	1	5,735	800	1,223
Water Heater Rebate	$0.116	$0.012	0.6	0.6	$0.00	$0.00	100%	0	0	1	1	100%	100%	100%	0	0	0	0	1	3,781	400	611
Water Heater Rebate	$0.096	$0.010	0.6	0.6	-$65.17	$0.00	100%	0	0	27	27	100%	100%	100%	0	0	0	0	17	123,417	10,800	16,509
Water Heater Rebate	$0.155	$0.015	0.5	0.5	$0.00	$0.00	100%	0	0	1	1	100%	100%	100%	0	0	0	0	1	2,825	400	611
Water Heater Rebate	$0.115	$0.012	0.5	0.5	$0.00	$0.00	100%	0	0	1	1	100%	100%	100%	0	0	0	0	1	3,789	400	611
Water Heater Rebate	$0.095	$0.009	0.5	0.5	-$65.17	$0.00	100%	0	0	1	1	100%	100%	100%	0	0	0	0	1	4,608	400	611
Water Heater Rebate	$0.190	$0.019	0.6	0.6	$0.00	$0.00	100%	0	0	2	2	100%	100%	100%	0	0	0	0	1	5,735	1,000	1,223
Water Heater Rebate	$0.144	$0.014	0.6	0.6	$0.00	$0.00	100%	0	0	1	1	100%	100%	100%	0	0	0	0	1	3,781	500	611
Water Heater Rebate	$0.119	$0.012	0.6	0.6	-$65.17	$0.00	100%	0	0	27	27	100%	100%	100%	0	0	0	0	17	123,417	13,500	16,509

Program	Electric Measure Group (for programs with new 2020 measures only)	Electric Measure Description	Efficient Product Description / Rating	Efficient Product Consumption (watts)	Efficient Hours of Operation (hrs/yr)	Baseline Product Description / Rating	Baseline Product Consumption (watts)	Baseline Hours of Operation (hrs/yr)	Measure Lifetime (years)	Rebate Amount ($)	Average Baseline Product Cost ($)
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,018	379	Minimum Efficiency Electric Water Heater	4,500	914	10	$500	$959
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & ASHP Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,021	386	Minimum Efficiency Electric Water Heater	4,500	1,116	10	$500	$959
Water Heater Rebate	Heat Pump Water Heater	*Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon) + CEA/ANSI Communications Port*	High Efficiency Heat Pump Water Heater	4,018	380	Minimum Efficiency Electric Water Heater	4,500	1,277	10	$500	$959

Program	Incremental Cost of Efficient Product ($)	Assumed Energy Cost ($/kWh)	Rebate as a % of Incremental Cost (%)	Incremt'l Cost Payback Period w/o Rebate (yrs)	Incremt'l Cost Payback Period w/ Rebate (yrs)	Annual Customer kWh Savings (kWh/yr)	Rebated Cost / Cust kWh Saved ($/kWh)	Rebated Lifetime cost /Cust KWh Saved ($/kWh)	Customer kW Savings (kW)	Generator Peak kW Savings (kW)	Non-Energy O&M Savings ($)	Energy O&M Savings ($)	Coincidence Factor (%)
Water Heater Rebate	$611	$0.11	82%	2.1	0.4	2,588	$0.193	$0.019	0.5	0.5	$0.00	$0.00	100%
Water Heater Rebate	$611	$0.11	82%	1.6	0.3	3,471	$0.144	$0.014	0.5	0.5	$0.00	$0.00	100%
Water Heater Rebate	$611	$0.11	82%	1.5	0.3	4,221	$0.118	$0.012	0.5	0.5	-$65.17	$0.00	100%

Program	2019 Participants (-)	2019 Units (-)	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Gen kW (kW)	2019 NET Gen kWh (kWh)	2019 Rebate Budget ($)	2019 Incremental Costs ($)	2020 NET Gen kW (kW)	2020 NET Gen kWh (kWh)	2020 Rebate Budget ($)	2020 Incremental Costs ($)
Water Heater Rebate	0	0	1	1	100%	100%	100%	0	0	0	0	1	2,825	500	611
Water Heater Rebate	0	0	1	1	100%	100%	100%	0	0	0	0	1	3,789	500	611
Water Heater Rebate	0	0	1	1	100%	100%	100%	0	0	0	0	1	4,608	500	611

Program	Natural Gas Measure Group (for programs with new 2020 measures only)	Natural Gas Measure Description	High Efficiency Product Description / Rating	Efficient Product Consumption	Baseline Product Description / Rating	Baseline Product Consumption	Life of Product (years)	Rebate Amount	Average Baseline Product Cost	Incremental Cost of Efficient Product	Assumed Energy Cost ($/Dth)	Rebate as a % of Incremental Cost	Incremt'l Cost Period w/o Rebate	Incremt'l Cost Payback Period w/ Rebate	Annual Customer Dth Savings	Rebated cost /Cust Dth Saved	Rebated Lifetime cost /Cust Dth Saved	Non-Fuel O&M Savings	Electric or Natural Gas O&M Savings	Participants 2019	Units 2019	Participants 2020	Units 2020	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Dth (Dth)	2019 Rebate Budget ($)	2019 Incremental Cost ($)	2020 NET Dth (Dth)	2020 Rebate Budget ($)	2020 Incremental Cost ($)
		Business																														
Business New Construction		**Business New Construction**																														
Business New Construction		*Average EDA Project - 2017*	More Efficient than Code Building	5,026	Code-Compliant Building	7,180	20	$12,353	$0	$105,174	$8.67	12%	5.6	5.0	2,154	$5.735	$0.287	$0.000	$0.000	0	0	0	0	100%	100%	100%	0	0	0	0	0	0
Business New Construction		*Average EDA Project - 2018*	More Efficient than Code Building	3,528	Code-Compliant Building	5,041	20	$8,672	$0	$73,839	$8.67	12%	5.6	5.0	1,512	$5.735	$0.287	$0.000	$0.000	0	0	0	0	100%	100%	100%	0	0	0	0	0	0
Business New Construction		*Average EDA Project - 2019*	More Efficient than Code Building	3,759	Code-Compliant Building	5,369	20	$9,238	$0	$78,658	$8.67	12%	5.6	5.0	1,611	$5.735	$0.287	$0.000	$0.000	9	9	9	9	100%	100%	100%	14,498	83,145	707,920	14,498	83,145	707,920
Business New Construction		*Average EEB Project - 2017*	More Efficient than Code Building	1,552	Code-Compliant Building	2,217	20	$4,676	$0	$18,850	$8.67	25%	3.3	2.5	665	$7.029	$0.351	$0.000	$0.000	0	0	0	0	100%	100%	100%	0	0	0	0	0	0
Business New Construction		*Average EEB Project - 2018*	More Efficient than Code Building	1,060	Code-Compliant Building	1,514	20	$3,193	$0	$12,872	$8.67	25%	3.3	2.5	454	$7.029	$0.351	$0.000	$0.000	0	0	0	0	100%	100%	100%	0	0	0	0	0	0
Business New Construction		*Average EEB Project - 2019*	More Efficient than Code Building	1,292	Code-Compliant Building	1,846	20	$3,894	$0	$15,697	$8.67	25%	3.3	2.5	554	$7.029	$0.351	$0.000	$0.000	16	16	16	16	100%	100%	100%	8,863	62,296	251,155	8,863	62,296	251,155
Commercial Efficiency		**Commercial Efficiency**																				0	0									
Commercial Efficiency		*Custom Gas Project*	New Equipment	23,938	Less Efficient Product/Systems	24,888	15	$3,040	$0	$33,211	$8.67	9%	2.4	2.2	950	$3.200	$0.213	$5,657.319	$0.000	43	43	43	43	100%	100%	100%	40,839	130,703	1,428,083	40,839	130,703	1,428,083
Commercial Efficiency		*Phase 2 Customer Contribution*	0	0	0	0	0	$100,000	$0	$100,000	$8.67	100%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	1	1	1	1	100%	100%	100%	0	100,000	100,000	0	100,000	100,000
Commercial Efficiency		*Behavioral Changes*	Behavior changes that reduce energy use	19,771	No change in behavior	20,812	1	$0	$0	$0	$8.67	#DIV/0!	0.0	0.0	1,041	$0.000	$0.000	$0.000	$0.000	1	1	1	1	100%	100%	100%	1,041	0	0	1,041	0	0
Commercial Efficiency		*Behavioral Changes*	Behavior changes that reduce energy use	-13,181	No change in behavior	-13,875	1	$0	$0	$0	$8.67	#DIV/0!	0.0	0.0	-694	$0.000	$0.000	$0.000	$0.000	1	1	1	1	100%	100%	100%	-694	0	0	-694	0	0
Cooling Efficiency		**Cooling Efficiency**																														
Cooling Efficiency		*ERV Install on RTU/AHU for reduced heating load*	72% Sensible Effectiveness Heat Recovery on 11193 CFM OA (Heating Mode)	874	No heat recovery on 11193 CFM OA	2,864	15	$11,193	$0	$38,413	$8.67	29%	2.2	1.6	1,989	$5.627	$0.375	$0.000	$0.000	3	3	3	3	100%	100%	100%	5,968	33,579	115,238	5,968	33,579	115,238
Custom Efficiency		**Custom Efficiency**																				0	0									
Custom Efficiency		*Custom Efficiency Gas*	High Efficiency Product/system	22,566	Less Efficient Product/Systems	23,462	19	$4,477	$52,436	$68,955	$8.67	6%	6.5	6.1	895	$5.000	$0.257	$2,887.568	$0.000	19	19	19	19	100%	100%	100%	17,011	85,055	1,310,138	17,011	85,055	1,310,138
Custom Efficiency		*Custom Studies Gas*	0	0	0	0	0	$9,152	$0	$24,740	$9.12	37%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	2	2	2	2	100%	100%	100%	0	18,304	49,480	0	18,304	49,480
Efficiency Controls		**Efficiency Controls**																				0	0									
Efficiency Controls		*Efficiency Controls - Gas*	New Digital Controls System	10,000	Non Digital or Obsolete Digital System	11,071	15	$8,486	$0	$66,151	$8.67	13%	6.0	5.2	1,071	$7.925	$0.528	$1,776.409	$0.000	15	15	15	15	100%	100%	100%	16,062	127,293	992,266	16,062	127,293	992,266
Efficiency Controls		*Efficiency Controls - Study Allocation*	Study Allocation	0	0	0	0	$3,718	$0	$5,678	$8.67	65%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	2	2	2	2	100%	100%	100%	0	7,436	11,357	0	7,436	11,357
Food Service		**Food Service**																				0	0									
Food Service		*Convection Oven*	Convection Oven	70	Deck Oven	174	11	$500	$7,870	$2,060	$8.67	24%	2.3	1.7	104	$4.805	$0.437	$0.000	$0.000	18	18	18	18	100%	100%	100%	1,873	9,000	37,080	1,873	9,000	37,080
Food Service		*Conveyor Oven*	Conveyor Oven	269	Pizza Deck Oven	454	11	$750	$25,000	$7,080	$8.67	11%	4.4	3.9	185	$4.054	$0.369	$0.000	$0.000	3	3	3	3	100%	100%	100%	555	2,250	21,240	555	2,250	21,240
Food Service		*Combi-Oven*	Combination Oven	62	Steamer	204	11	$1,000	$20,828	$4,272	$8.67	23%	3.5	2.7	142	$7.045	$0.640	$0.000	$0.000	4	4	4	4	100%	100%	100%	568	4,000	17,088	568	4,000	17,088
Food Service		*Rotisserie Oven*	Rotisserie Oven - Infrared	71	Open Flame Rotisserie Oven	126	11	$500	$15,500	$2,665	$8.67	19%	5.6	4.5	55	$9.030	$0.821	$0.000	$0.000	4	4	4	4	100%	100%	100%	221	2,000	10,660	221	2,000	10,660
Food Service		*Rotating Rack Oven*	Rotating Rack Oven	331	Deck Oven	502	11	$500	$18,530	$2,977	$8.67	17%	2.0	1.7	171	$2.931	$0.266	$0.000	$0.000	3	3	3	3	100%	100%	100%	512	1,500	8,931	512	1,500	8,931
Food Service		*Commercial Gas Fryer*	High Efficiency Unit	99	Standard Efficiency Unit	142	11	$250	$3,630	$4,272	$8.67	6%	11.4	10.7	43	$5.790	$0.526	$0.000	$0.000	7	7	7	7	100%	100%	100%	302	1,750	29,904	302	1,750	29,904
Food Service		*Upright Broiler*	Upright Broiler	105	Standard Radiant Broiler	214	11	$600	$12,587	$4,413	$8.67	14%	4.7	4.1	108	$5.543	$0.504	$0.000	$0.000	2	2	2	2	100%	100%	100%	216	1,200	8,826	216	1,200	8,826
Food Service		*High Efficiency Charbroiler*	High Efficiency Charbroiler	73	Standard Charbroiler	148	11	$300	$1,800	$2,173	$8.67	14%	3.3	2.9	75	$3.976	$0.361	$0.000	$0.000	1	1	1	1	100%	100%	100%	75	300	2,173	75	300	2,173
Food Service		*High Efficiency Salamander Broiler*	High Efficiency Salamander Broiler	17	Standard Salamander Broiler	41	11	$150	$5,002	$1,006	$8.67	15%	4.9	4.2	24	$6.357	$0.578	$0.000	$0.000	1	1	1	1	100%	100%	100%	24	150	1,006	24	150	1,006
Food Service		*Pasta Cooker*	Pasta Cooker	1,551	Gas Range	1,689	11	$200	$2,317	$2,413	$8.67	8%	2.0	1.8	138	$1.448	$0.132	$0.000	$0.000	4	4	4	4	100%	100%	100%	552	800	9,652	552	800	9,652
Food Service		*Commercial Dishwasher - Under Counter, Gas Only or Combo Customer*	ENERGY STAR qualified unit	19	Conventional unit as defined by ENERGY STAR	25	10	$157	$4,960	$53	$8.67	294%	0.6	-1.1	6	$25.839	$2.584	$20.684	$19.417	10	10	10	10	100%	100%	100%	61	1,567	533	61	1,567	533
Food Service		*Commercial Dishwasher - Door Type, Gas Only or Combo Customer*	ENERGY STAR qualified unit	80	Conventional unit as defined by ENERGY STAR	118	15	$168	$6,900	$333	$8.67	50%	0.6	0.3	38	$4.469	$0.298	$162.959	$27.302	8	8	8	8	100%	100%	100%	300	1,341	2,664	300	1,341	2,664
Food Service		*Demand Controlled Ventilation - Gas Only or Combo Customer*	Commercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HP Motor	4,267	ercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HP	4,634	20	$2,163	$0	$17,360	$8.67	12%	4.0	3.5	366	$5.907	$0.295	$0.000	$1,171.381	2	2	2	2	100%	100%	100%	732	4,325	34,719	732	4,325	34,719
Multi Family Building Efficiency		**Multi Family Building Efficiency**																				0	0									
Multi Family Building Efficiency	Showerhead	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in natural gas DHW unit home	1.5 GPM Showerhead	3.9	2.5 GPM Showerhead	6.4	10	$5.60	$0	$5.60	$8.67	100%	0.1	0.0	2.57	$2.17	$0.22	$39.46	$0.00	737	1,792	527	1,149	100%	100%	100%	4,614	$0	$0	2,960	$6,436	$6,436
Multi Family Building Efficiency	Showerhead - Handheld	Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in natural gas DHW unit home	1.5 GPM Showerhead	3.9	2.5 GPM Showerhead	6.4	10	$16.25	$0	$16.25	$8.67	100%	0.3	0.0	2.57	$6.31	$0.63	$39.46	$0.00	0	0	117	256	100%	100%	100%	0	$0	$0	659	$4,162	$4,162
Multi Family Building Efficiency	Aerators - Kitchen	Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater	1.5 GPM Kitchen Faucet Aerator	0.9	2.2 GPM Kitchen Faucet Aerator	1.3	10	$2.86	$0	$2.86	$8.67	100%	0.3	0.0	0.42	$6.86	$0.69	$5.40	$0.00	757	1,840	538	1,174	100%	100%	100%	767	$0	$0	489	$3,359	$3,359
Multi Family Building Efficiency	Aerators - Bathroom	Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater	1.0 GPM Bathroom Faucet Aerator	0.3	2.2 GPM Bathroom Faucet Aerator	0.6	10	$1.48	$0	$1.48	$8.67	100%	0.2	0.0	0.31	$4.78	$0.48	$4.75	$0.00	454	1,105	100	217	100%	100%	100%	342	$0	$0	67	$321	$321
Multi Family Building Efficiency	Aerators - Bathroom	Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater	0.5 GPM Bathroom Faucet Aerator	0.1	2.2 GPM Bathroom Faucet Aerator	0.6	10	$4.00	$0	$4.00	$8.67	100%	0.4	0.0	0.44	$9.12	$0.91	$6.73	$0.00	303	737	715	1,560	100%	100%	100%	323	$0	$0	685	$6,240	$6,240
Multi Family Building Efficiency	~~Water Heater Blanket~~	~~Water Heater Blanket on Gas Water Heater~~	~~Add commercial insulation wrap R8 around Water Heater Tank~~	~~1.6~~	~~No External Insulation on water heater~~	~~2.6~~	~~7~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~1.00~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~23~~	~~57~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~57~~	~~$0~~	~~$0~~	~~0~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Performance Buildings~~	~~Holistic efficiency projects totaling either 15%, 20%, or 25% whole-building savings~~	~~Average Performance Building~~	~~801~~	~~Average existing multifamily building after Direct Install measures completed~~	~~996~~	~~20~~	~~$5,909~~	~~14333~~	~~5612~~	~~$8.67~~	~~105%~~	~~6.8~~	~~-0.4~~	~~94.90~~	~~$62.27~~	~~$3.11~~	~~$0.00~~	~~$0.00~~	~~14~~	~~34~~	~~0~~	~~0~~	~~100%~~	~~100%~~	~~100%~~	~~3,226~~	~~$200,898~~	~~$190,800~~	~~0~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Water Heater Setback~~	~~Water Heater Setback~~	~~Building hot water system with setback~~	~~622.5~~	~~Building hot water system without setback~~	~~648.4~~	~~2~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~25.94~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~17~~	~~38~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~976~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Weatherstripping~~	~~Weatherstripping~~	~~Weatherstrip 1 Door to achieve leakage rate or 0.18 cfm/linear feet of crack~~	~~0.8~~	~~Door with leakage rate of 0.68 cfm/linear feet of crack~~	~~2.6~~	~~10~~	~~$30.00~~	~~$0~~	~~$30.00~~	~~$8.67~~	~~100%~~	~~2.0~~	~~0.0~~	~~1.72~~	~~$17.48~~	~~$1.75~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~26~~	~~57~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~98~~	~~$1,710~~	~~$1,710~~
Multi Family Building Efficiency	~~Renter Kit Showerhead~~	~~Renter Kit Showerhead~~	~~1.5 GPM Showerhead~~	~~3.9~~	~~2.5 GPM Showerhead~~	~~6.4~~	~~10~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~2.57~~	~~$0.00~~	~~$0.00~~	~~$39.46~~	~~$0.00~~	~~0~~	~~0~~	~~45~~	~~98~~	~~100%~~	~~35%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~88~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Renter Kit Bathroom Aerator~~	~~Renter Kit Kitchen Aerator~~	~~1.5 GPM Kitchen Faucet Aerator~~	~~0.9~~	~~2.2 GPM Kitchen Faucet Aerator~~	~~1.3~~	~~10~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~0.42~~	~~$0.00~~	~~$0.00~~	~~$5.40~~	~~$0.00~~	~~0~~	~~0~~	~~45~~	~~98~~	~~100%~~	~~30%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~12~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Renter Kit Kitchen Aerator~~	~~Renter Kit Bathroom Aerator~~	~~1.0 GPM Bathroom Faucet Aerator~~	~~0.3~~	~~2.2 GPM Bathroom Faucet Aerator~~	~~0.6~~	~~10~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~0.31~~	~~$0.00~~	~~$0.00~~	~~$4.75~~	~~$0.00~~	~~0~~	~~0~~	~~45~~	~~98~~	~~100%~~	~~25%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~8~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~Renter Kit Window Film~~	~~Renter Kit Window Film~~	~~Window w/ Window Film~~	~~0.0~~	~~Untreated Window~~	~~0.1~~	~~1~~	~~$0.00~~	~~$0~~	~~$0.00~~	~~$8.67~~	~~#DIV/0!~~	~~0.0~~	~~0.0~~	~~0.13~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~46~~	~~100~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~13~~	~~$0~~	~~$0~~
Multi Family Building Efficiency	~~MN - Heating Efficiency - Prescriptive~~	~~Prescriptive Heating Equipment~~	~~Efficient Heating Equipment~~	~~2,002~~	~~Inefficient Heating Equipment~~	~~2,105~~	~~10~~	~~$984~~	~~$719~~	~~$2,272~~	~~$8.67~~	~~43%~~	~~2.6~~	~~1.5~~	~~102.28~~	~~$9.62~~	~~$0.93~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~34~~	~~74~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~7,569~~	~~$72,795~~	~~$168,107~~
Multi Family Building Efficiency	~~Custom Projects~~	~~Custom Gas~~	~~Efficient Equipment~~	~~100.0~~	~~Inefficient Equipment~~	~~125.0~~	~~19.0~~	~~$168.15~~	~~$0~~	~~$1,854.57~~	~~$8.67~~	~~9%~~	~~8.6~~	~~7.8~~	~~25.00~~	~~$6.72~~	~~$0.35~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~10~~	~~21~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~531~~	~~$3,570~~	~~$39,368~~
Multi Family Building Efficiency	~~Custom Projects~~	~~Custom Combo~~	~~Efficient Equipment~~	~~162.7~~	~~Inefficient Equipment~~	~~203.4~~	~~19.0~~	~~$325.45~~	~~$0~~	~~$2,646.22~~	~~$8.67~~	~~12%~~	~~7.5~~	~~6.6~~	~~40.68~~	~~$8.00~~	~~$0.42~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~13~~	~~27~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~1,116~~	~~$8,930~~	~~$72,612~~
Multi Family Building Efficiency	~~Carryover Projects~~	~~Carryover Projects~~	~~Efficient Equipment~~	~~502.3~~	~~Inefficient Equipment~~	~~627.9~~	~~19.0~~	~~$15,283.16~~	~~$0~~	~~$33,096.56~~	~~$8.67~~	~~46%~~	~~30.4~~	~~16.4~~	~~125.58~~	~~$121.71~~	~~$6.41~~	~~$0.00~~	~~$0.00~~	~~0~~	~~0~~	~~2~~	~~4~~	~~100%~~	~~100%~~	~~100%~~	~~0~~	~~$0~~	~~$0~~	~~502~~	~~$61,133~~	~~$132,386~~
Process Efficiency		**Process Efficiency**																				0	0									
Process Efficiency		*Custom*	New System	40,630	Old System	47,711	4	$24,697	$0	$243,302	$8.67	10%	3.6	3.2	7,081	$3.488	$0.991	$6,124.214	$0.000	24	24	24	24	1	1	1	169,950	592,723	5,839,241	169,950	592,723	5,839,241
Process Efficiency		*Commercial Heating*	New System	743	Old System	784	10	$522	$1,450	$1,690	$8.67	31%	4.9	3.4	41	$12.671	$1.293	-$14.941	$0.000	9	9	9	9	1	1	1	371	4,702	15,208	371	4,702	15,208
Process Efficiency		*Recommissioning*	Optimized Building Systems	11,790	Existing Building System - Not Tuned or Optimized	13,100	7	$3,424	$0	$9,774	$8.67	35%	0.6	0.4	1,310	$2.614	$0.373	$4,528.077	$0.000	4	4	4	4	1	1	1	5,240	13,698	39,095	5,240	13,698	39,095
Process Efficiency		*Behavioral Changes*	Behavior changes that reduce energy use	19,771	No change in behavior	20,812	1	$0	$0	$0	$8.67	#DIV/0!	0.0	0.0	1,041	$0.000	$0.000	$0.000	$0.000	4	4	4	4	1	1	1	4,162	0	0	4,162	0	0
Process Efficiency		*Behavioral Changes*	Behavior changes that reduce energy use	-13,181	No change in behavior	-13,875	1	$0	$0	$0	$8.67	#DIV/0!	0.0	0.0	-694	$0.000	$0.000	$0.000	$0.000	4	4	4	4	1	1	1	-2,775	0	0	-2,775	0	0
Process Efficiency		*Energy Design Assistance*	High Efficiency Building	3,746	Code Level Efficiency Building	5,351	20	$9,524	$0	$73,370	$8.67	13%	5.3	4.6	1,605	$5.933	$0.297	$0.000	$0.000	2	2	2	2	0	1	1	3211	19,049	146,741	3211	19,049	146,741
Process Efficiency		*Phase 2 customer contribution*	0	0	0	0	0	$0	$0	$1,500	$8.67	0%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	28	28	28	28	1	1	1	0	0	42,000	0	0	42,000
Recommissioning		**Recommissioning**																				0	0									
Recommissioning		*Recommissioning Implementation*	Post-Recommissioned Building	11,790	Pre-Recommissioned Building	13,100	7	$2,740	$0	$9,774	$8.67	28%	0.6	0.4	1,310	$2.091	$0.299	$4,528.077	$0.000	14	14	14	14	1	1	1	18,341	38,353	136,833	18,341	38,353	136,833
Recommissioning		*Recommissioning Studies*	Study Cost and Rebate	0	0	0	0	$5,697	$0	$10,420	$8.67	55%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	19	19	19	19	1	1	1	0	108,236	197,986	0	108,236	197,986
Recommissioning		*BOC Program Attributable Savings*	After BOC Training	12,931	Before BOC Training	13,100	5	$248	$0	$554	$8.67	45%	0.4	0.2	170	$1.459	$0.292	$0.000	$0.000	16	16	16	16	1	1	1	2,718	3,964	8,868	2,718	3,964	8,868
Turn Key Services		**Turn Key Services**																				0	0									
Turn Key Services		*Identification ~ On site audit*	Perform Study + Low Cost No Cost	0	0	0	0	$435	$0	$555	$8.67	78%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	60	60	60	60	1	1	1	0	26,100	33,300	0	26,100	33,300
Turn Key Services		*Implementation*	High Eff Project	5,000	Less Efficient System	5,532	13	$10,999	$0	$19,313	$9.12	57%	4.0	1.7	532	$20.684	$1.644	$0.000	$0.000	8	8	8	8	1	1	1	4,254	87,989	154,505	4,254	87,989	154,505
Turn Key Services		*Building Tune-up Implementation*	Implemented Recommisioning measures	6,892	Existing systems	7,657	7	$1,085	$0	$5,987	$8.67	18%	0.9	0.7	766	$1.417	$0.202	$0.000	$0.000	2	2	2	2	1	1	1	1,531	2,170	11,974	1,531	2,170	11,974
RESIDENTIAL		**RESIDENTIAL**																														
Home Energy Savings Program		**Home Energy Savings Program**																				0	0				4,919					
Home Energy Savings Program		*Attic Insulation and Bypass Air Sealing - Gas Heated & Non-Cooled Home*	Insulate the attic to R-48 & perform Bypass air sealing	64	Existing home with average attic area of 823 sq. ft. and R-17 insulation	70	20	$1,524	$0	$1,524	$9.12	100%	26.5	0.0	6	$241.502	$12.075	$0.000	$0.000	77	106	77	106	1	1	1	669	161,560	161,560	669	161,560	161,560
Home Energy Savings Program		*Attic Insulation and Bypass Air Sealing - Gas Heated & Electrically Cooled Home*	Insulate the attic to R-48 & perform Bypass air sealing	64	Existing home with average attic area of 823 sq. ft. and R-17 insulation	70	20	$1,501	$0	$1,501	$9.12	100%	26.1	0.0	6	$237.764	$11.888	$0.000	$0.000	71	114	71	114	1	1	1	719	171,064	171,064	719	171,064	171,064
Home Energy Savings Program		*Air Sealing - Gas Heated & Non-Cooled Home*	Perform Bypass air sealing along with Attic Insulation	57	Existing home with average home size of 1406 sq. ft.	64	10	$880	$0	$880	$9.12	100%	15.3	0.0	6	$139.221	$13.922	$0.000	$0.000	77	106	77	106	1	1	1	670	93,300	93,300	670	93,300	93,300
Home Energy Savings Program		*Air Sealing - Gas Heated & Electrically Cooled Home*	Perform Bypass air sealing along with Attic Insulation	57	Existing home with average home size of 1406 sq. ft.	64	10	$803	$0	$803	$9.12	100%	13.9	0.0	6	$127.082	$12.708	$0.000	$0.000	71	114	71	114	1	1	1	721	91,592	91,592	721	91,592	91,592
Home Energy Savings Program		*Wall Insulation - Gas Heated and Non-Cooled Home*	R-11 insulation	56	Existing home with average attic area of 823 sq. ft. and R-17 insulation	70	20	$1,295	$0	$1,295	$9.12	100%	10.1	0.0	14	$91.649	$4.582	$0.000	$0.000	27	32	27	32	1	1	1	452	41,441	41,441	452	41,441	41,441
Home Energy Savings Program		*Wall Insulation - Gas Heated and Electricallly Cooled Home*	R-11 insulation	56	Existing home with average attic area of 823 sq. ft. and R-17 insulation	70	20	$1,192	$0	$1,192	$9.12	100%	9.3	0.0	14	$84.357	$4.218	$0.000	$0.000	11	18	11	18	1	1	1	254	21,456	21,456	254	21,456	21,456
Home Energy Savings Program		*Tank-Type Water Heater - High Draw Pattern (30-50 Gallon)*	High Efficiency Tank-Type Water Heater	25	Minimum Efficiency Tank-Type Water Heater	28	13	$1,598	$0	$1,598	$9.12	100%	66.7	0.0	2.628	$608.210	$46.785	$0.000	$0.000	142	205	142	205	1	1	1	539	327,643	327,643	539	327,643	327,643
Home Energy Savings Program		*New 84% boiler (SF)*	84% Efficient Boiler	127	82% Efficient Boiler	130	20	$3,000	$0	$3,000	$9.12	100%	106.3	0.0	3	$969.338	$48.467	$0.000	$0.000	41	63	41	63	1	1	1	195	189,000	189,000	195	189,000	189,000
Home Energy Savings Program		*Replace Furnace AFUE 80 to 95 (SF)*	95% Efficient Furnace	89	80% Efficient Furnace	106	18	$4,635	$0	$4,635	$9.12	100%	30.5	0.0	17	$278.145	$15.453	$0.000	$0.000	37	42	37	42	1	1	1	700	194,670	194,670	700	194,670	194,670
Energy Efficient Showerhead		**Energy Efficient Showerhead**																				0	0									
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	3	2.5 GPM Showerhead	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.424	$0.142	$33.370	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	2	2.5 GPM Showerhead	4	10	$3	$0	$3	$9.12	100%	0.1	0.0	1	$2.118	$0.212	$22.436	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater*	1.5 GPM Kitchen Faucet Aerator	1	2.2 GPM Kitchen Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.766	$0.477	$4.173	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater*	1.0 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$0	$0	$0	$9.12	100%	0.1	0.0	0	$1.758	$0.176	$4.187	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM for second faucet to replace existing 2.2 gpm aerator in home with natural gas DHW heater*	1.0 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$0	$0	$0	$9.12	100%	0.1	0.0	0	$1.758	$0.176	$4.187	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	3	2.5 GPM Showerhead	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.475	$0.147	$33.370	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	2	2.5 GPM Showerhead	4	10	$3	$0	$3	$9.12	100%	0.1	0.0	1	$2.193	$0.219	$22.436	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater*	1.5 GPM Kitchen Faucet Aerator	1	2.2 GPM Kitchen Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.957	$0.496	$4.173	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater*	0.5 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.200	$0.420	$5.931	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater*	0.5 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.200	$0.420	$5.931	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	3	2.5 GPM Showerhead	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.525	$0.153	$33.370	$0.000	3,129	14,080	3,129	14,080	1	1	1	18,391	46,746	46,746	18,391	46,746	46,746
Energy Efficient Showerhead		*Provide new 1.5 gpm showerhead for second shower to replace existing 2.5 gpm showerhead in natural gas DHW unit home*	1.5 GPM Showerhead	2	2.5 GPM Showerhead	4	10	$3	$0	$3	$9.12	100%	0.1	0.0	1	$2.268	$0.227	$22.436	$0.000	2,347	10,560	2,347	10,560	1	1	1	7,728	35,059	35,059	7,728	35,059	35,059
Energy Efficient Showerhead		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with natural gas DHW heater*	1.5 GPM Kitchen Faucet Aerator	1	2.2 GPM Kitchen Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$5.116	$0.512	$4.173	$0.000	3,129	14,080	3,129	14,080	1	0	1	1,772	22,669	22,669	1,772	22,669	22,669
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater*	0.5 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.442	$0.444	$5.931	$0.000	3,129	14,080	3,129	14,080	1	0	1	2,179	24,200	24,200	2,179	24,200	24,200
Energy Efficient Showerhead		*Provide Energy Efficient Bath Faucet Aerator - 0.5 GPM to replace existing 2.2 gpm aerator in home with electric DHW heater*	0.5 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$4.442	$0.444	$5.931	$0.000	2,347	10,560	2,347	10,560	1	0	1	1,226	18,150	18,150	1,226	18,150	18,150
Energy Feedback		**Energy Feedback**																				0	0									
Energy Feedback		*Rollup: Online Group Savings*	Treatment	852	Control	852	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	10,898	10,898	10,898	10,898	1	1	1	1,407	0	0	1,407	0	0
Energy Feedback		*Rollup: Existing Participant 2017 Savings*	Treatment	851	Control	852	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	1	$0.000	$0.000	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Rollup: New Participant 2017 Savings*	Treatment	852	Control	852	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Rollup: Existing Participant 2018 Savings*	Treatment	851	Control	851	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Rollup: New Participant 2018 Savings*	Treatment	852	Control	852	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Rollup: Existing Participant 2019 Savings*	Treatment	850	Control	851	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	147,000	147,000	147,000	147,000	1	1	1	69,540	0	0	69,540	0	0
Energy Feedback		*Rollup: New Participant 2019 Savings*	Treatment	852	Control	852	1	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	$0.000	$0.000	$0.000	13,000	13,000	13,000	13,000	1	1	1	3,340	0	0	3,340	0	0
Energy Feedback		*Behavioral Adjustments Rollup: Online Group Savings*	Treatment	-568	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	10,898	0	10,898	1	1	1	-938	0	0	-938	0	0
Energy Feedback		*Behavioral Adjustments Rollup: Existing Participants 2017 Savings*	Treatment	-568	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Behavioral Adjustments Rollup: New Participant 2017 Savings*	Treatment	-568	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Behavioral Adjustments Rollup: Existing Participants 2018 Savings*	Treatment	-567	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Behavioral Adjustments Rollup: New Participant 2018 Savings*	Treatment	-568	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Energy Feedback		*Behavioral Adjustments Rollup: Existing Participants 2019 Savings*	Treatment	-567	Control	-567	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	147,000	0	147,000	1	1	1	-46,360	0	0	-46,360	0	0
Energy Feedback		*Behavioral Adjustments Rollup: New Participant 2019 Savings*	Treatment	-568	Control	-568	0	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	0	$0.000	#DIV/0!	$0.000	$0.000	0	13,000	0	13,000	1	1	1	-2,227	0	0	-2,227	0	0
Efficient New Home Construction		**Efficient New Home Construction**																				0	0									
Efficient New Home Construction		*Low Income Envelope Improvements - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 1773 and Average 12.7% Better Than Code	62	Reference Home Based upon Local Code	74	20	$467	$0	$1,110	$9.12	42%	9.5	5.5	13	$36.275	$1.814	$0.000	$0.000	19	25	19	25	1	1	1	322	11,663	27,751	322	11,663	27,751
Efficient New Home Construction		*10% to 15% improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3630 and Average 13.1% Better Than Code	110	Reference Home Based upon Local Code	132	20	$220	$0	$1,129	$9.12	19%	5.5	4.5	22	$9.803	$0.490	$0.000	$0.000	149	200	149	200	1	1	1	4,475	43,864	225,565	4,475	43,864	225,565
Efficient New Home Construction		*15% to 20% improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3834 and Average 17.4% Better Than Code	108	Reference Home Based upon Local Code	139	20	$443	$0	$2,004	$9.12	22%	7.1	5.5	31	$14.304	$0.715	$0.000	$0.000	281	376	281	376	1	1	1	11,650	166,640	753,965	11,650	166,640	753,965
Efficient New Home Construction		*20% to 25% improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4439 and Average 21.3% Better Than Code	115	Reference Home Based upon Local Code	157	20	$878	$0	$3,004	$9.12	29%	7.9	5.6	42	$20.943	$1.047	$0.000	$0.000	108	144	108	144	1	1	1	6,037	126,432	432,512	6,037	126,432	432,512
Efficient New Home Construction		*25% to 30% improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5711 and Average 25.9% Better Than Code	132	Reference Home Based upon Local Code	195	20	$1,040	$0	$4,104	$9.12	25%	7.1	5.3	64	$16.346	$0.817	$0.000	$0.000	30	40	30	40	1	1	1	2,546	41,616	164,155	2,546	41,616	164,155
Efficient New Home Construction		*30% to 35% improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5613 and Average 32.7% Better Than Code	79	Reference Home Based upon Local Code	118	20	$726	$0	$3,803	$9.12	19%	10.7	8.7	39	$18.674	$0.934	$0.000	$0.000	30	40	30	40	1	1	1	1,555	29,040	152,111	1,555	29,040	152,111
Efficient New Home Construction		*35% and greater improvement over local code - Combo Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4362 and Average 35.8% Better Than Code	90	Reference Home Based upon Local Code	148	20	$1,568	$0	$7,917	$9.12	20%	15.0	12.0	58	$27.086	$1.354	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Efficient New Home Construction		*Low Income Envelope Improvements - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 1773 and Average 12.7% Better Than Code	62	Reference Home Based upon Local Code	74	20	$500	$0	$1,110	$9.12	45%	9.5	5.2	13	$38.880	$1.944	$0.000	$0.000	7	10	7	10	1	1	1	129	5,000	11,100	129	5,000	11,100
Efficient New Home Construction		*10% to 15% improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3630 and Average 13.1% Better Than Code	110	Reference Home Based upon Local Code	132	20	$250	$0	$1,286	$9.12	19%	6.3	5.1	22	$11.165	$0.558	$0.000	$0.000	47	63	47	63	1	1	1	1,422	15,873	81,625	1,422	15,873	81,625
Efficient New Home Construction		*15% to 20% improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 3834 and Average 17.4% Better Than Code	108	Reference Home Based upon Local Code	139	20	$500	$0	$2,262	$9.12	22%	8.0	6.2	31	$16.145	$0.807	$0.000	$0.000	24	32	24	32	1	1	1	983	15,873	71,817	983	15,873	71,817
Efficient New Home Construction		*20% to 25% improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4439 and Average 21.3% Better Than Code	115	Reference Home Based upon Local Code	157	20	$1,000	$0	$3,004	$9.12	33%	7.9	5.2	42	$23.853	$1.193	$0.000	$0.000	13	18	13	18	1	1	1	749	17,857	53,635	749	17,857	53,635
Efficient New Home Construction		*25% to 30% improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5711 and Average 25.9% Better Than Code	132	Reference Home Based upon Local Code	195	20	$1,200	$0	$4,104	$9.12	29%	7.1	5.0	64	$18.853	$0.943	$0.000	$0.000	4	6	4	6	1	1	1	379	7,143	24,428	379	7,143	24,428
Efficient New Home Construction		*30% to 35% improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 5613 and Average 32.7% Better Than Code	79	Reference Home Based upon Local Code	118	20	$1,500	$0	$3,803	$9.12	39%	10.7	6.5	39	$38.584	$1.929	$0.000	$0.000	4	6	4	6	1	1	1	231	8,929	22,636	231	8,929	22,636
Efficient New Home Construction		*35% and greater improvement over local code - Gas Only Customers*	Energy Efficient Home Based Upon REMRate model by House Rater with Average Size 4362 and Average 35.8% Better Than Code	90	Reference Home Based upon Local Code	148	20	$2,000	$0	$7,917	$9.12	25%	15.0	11.2	58	$34.558	$1.728	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Efficient New Home Construction		*Energy Star Clothes Washer - Combo Customers w/ Gas DHW*	Energy Star Clothes Washer	0	Standard Clothes Washer	0	11	$7	$677	$20	$9.12	33%	1.8	1.2	0	$58.679	$5.334	$10.002	$0.000	187	250	187	250	1	1	1	29	1,688	5,063	29	1,688	5,063
Efficient New Home Construction		*Energy Star Clothes Washer - Gas Only Customers w/ Gas DHW*	Energy Star Clothes Washer	0	Standard Clothes Washer	0	11	$10	$677	$20	$9.12	49%	1.8	0.9	0	$86.931	$7.903	$10.002	$0.000	56	75	56	75	1	1	1	9	750	1,519	9	750	1,519
Residential Heating		**Residential Heating**																				0	0									
Residential Heating		*95% Efficient Furnace in New Home*	95% Efficient Furnace	68	90% Efficient Furnace	72	18	$100	$957	$165	$9.12	61%	4.8	1.9	4	$26.337	$1.463	$0.000	$0.000	100	100	100	100	1	1	1	380	10,000	16,493	380	10,000	16,493
Residential Heating		*96% Efficient Furnace in New Home*	96% Efficient Furnace	68	90% Efficient Furnace	72	18	$150	$957	$379	$9	$0	9.1	5.5	5	$32.921	$1.829	$0.000	$0.000	186	186	186	186	1	1	1	847	27,900	70,466	847	27,900	70,466
Residential Heating		*97% Efficient Furnace in New Home*	97% Efficient Furnace	67	90% Efficient Furnace	72	18	$200	$957	$477	$9.12	42%	9.8	5.7	5	$37.624	$2.090	$0.000	$0.000	30	30	30	30	1	1	1	159	6,000	14,305	159	6,000	14,305
Residential Heating		*95% Efficient Furnace in Existing Home*	95% Efficient Furnace	89	80% Efficient Furnace	106	18	$200	$1,030	$736	$9.12	27%	4.8	3.5	17	$12.002	$0.667	$0.000	$0.000	850	850	850	850	1	1	1	14,164	170,000	625,884	14,164	170,000	625,884
Residential Heating		*96% Efficient Furnace in Existing Home*	96% Efficient Furnace	88	80% Efficient Furnace	106	18	$300	$1,030	$950	$9.12	32%	5.9	4.0	18	$16.878	$0.938	$0.000	$0.000	3,956	3,956	3,956	3,956	1	1	1	70,317	1,186,800	3,759,193	70,317	1,186,800	3,759,193
Residential Heating		*97% Efficient Furnace in Existing Home*	97% Efficient Furnace	87	80% Efficient Furnace	106	18	$400	$1,030	$1,048	$9.12	38%	6.1	3.8	19	$21.180	$1.177	$0.000	$0.000	1,500	1,500	1,500	1,500	1	1	1	28,329	600,000	1,572,358	28,329	600,000	1,572,358
Residential Heating		*84% Efficient Boiler*	84% Efficient Boiler	127	82% Efficient Boiler	130	20	$100	$685	$1,446	$9.12	7%	51.2	47.7	3	$32.311	$1.616	$0.000	$0.000	275	275	275	275	1	1	1	851	27,500	397,563	851	27,500	397,563
Residential Heating		*90% Efficient Boiler*	90% Efficient Boiler	118	82% Efficient Boiler	130	20	$300	$685	$2,379	$9.12	13%	21.1	18.4	12	$24.233	$1.212	$0.000	$0.000	75	75	75	75	1	1	1	928	22,500	178,434	928	22,500	178,434
Residential Heating		*95% Efficient Boiler*	95% Efficient Boiler	110	82% Efficient Boiler	130	20	$400	$685	$3,001	$9.12	13%	16.4	14.2	20	$19.884	$0.994	$0.000	$0.000	200	200	200	200	1	1	1	4,023	80,000	600,283	4,023	80,000	600,283
Home Energy Squad		**Home Energy Squad**																				0	0									

Program	Natural Gas Measure Group (for programs with new 2020 measures only)	Natural Gas Measure Description	High Efficiency Product Description / Rating	Efficient Product Consumption	Baseline Product Description / Rating	Baseline Product Consumption	Life of Product (years)	Rebate Amount	Average Baseline Product Cost	Incremental Cost of Efficient Product	Assumed Energy Cost ($/Dth)	Rebate as a % of Incremental Cost	Increm't'l Cost Period w/o Rebate	Increm't'l Cost Payback Period w/ Rebate	Annual Customer Dth Savings	Rebated cost /Cust Dth Saved	Rebated Lifetime cost /Cust Dth Saved	Non-Fuel O&M Savings	Electric or Natural Gas O&M Savings	Participants 2019	Units 2019	Participants 2020	Units 2020	NTG (%)	Installation Rate (%)	Realization Rate (%)	2019 NET Dth (Dth)	2019 Rebate Budget ($)	2019 Incremental Cost ($)	2020 NET Dth (Dth)	2020 Rebate Budget ($)	2020 Incremental Cost ($)
Home Energy Squad		*NEC Energy Squad Service 2017*	weighted average Energy Efficient Gas measures by participant	9	weighted average Baseline Gas measures by participant	10	10		$0	$13	$9.12	0%	0.5	0.5	2	$0.000	$0.000	$7.949	$0.000			0	0	1	1	1	0	0	0	0	0	0
Home Energy Squad		*NEC Energy Squad Service 2018*	weighted average Energy Efficient Gas measures by participant	9	weighted average Baseline Gas measures by participant	10	10		$0	$13	$9.12	0%	0.5	0.5	2	$0.000	$0.000	$8.094	$0.000			0	0	1	1	1	0	0	0	0	0	0
Home Energy Squad		*NEC Energy Squad Service 2019*	weighted average Energy Efficient Gas measures by participant	9	weighted average Baseline Gas measures by participant	10	10		$0	$13	$9.12	0%	0.5	0.5	2	$0.000	$0.000	$8.189	$0.000	2,187	10,580	2,187	10,580	1	1	1	20,133	0	140,972	20,133	0	140,972
Home Energy Squad		*Weatherstrip 1 additional door*	Weatherstrip 1 additional Door to achieve leakage rate or 0.18 cfm/linear feet of crac	1	Additional Door with leakage rate of 0.68 cfm/linear feet of crack	3	10	$0	$0	$10	$9.12	0%	0.6	0.6	2	$0.000	$0.000	$0.000	$0.000	10	47	10	47	1	1	1	81	0	470	81	0	470
Home Energy Squad		*Install Second Programmable Thermostat*	Install second T-stat and Auto setback thermostat by 2.6 F for heating	44	Existing non-programmable thermostat	46	10	$0	$0	$22	$9.12	0%	0.9	0.9	3	$0.000	$0.000	$0.000	$0.000	4	17	4	17	1	1	1	48	0	384	48	0	384
Whole Home Efficiency		***Whole Home Efficiency***																				0	0									
Whole Home Efficiency		*Attic Insulation - Gas Heated Homes Without Cooling*	Home with additional insulation	49	Home with R20 or less existing Insulation	60	20	$283	$0	$1,744	$9.12	16%	17.7	14.8	11	$26.176	$1.309	$0.000	$0.000	2	10	2	10	1	1	1	108	2,828	17,444	108	2,828	17,444
Whole Home Efficiency		*Attic Insulation - Gas Heat Homes With Cooling, Combo Customer*	Home with additional insulation	51	Home with R20 or less existing Insulation	60	20	$253	$0	$1,703	$9.12	15%	21.0	17.9	9	$28.412	$1.421	$0.000	$0.000	20	80	20	80	1	1	1	711	20,210	136,274	711	20,210	136,274
Whole Home Efficiency		*Attic Insulation - Gas Heat Homes With Cooling, Gas Only Customer*	Home with additional insulation	48	Home with R20 or less existing Insulation	60	20	$294	$0	$1,560	$9.12	19%	14.6	11.8	12	$25.103	$1.255	$0.000	$0.000	2	10	2	10	1	1	1	117	2,943	15,601	117	2,943	15,601
Whole Home Efficiency		*Wall Insulation - Gas Heat Homes Without Cooling*	R-11 insulation	23	Baseline assumes R-0 in wall cavities as existing level	60	20	$287	$0	$2,704	$9.12	11%	8.0	7.1	37	$7.732	$0.387	$0.000	$0.000	2	10	2	10	1	1	1	371	2,872	27,041	371	2,872	27,041
Whole Home Efficiency		*Wall Insulation - Gas Heat Homes With Cooling, Combo Customer*	R-11 insulation	36	Baseline assumes R-0 in wall cavities as existing level	60	20	$219	$0	$1,616	$9.12	14%	7.5	6.5	24	$9.275	$0.464	$0.000	$0.000	25	100	25	100	1	1	1	2,364	21,923	161,591	2,364	21,923	161,591
Whole Home Efficiency		*Wall Insulation - Gas Heat Homes With Cooling, Gas Only Customer*	R-11 insulation	31	Baseline assumes R-0 in wall cavities as existing level	60	20	$299	$0	$2,066	$9.12	14%	7.9	6.8	29	$10.408	$0.520	$0.000	$0.000	2	10	2	10	1	1	1	287	2,987	20,659	287	2,987	20,659
Whole Home Efficiency		*Air Sealing T2 - 25% reduction - Gas Heat Homes Without Cooling*	Home with Tier 2 Air Sealing - Average 27% reduction	45	Existing Home Without Air Sealing	60	10	$150	$0	$874	$9.12	17%	6.3	5.2	15	$9.891	$0.989	$0.000	$0.000	2	10	2	10	1	1	1	152	1,500	8,736	152	1,500	8,736
Whole Home Efficiency		*Air Sealing T2 - 25% reduction - Gas Heat Homes With Cooling, Combo Customer*	Home with Tier 2 Air Sealing - Average 27% reduction	45	Existing Home Without Air Sealing	60	10	$122	$0	$711	$9.12	17%	5.1	4.3	15	$8.044	$0.804	$0.000	$0.000	5	20	5	20	1	1	1	303	2,440	14,211	303	2,440	14,211
Whole Home Efficiency		*Air Sealing T2 - 25% reduction - Gas Heat Homes With Cooling, Gas Only Custome*	Home with Tier 2 Air Sealing - Average 27% reduction	45	Existing Home Without Air Sealing	60	10	$150	$0	$711	$9.12	21%	5.1	4.1	15	$9.891	$0.989	$0.000	$0.000	2	10	2	10	1	1	1	152	1,500	7,105	152	1,500	7,105
Whole Home Efficiency		*Air Sealing T3 - 30% reduction - Gas Heat Homes Without Cooling*	Home with Tier 3 Air Sealing - average 42% reduction	26	Existing Home Without Air Sealing	60	10	$200	$0	$1,362	$9.12	15%	4.4	3.7	34	$5.873	$0.587	$0.000	$0.000	2	10	2	10	1	1	1	341	2,000	13,625	341	2,000	13,625
Whole Home Efficiency		*Air Sealing T3 - 30% reduction - Gas Heat Homes With Cooling, Combo Customer*	Home with Tier 3 Air Sealing - average 42% reduction	26	Existing Home Without Air Sealing	60	10	$181	$0	$1,231	$9.12	15%	4.0	3.4	34	$5.307	$0.531	$0.000	$0.000	12	50	12	50	1	1	1	1,703	9,036	61,556	1,703	9,036	61,556
Whole Home Efficiency		*Air Sealing T3 - 30% reduction - Gas Heat Homes With Cooling, Gas Only Custome*	Home with Tier 3 Air Sealing - average 42% reduction	26	Existing Home Without Air Sealing	60	10	$200	$0	$1,231	$9.12	16%	4.0	3.3	34	$5.873	$0.587	$0.000	$0.000	2	10	2	10	1	1	1	341	2,000	12,311	341	2,000	12,311
Whole Home Efficiency		*Tank-Type Water Heater - High Draw Pattern (30-50 Gallon)*	High Efficiency Tank-Type Water Heater	25	Minimum Efficiency Tank-Type Water Heater	28	13	$100	$950	$376	$9.12	27%	15.7	11.5	3	$38.054	$2.927	$0.000	$0.000	5	5	5	5	1	1	1	13	500	1,878	13	500	1,878
Whole Home Efficiency		*Tank-Type Water Heater - Medium Draw Pattern (30-50 Gallon)*	High Efficiency Tank-Type Water Heater	23	Minimum Efficiency Tank-Type Water Heater	26	13	$100	$870	$125	$9.12	80%	4.4	0.9	3	$31.791	$2.445	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Whole Home Efficiency		*Tankless Water Heater - High Draw Pattern*	High Efficiency Tankless Water Heater	17	Minimum Efficiency Tank-Type Water Heater	26	20	$275	$1,071	$862	$9.12	32%	11.4	7.7	8	$33.033	$1.652	$0.000	$0.000	1	1	1	1	1	1	1	8	275	862	8	275	862
Whole Home Efficiency		*Tankless Water Heater - Medium Draw Pattern*	High Efficiency Tankless Water Heater	17	Minimum Efficiency Tank-Type Water Heater	28	20	$275	$975	$542	$9.12	51%	5.2	2.6	11	$24.190	$1.210	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Whole Home Efficiency		*95% Efficient Furnace in Existing Home*	95% Efficient Furnace	89	80% Efficient Furnace	106	18	$70	$1,030	$736	$9.12	10%	4.8	4.4	17	$4.201	$0.233	$0.000	$0.000	1	5	1	5	1	1	1	83	350	3,682	83	350	3,682
Whole Home Efficiency		*96% Efficient Furnace in Existing Home*	96% Efficient Furnace	88	80% Efficient Furnace	106	18	$325	$1,030	$950	$9.12	34%	5.9	3.9	18	$18.284	$1.016	$0.000	$0.000	5	20	5	20	1	1	1	355	6,500	19,005	355	6,500	19,005
Whole Home Efficiency		*97% Efficient Furnace in Existing Home*	97% Efficient Furnace	87	80% Efficient Furnace	106	18	$425	$1,030	$1,048	$9.12	41%	6.1	3.6	19	$22.504	$1.250	$0.000	$0.000	0	2	0	2	1	1	1	38	850	2,096	38	850	2,096
Whole Home Efficiency		*84% Efficient Boiler*	84% Efficient Boiler	127	82% Efficient Boiler	130	20	$125	$685	$1,446	$9.12	9%	51.2	46.8	3	$40.389	$2.019	$0.000	$0.000	0	2	0	2	1	1	1	6	250	2,891	6	250	2,891
Whole Home Efficiency		*90% Efficient Boiler*	90% Efficient Boiler	118	82% Efficient Boiler	130	20	$300	$685	$2,379	$9.12	13%	21.1	18.4	12	$24.233	$1.212	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Whole Home Efficiency		*95% Efficient Boiler*	95% Efficient Boiler	110	82% Efficient Boiler	130	20	$400	$685	$3,001	$9.12	13%	16.4	14.2	20	$19.884	$0.994	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Whole Home Efficiency		*Programmable Thermostat (Install and Program)*	New T-state w/ Auto setback by 2.6 F for heating	87	Existing non-programmable thermostat	93	10	$8	$0	$24	$9.12	31%	0.5	0.3	6	$1.384	$0.138	$0.000	$0.000	10	40	10	40	1	1	1	221	306	978	221	306	978
Whole Home Efficiency		*Energy Star Clothes Washer - Combo Customers w/ Gas DHW*	Energy Star Clothes Washer	0	Standard Clothes Washer	0	11	$8	$677	$23	$9.12	33%	2.6	1.8	0	$66.972	$6.088	$7.705	$0.000	4	15	4	15	1	1	1	2	116	347	2	116	347
Whole Home Efficiency		*Energy Efficient Showerhead (Direct Install)*	1.5 GPM Showerhead	3	2.5 GPM Showerhead	5	10	$4	$0	$4	$9.12	100%	0.1	0.0	2	$1.723	$0.172	$33.370	$0.000	22	88	22	88	1	1	1	192	330	330	192	330	330
Whole Home Efficiency		*Energy Efficient Bathroom Aerator (Direct Install*	1.5 GPM Kitchen Faucet Aerator	1	2.2 GPM Kitchen Faucet Aerator	1	10	$1	$0	$1	$9.12	100%	0.1	0.0	0	$3.178	$0.318	$4.173	$0.000	33	132	33	132	1	1	1	42	132	132	42	132	132
Whole Home Efficiency		*Energy Efficient Kitchen Aerator (Direct Install)*	1.0 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.3	0.0	0	$7.323	$0.732	$4.187	$0.000	22	88	22	88	1	1	1	24	176	176	24	176	176
Whole Home Efficiency		*Energy Efficient Bathroom Aerator (Direct Install*	0.5 GPM Bathroom Faucet Aerator	0	2.2 GPM Bathroom Faucet Aerator	1	10	$2	$0	$2	$9.12	100%	0.2	0.0	0	$3.877	$0.388	$5.931	$0.000	7	28	7	28	1	1	1	11	42	42	11	42	42
Whole Home Efficiency		*Water Heater Blanket*	Add commercial Insulation wrap R8 around Water Heater Tank	2	No External Insulation on water heater	3	7	$25	$0	$25	$9.12	100%	2.5	0.0	1	$23.066	$3.549	$0.000	$0.000	12	50	12	50	1	1	1	54	1,250	1,250	54	1,250	1,250
Whole Home Efficiency		*Gas Water Heater Setback*	setback WH setpoint to 120 F	2	Existing WH at setpoint of 130 F	3	8	$15	$0	$0	$9.12	#DIV/0!	0.0	-4.1	0	$37.299	$4.662	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Insulation Rebate		***Insulation Rebate***																				0	0									
Insulation Rebate		*Gas Heat Homes Without Cooling*	Home with additional insulation	49	Home with R20 or less existing Insulation	60	20	$283	$0	$1,744	$9.12	16%	17.7	14.8	11	$26.176	$1.309	$0.000	$0.000	39	45	39	45	1	1	1	486	12,728	78,500	486	12,728	78,500
Insulation Rebate		*Gas Heat Homes With Cooling, Combo Customer*	Home with additional insulation	51	Home with R20 or less existing Insulation	60	20	$292	$0	$1,966	$9.12	15%	22.5	19.1	9	$32.793	$1.640	$0.000	$6.451	194	225	194	225	1	1	1	2,001	65,607	442,371	2,001	65,607	442,371
Insulation Rebate		*Gas Heat Homes With Cooling, Gas Only Customer*	Home with additional insulation	48	Home with R20 or less existing Insulation	60	20	$294	$0	$1,801	$9.12	16%	15.6	13.1	12	$25.103	$1.255	$0.000	$8.507	71	83	71	83	1	1	1	973	24,431	149,459	973	24,431	149,459
Insulation Rebate		*Gas Heat Homes Without Cooling*	R-11 insulation	23	Baseline assumes R-0 in wall cavities as existing level	60	20	$287	$0	$2,704	$9.12	11%	8.0	7.1	37	$7.732	$0.387	$0.000	$0.000	95	110	95	110	1	1	1	4,086	31,590	297,448	4,086	31,590	297,448
Insulation Rebate		*Gas Heat Homes With Cooling, Combo Customer*	R-11 insulation	36	Baseline assumes R-0 in wall cavities as existing level	60	20	$253	$0	$1,865	$9.12	14%	8.0	6.9	24	$10.705	$0.535	$0.000	$17.148	197	229	197	229	1	1	1	5,413	57,945	427,103	5,413	57,945	427,103
Insulation Rebate		*Gas Heat Homes With Cooling, Gas Only Customer*	R-11 insulation	31	Baseline assumes R-0 in wall cavities as existing level	60	20	$299	$0	$2,384	$9.12	13%	8.4	7.4	29	$10.408	$0.520	$0.000	$20.818	45	52	45	52	1	1	1	1,492	15,531	123,993	1,492	15,531	123,993
Insulation Rebate		*Gas Heat Homes Without Cooling*	Home with Tier 2 Air Sealing	38	Existing Home Without Air Sealing	60	10	$143	$0	$1,114	$9.12	13%	5.4	4.7	22	$6.380	$0.638	$0.000	$0.000	23	27	23	27	1	1	1	605	3,863	30,070	605	3,863	30,070
Insulation Rebate		*Gas Heat Homes With Cooling, Combo Customer*	Home with Tier 2 Air Sealing	37	Existing Home Without Air Sealing	60	10	$143	$0	$874	$9.12	16%	4.0	3.3	23	$6.235	$0.623	$0.000	$11.788	62	72	62	72	1	1	1	1,647	10,267	62,902	1,647	10,267	62,902
Insulation Rebate		*Gas Heat Homes With Cooling, Gas Only Customer*	Home with Tier 2 Air Sealing	37	Existing Home Without Air Sealing	60	10	$143	$0	$910	$9.12	16%	4.1	3.4	23	$6.121	$0.612	$0.000	$11.949	47	55	47	55	1	1	1	1,282	7,848	50,025	1,282	7,848	50,025
School Education Kits		***School Education Kits***																				0	0									
School Education Kits		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2017*	1.5 GPM Showerhead	3	Federal Maximum Standard flow rate 2.5 GPM	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.481	$0.148	$33.370	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2017*	1.5 GPM Kitchen Faucet Aerator	1	Federal Maximum Standard flow rate 2.2 GPM	1	10	$1	$0	$1	$9.12	100%	0.2	0.0	0	$3.862	$0.386	$4.173	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2017*	1.0 GPM Bathroom Faucet Aerator	0	Federal Maximum Standard flow rate 2.2 GPM	1	10	$0	$0	$0	$9.12	100%	0.1	0.0	0	$1.773	$0.177	$4.187	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2018*	1.5 GPM Showerhead	3	Federal Maximum Standard flow rate 2.5 GPM	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.525	$0.153	$33.370	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2018*	1.5 GPM Kitchen Faucet Aerator	1	Federal Maximum Standard flow rate 2.2 GPM	1	10	$1	$0	$1	$9.12	100%	0.2	0.0	0	$3.978	$0.398	$4.173	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2018*	1.0 GPM Bathroom Faucet Aerator	0	Federal Maximum Standard flow rate 2.2 GPM	1	10	$0	$0	$0	$9.12	100%	0.1	0.0	0	$1.826	$0.183	$4.187	$0.000	0	0	0	0	1	0	1	0	0	0	0	0	0
School Education Kits		*Provide new 1.5 gpm showerhead to replace existing 2.5 gpm showerhead in home with Unknown DHW heater - 2019*	1.5 GPM Showerhead	3	Federal Maximum Standard flow rate 2.5 GPM	5	10	$3	$0	$3	$9.12	100%	0.1	0.0	2	$1.571	$0.157	$33.370	$0.000	4,667	12,320	4,667	12,320	1	0	1	9,387	42,137	42,137	9,387	42,137	42,137
School Education Kits		*Provide Energy Efficient Kitchen Aerator - 1.5 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2019*	1.5 GPM Kitchen Faucet Aerator	1	Federal Maximum Standard flow rate 2.2 GPM	1	10	$1	$0	$1	$9.12	100%	0.2	0.0	0	$4.097	$0.410	$4.173	$0.000	4,667	12,320	4,667	12,320	1	0	1	1,163	15,886	15,886	1,163	15,886	15,886
School Education Kits		*Provide Energy Efficient Bath Faucet Aerator - 1.0 GPM to replace existing 2.2 gpm aerator in home with Unknown DHW heater - 2019*	1.0 GPM Bathroom Faucet Aerator	0	Federal Maximum Standard flow rate 2.2 GPM	1	10	$1	$0	$1	$9.12	100%	0.1	0.0	0	$1.880	$0.188	$4.187	$0.000	4,667	12,320	4,667	12,320	1	0	1	841	6,327	6,327	841	6,327	6,327
Water Heater Rebate		***Water Heater Rebate***																				0	0									
Water Heater Rebate		*Tank-Type Water Heater - High Draw Pattern (30-50 Gallon)*	High Efficiency Tank-Type Water Heater	25	Minimum Efficiency Tank-Type Water Heater	28	13	$75	$950	$376	$9.12	19%	15.7	12.8	3	$26.638	$2.049	$0.000	$0.000	721	721	721	721	1	1	1	1,895	54,075	270,839	1,895	54,075	270,839
Water Heater Rebate		*Tank-Type Water Heater - Medium Draw Pattern (30-50 Gallon)*	High Efficiency Tank-Type Water Heater	23	Minimum Efficiency Tank-Type Water Heater	26	13	$75	$870	$125	$9.12	56%	4.4	1.9	3	$22.254	$1.712	$0.000	$0.000	263	263	263	263	1	1	1	827	19,725	32,986	827	19,725	32,986
Water Heater Rebate		*Tankless Water Heater - High Draw Pattern*	High Efficiency Tankless Water Heater	17	Minimum Efficiency Tank-Type Water Heater	26	20	$250	$1,071	$862	$9.12	12%	11.4	10.0	8	$12.012	$0.601	$0.000	$0.000	82	82	82	82	1	1	1	683	20,500	70,677	683	20,500	70,677
Water Heater Rebate		*Tankless Water Heater - Medium Draw Pattern*	High Efficiency Tankless Water Heater	17	Minimum Efficiency Tank-Type Water Heater	28	20	$250	$975	$542	$9.12	18%	5.2	4.3	11	$8.796	$0.440	$0.000	$0.000	5	5	5	5	1	1	1	57	1,250	2,710	57	1,250	2,710
Water Heater Rebate		***BUSINESS***	0	0	0	0	0	$0	$0	$0	$9.12	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Self Direct		***Self Direct***																				0	0									
Self Direct		Average Project	New Equipment	12,721	Old or less efficient systems or equipment	17,655	17	$39,471	$0	$148,656	$8.67	27%	3.5	2.6	4,934	$8.000	$0.471	$0.000	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
Heating Efficiency		***Heating Efficiency***																				0	0									
Heating Efficiency		Hot Water Boiler - Non Condensing -Plan A	85% Efficient Boiler	1,810	80% Efficient Boiler	1,924	20	$954	$8,412	$4,792	$8.67	20%	4.9	3.9	113	$8.430	$0.422	$0.000	$0.000	13	15	13	15	1	1	1	1,697	14,308	71,885	1,697	14,308	71,885
Heating Efficiency		Hot Water Boiler - Condensing - Plan A	92% Efficient Boiler	1,807	80% Efficient Boiler	2,056	20	$4,166	$8,669	$10,447	$8.67	40%	4.8	2.9	248	$16.764	$0.838	$0.000	$0.000	16	32	16	32	1	1	1	7,952	133,306	334,300	7,952	133,306	334,300
Heating Efficiency		Hot Water Boiler - Condensing - Plan B	92% Efficient Boiler	784	78% Efficient Boiler	914	20	$6,488	$0	$14,837	$8.67	44%	13.1	7.4	131	$49.668	$2.483	$0.000	$0.000	9	18	9	18	1	1	1	2,351	116,783	267,067	2,351	116,783	267,067
Heating Efficiency		Low Pressure Steam Boiler - Total	84% Efficient Boiler	3,340	80% Efficient Boiler	3,507	20	$5,000	$18,757	$16,500	$8.67	30%	11.4	7.9	167	$29.936	$1.497	$0.000	$0.000	4	6	4	6	1	1	1	1,002	30,000	99,000	1,002	30,000	99,000
Heating Efficiency		High Pressure Steam Boiler - Total	83% Efficient Boiler	3,340	80% Efficient Boiler	3,466	20	$5,000	$20,633	$16,500	$8.67	30%	15.2	10.6	125	$39.915	$1.996	$0.000	$0.000	1	1	1	1	1	1	1	125	5,000	16,500	125	5,000	16,500
Heating Efficiency		Commercial Water Heaters - Total	96% Efficient Storage or 95% Efficient Tankless Water Heater	484	80% Efficient Storage Water Heater	597	15	$943	$7,657	$4,528	$8.67	21%	6.8	5.4	113	$8.372	$0.558	-$313.043	$0.000	33	55	33	55	1	1	1	6,198	51,887	249,032	6,198	51,887	249,032
Heating Efficiency		90% Efficient Furnaces	90% Efficient Furnaces	76	78% Eff Furnace	88	18	$100	$1,866	$1,254	$8.67	8%	12.3	11.3	12	$8.502	$0.472	$0.000	$0.000	1	1	1	1	1	1	1	12	100	1,254	12	100	1,254
Heating Efficiency		92% Efficient Furnaces	92% Efficient Furnaces	76	78% Eff Furnace	90	18	$200	$1,866	$1,342	$8.67	15%	11.3	9.6	14	$14.575	$0.810	$0.000	$0.000	14	20	14	20	1	1	1	274	4,000	26,838	274	4,000	26,838
Heating Efficiency		94% Efficient Furnaces	94% Efficient Furnaces	76	78% Eff Furnace	92	18	$250	$1,866	$1,429	$8.67	17%	10.5	8.7	16	$15.942	$0.886	$0.000	$0.000	21	25	21	25	1	1	1	392	6,250	35,737	392	6,250	35,737
Heating Efficiency		96% Efficient Furnaces	96% Efficient Furnaces	76	78% Eff Furnace	94	18	$300	$1,866	$1,517	$8.67	20%	9.9	8.0	18	$17.004	$0.945	$0.000	$0.000	64	90	64	90	1	1	1	1,588	27,000	136,536	1,588	27,000	136,536
Heating Efficiency		Non-Condensing Power Vent (83% efficiency)	Non-condensing power vent unit heater	272	Non-condensing standard forced-air unit heater	283	20	$84	$1,179	$227	$8.67	37%	2.6	1.6	10	$8.258	$0.413	$0.000	$0.000	3	5	3	5	1	1	1	51	422	1,135	51	422	1,135
Heating Efficiency		Condensing (>90% efficiency)	Condensing power vent unit heater	251	Non-condensing standard forced-air unit heater	283	20	$778	$1,179	$1,407	$8.67	55%	5.2	2.3	31	$24.775	$1.239	$0.000	$0.000	7	10	7	10	1	1	1	314	7,778	14,069	314	7,778	14,069
Heating Efficiency		Infrared	Infrared heater	247	Non-condensing standard forced-air unit heater	283	15	$115	$1,179	$270	$8.67	43%	0.9	0.5	35	$3.268	$0.218	$0.000	$0.000	9	11	9	11	1	1	1	387	1,265	2,974	387	1,265	2,974
Heating Efficiency		Custom Boiler - Total	Various	33,226	Various	34,951	18	$8,625	$222,537	$55,410	$8.67	16%	3.7	3.1	1,725	$5.000	$0.278	$0.000	$0.000	2	2	2	2	1	1	1	3,450	17,250	110,819	3,450	17,250	110,819
Heating Efficiency		Boiler Tune up - Total	Boiler Tune-up - 2% additive improvement in efficiency, Boiler now at 80% efficiency for non-condensing; 0.8% additive improvement in efficiency, Boiler now at 88% average annual operating efficiency for condensing	5,401	boiler Poorly functioning at 78% efficiency for non-condensing, 98.2% for cor	5,538	2	$63	$0	$250	$8.67	25%	0.2	0.2	138	$0.454	$0.227	$0.000	$0.000	213	438	213	438	1	1	1	60,237	27,375	109,500	60,237	27,375	109,500
Heating Efficiency		Outdoor Air Reset - Total	83% Efficient Boiler	1,044	80% Efficient existing boiler	1,083	20	$200	$0	$1,004	$8.67	20%	3.0	2.4	39	$5.110	$0.256	$0.000	$0.000	18	18	18	18	1	1	1	704	3,600	18,081	704	3,600	18,081
Heating Efficiency		Stack Dampers - Total	81% Efficient Boiler	10,745	80% Efficient existing boiler	10,879	12	$128	$0	$1,209	$8.67	11%	1.0	0.9	134	$0.955	$0.080	$0.000	$0.000	7	10	7	10	1	1	1	1,343	1,283	12,087	1,343	1,283	12,087
Heating Efficiency		Modulating Burners - Total	83% Efficient Boiler	5,595	80% Efficient existing boiler	5,805	20	$3,067	$0	$11,619	$8.67	26%	6.4	4.7	210	$14.619	$0.731	$0.000	$0.000	9	12	9	12	1	1	1	2,518	36,810	139,433	2,518	36,810	139,433
Heating Efficiency		Turbulators - Totals	83% Efficient Boiler	2,005	80% Efficient existing boiler	2,080	20	$239	$0	$1,031	$8.67	23%	1.6	1.2	75	$3.179	$0.159	$0.000	$0.000	1	2	1	2	1	1	1	150	478	2,062	150	478	2,062
Heating Efficiency		O2 Trim Control - Totals	82% Efficient Boiler	20,018	80% Efficient existing boiler	20,518	20	$1,046	$0	$4,185	$8.67	25%	1.0	0.7	500	$2.090	$0.105	$0.000	$0.000	1	1	1	1	1	1	1	500	1,046	4,185	500	1,046	4,185
Heating Efficiency		Steam Traps - Total	New Steam Traps	1,596	Existing Boiler, malfunctioning steam traps	1,640	5	$50	$0	$263	$8.67	19%	0.7	0.6	44	$1.130	$0.226	$0.000	$0.000	20	310	20	310	1	1	1	13,717	15,500	81,601	13,717	15,500	81,601
Heating Efficiency		Pipe Insulation - Total	100 ft of pipe with new insulation	10	100 ft of pipe with no or old insulation	93	13	$1,248	$0	$2,715	$8.67	46%	3.8	2.0	83	$15.120	$1.163	$0.000	$0.000	87	87	87	87	1	1	1	7,182	108,587	236,181	7,182	108,587	236,181
Heating Efficiency		Heating System Optimization Study - Total	implement recommended measures	21,177	Existing system	21,880	7	$10,064	$0	$14,933	$8.67	67%	2.5	0.8	702	$14.329	$2.047	$0.000	$0.000	2	2	2	2	1	1	1	1,405	20,128	29,866	1,405	20,128	29,866
Heating Efficiency		Recommissioning Study Allocation	Efficient equipment as identified in a recommissioning study	0	Existing equipment	0	0	$5,597	$0	$15,379	$8.67	36%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	1	1	1	1	1	1	1	0	5,597	15,379	0	5,597	15,379
Heating Efficiency		Ozone Washer Extractor	New ozone laundry system(Venturi Injection or Bubble Diffusion) is added-on to new or existing commercial washing machine using hot water heated with natural gas	55	w or existing commercial washing machine using hot water heated with natural	287	10	$2,652	$0	$9,777	$8.67	27%	3.1	2.3	233	$11.401	$1.140	$1,113.998	$0.000	18	39	18	39	1	1	1	9,071	103,414	381,310	9,071	103,414	381,310
RESIDENTIAL		***RESIDENTIAL***																														
LI Home Energy Squad		***LI Home Energy Squad***																				0	0									
LI Home Energy Squad		Total LI Energy Squad Service 2017	Weighted Average of 2017 LI Squad Services	14	Existing Home	15	10	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	2	$0.000	$0.000	$6.999	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
LI Home Energy Squad		Total LI Energy Squad Service 2018	Weighted Average of 2018 LI Squad Services	14	Existing Home	15	10	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	2	$0.000	$0.000	$6.999	$0.000	0	0	0	0	1	1	1	0	0	0	0	0	0
LI Home Energy Squad		Total LI Energy Squad Service 2019	Weighted Average of 2019 LI Squad Services	14	Existing Home	15	10	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	2	$0.000	$0.000	$6.999	$0.000	1,500	6,211	1,500	6,211	1	1	1	9,839	0	0	9,839	0	0
Energy Star Retail Products		***Energy Star Retail Products***	0	0	0	0	0	$0	$0	$0	$8.67	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!					0	0				0	0	0	0	0	0
Energy Star Retail Products		~~Gas Clothes Dryers A~~	~~ENERGY STAR ®~~	~~2~~	~~Industry Standard~~	~~3~~	~~12~~	~~$45~~	~~$0~~	~~$244~~	~~$9.12~~	~~19%~~	~~53.6~~	~~43.7~~	~~1~~	~~$90.457~~	~~$7.538~~	~~$0.000~~	~~$0.000~~	~~75~~	~~75~~	~~0~~	~~0~~	~~1~~	~~1~~	~~1~~	~~75~~	~~3,414~~	~~18,447~~	0	0	0
BUSINESS		***BUSINESS***																														
Energy Information Systems		***Energy Information Systems***																														
Energy Information Systems		Energy Information System	New Energy Information System	0	No EIS	0	5	$1,080	$0	$3,600	$8.67	30%	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	$0.000	$0.000	3	3	3	3	1	1	1	0	3,240	10,800	0	3,240	10,800
Energy Information Systems		Behavioral and Operational Measures	Efficient behavior/operations	48,707	Less efficient behavior/operations	48,951	1	$1,224	$0	$0	$8.67	#DIV/0!	0.0	-10.1	245	$5.000	$5.000	-$2,000.000	$0.000	5	5	5	5	1	1	1	1,224	6,119	0	1,224	6,119	0
Energy Information Systems		Behavioral and Operational Measures	Efficient behavior/operations	-38,965	Less efficient behavior/operations	-39,161	1	$0	$0	$0	$8.67	#DIV/0!	0.0	0.0	-196	$0.000	$0.000	$1,600.000	$0.000		5	0	5	1	1	1	-979	0	0	-979	0	0
Energy Information Systems		Retrocommissioning Measures	Optimized Building Systems	48,689	Non-optimized Building Systems	48,951	7	$1,310	$0	$1,955	$8.67	67%	0.1	0.0	262	$5.000	$0.714	$4,528.077	$11,239.410	5	17	5	17	1	1	1	4,323	21,616	32,254	4,323	21,616	32,254
RESIDENTIAL		***RESIDENTIAL***																														
Thermostat Optimization		***Thermostat Optimization***																														
Thermostat Optimization		~~*Install Energy Star certified smart thermostat - AC & GAS*~~	~~Average Single Family House with EnergyStar Smart Thermostat~~	~~80.3160~~	~~Average Single Family House with Standard Thermostat~~	~~87.3000~~	~~10~~	~~$31~~	~~$50~~	~~$200~~	~~$9.12~~	~~16%~~	~~3.1~~	~~2.4~~	~~7~~	~~$7.159~~	~~$0.716~~	~~$0.000~~	~~$0.000~~	~~#########~~	~~2,789~~	~~2,789~~	~~2,789~~	~~1~~	~~1~~	~~1~~	~~19,476~~	~~87,006~~	~~557,731~~	0	0	0
Thermostat Optimization		~~*Install Energy Star certified smart thermostat - GAS ONLY*~~	~~Average Single Family House with EnergyStar Smart Thermostat~~	~~80.3160~~	~~Average Single Family House with Standard Thermostat~~	~~87.3000~~	~~10~~	~~$50~~	~~$50~~	~~$200~~	~~$9.12~~	~~25%~~	~~3.1~~	~~2.4~~	~~7~~	~~$7.159~~	~~$0.716~~	~~$0.000~~	~~$0.000~~	~~379~~	~~379~~	~~379~~	~~379~~	~~1~~	~~1~~	~~1~~	~~2,650~~	~~18,970~~	~~75,882~~	0	0	0
BUSINESS		***BUSINESS***																														
Commercial Refrigeration Efficiency		***Commercial Refrigeration Efficiency***																														
Commercial Refrigeration Efficiency		Faucet Aerator (Restroom), gas water heating	.5 gallons per minute restroom faucet aerator	3	2.2 gallons per minute faucet	11	10	$7	$0	$7	$8.67	100%	0.1	0.0	8	$0.829	$0.083	$57.732	$0.000	11	42	11	42	1	1	1	339	281	281	339	281	281
Commercial Refrigeration Efficiency		Faucet Aerator (Kitchen), gas water heating	1.5 gallons per minute kitchen faucet aerator	3	2.2 gallons per minute faucet	5	10	$7	$0	$7	$9.12	100%	0.3	0.0	2	$4.123	$0.412	$8.436	$0.000	1	3	1	3	1	1	1	5	20	20	5	20	20
Commercial Refrigeration Efficiency		CHW Pre-Rinse Sprayer - gas water heating	1.28 gallons per minute sprayer	8	1.60 gallons per minute sprayer	9	5	$45	$0	$45	$9.12	100%	1.4	0.0	2	$23.686	$4.737	$13.971	$0.000	1	3	1	3	1	1	1	6	135	135	6	135	135
Commercial Refrigeration Efficiency		Retrofit of open multi-deck cooler cases with solid glass doors (per linear foot of case)	Closed Case with Doors	1	Open Case with No Doors	8	12	$50	$0	$261	$9.12	19%	4.3	3.4	7	$7.461	$0.622	$0.000	$0.000	19	75	19	75	1	1	1	503	3,750	19,549	503	3,750	19,549
Commercial Refrigeration Efficiency		Retrofit of open multi-deck freezer cases with solid glass doors (per linear foot of case	Closed Case with Doors	2	Open Case with No Doors	10	12	$75	$0	$155	$9.12	49%	2.1	1.1	8	$9.074	$0.756	$0.000	$0.000	19	75	19	75	1	1	1	620	5,625	11,589	620	5,625	11,589
Commercial Refrigeration Efficiency		Demand Controlled Ventilation - Gas Only or Combo Customer	Commercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HP Motor	4,267	ercial kitchen ventilation hoods with Demand Controlled Ventilation with 8.65 HI	4,634	20	$2,163	$0	$17,360	$9.12	12%	3.8	3.4	366	$5.907	$0.295	$0.000	$1,171.381	0	0	0	0	1	1	1	0	0	0	0	0	0
RESIDENTIAL		***RESIDENTIAL***																				0	0									
Residential Demand Response		***Residential Demand Response***																														
Residential Demand Response	MN - Smart Thermostat - EE - Direct Install	Direct Install Smart Thermostat EE - Gas Heating Combo Customer	Average Single Family House with EnergyStar Smart Thermostat	80	Average Single Family House with Standard Thermostat	87	10	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	7	$0.000	$0.000	$0.000	$0.000	0	0	3,250	3,250	1	1	1	0	0	0	22,698	0	0
Residential Demand Response	MN - Smart Thermostat - EE - Direct Install	Direct Install Smart Thermostat EE - Gas Heating Gas Only Customer	Average Single Family House with EnergyStar Smart Thermostat	80	Average Single Family House with Standard Thermostat	87	10	$0	$0	$0	$9.12	#DIV/0!	0.0	0.0	7	$0.000	$0.000	$0.000	$0.000	0	0	750	750	1	1	1	0	0	0	5,238	0	0
Residential Demand Response	MN - Smart Thermostat - EE - Self Install	BYOT EE - Gas Heating Combo Customer	Average Single Family House with EnergyStar Smart Thermostat	80	Average Single Family House with Standard Thermostat	87	10	$31	$0	$134	$9.12	23%	2.1	1.6	7	$4.467	$0.447	$0.000	$0.000	0	0	1,750	1,750	1	1	1	0	0	0	12,222	54,600	234,780
Residential Demand Response	MN - Smart Thermostat - EE - Self Install	BYOT EE - Gas Heating Gas Only Customer	Average Single Family House with EnergyStar Smart Thermostat	80	Average Single Family House with Standard Thermostat	87	10	$50	$0	$225	$9.12	22%	3.5	2.7	7	$7.159	$0.716	$0.000	$0.000	0	0	400	400	1	1	1	0	0	0	2,794	20,000	90,000

Product: Multifamily Building Efficiency

Description:

Multifamily buildings that are electric customers and either Xcel Energy or CenterPoint Energy natural gas customers can receive an energy assessment and direct-install measures they are eligible for based on the assessment at no-cost. Those customers will also be eligible to participate in larger, capital-intensive projects that will offer them increasing rebates for higher-levels of whole building savings achieved.

Program References:

Measure "Direct Install - CFL"	Refer to Product "MN Home Energy Squad" formulas (Customer kW, Customer kWh, Customer PCkW, etc.) and values (hours and wattages) for the "Replace incandescent lamps with CFLs" measure.
Measure "Direct Install - LED"	Refer to Product "MN Lighting Efficiency" formulas for (Customer kW, Customer kWh, Customer PCkW, etc.) and values (hours and wattages) for the "Replace incandescent lamps with LEDs" measure.
~~Measure "Direct Install - LED Exit Sign"~~	~~Refer to Product "MN Lighting Efficiency" formulas for (Customer kW, Customer kWh, Customer PCkW, etc.) and values (hours and wattages) for the "Exit sign retrofit and replacement" measure.~~
Measures "Showerhead", "Aerator Kitchen", and "Aerator Bathroom"	Refer to Product "MN Energy Efficient Showerhead" analyses for assumptions on water temperatures and flows and energy savings calculations. Savings values are adjusted for multi-family water usage in Table 2.
~~Measure "Water Heater Blanket"~~	~~Refer to Product "MN Home Energy Squad" formulas (Customer kW, Customer kWh, Customer PCkW, etc.) and values (Efficiencies, Temperatures, R-Values) for the "Install Water Heater Blanket" measure. Savings have been adjusted for average multi-family water heater size.~~
Measures "Renter Kits 9W LED" and "Renter Kits 11W LED"	Refer to Product "MN Home Lighting" formulas for (Customer kW, Customer kWh, Customer PCkW, etc.) and values (hours and wattages)
Measure "Weatherstripping"	Refer to Product "MN Home Energy Squad" formulas and values.

~~Performance Building Measure Description:~~

~~This is a custom measure for buildings including electric and gas measures. Customers will be encouraged to pursue energy-efficiency opportunities identified through the energy assessment process with the Implementer. These opportunities don't have to be existing prescriptive measures, but they must be identified as energy-saving measures. Xcel Energy & CenterPoint (as needed) will review and approve proposed opportunities and savings levels before projects begin at Customer buildings. The rebate amounts paid to the Customers will depend upon the savings tier reached, which is dependent upon the amount of whole-building savings (BTU) achieved.~~

Equations:

~~Water Heater Blanket Electrical Energy Savings (Customer kWh)~~	~~= (HLF before_MF - HLF with blanket_MF) x 8760 / HE_Elec / 3412 = 527 kWh~~
~~Water Heater Blanket Electrical Demand Savings (Customer kW)~~	~~= (HLF before_MF - HLF with blanket_MF) x 8760 / HE_Elec / 3412 / Hr Operation = 0.060 kW~~
~~Water Heater Blanket Gas Savings (Customer Dth)~~	~~= (HLF before_MF - HLF with blanket_MF) x 8760 / HE_Gas / 1,000,000 = 2.1 Dth~~
Water Heater Setback kWh Savings	= Specific_Heat * Density * Gal_Person * People * Households * 365 * (Tset -Tin) * Savings_Factor/ Eff / 3412
Water Heater Setback kW Savings	= kWh_Savings / 8760
Water Heater Setback PCkW Savings	= kW_Savings * CF
Water Heater Setback Dth Savings	= Specific_Heat * Density * Gal_Person * People * Households * 365 * (Tset -Tin) * Savings_Factor/ Eff / 1,000,000
Power Strip kWh Savings	= kWh_Base * SF
Power Strip kW Savings	= kWh_Savings / HOU
Power Strip PCkW Savings	= kW_Savings * CF
Renter Kit Window Film Dth Savings	=1 .08 * 24 * HDD65 * CorrF * (CFM50 / NHEAT) / (AFUE * 1,000,000)

Variables:

~~HLF_before~~	~~227~~	~~Heat Loss Factor of water heater based on a water heater tank without fiberglass insulation and constant water temperature of 125 F and a room temperature of 60 F. This has been adjusted by the ratio of the multi-family (2-4) units average tank size from RECS 2009 data for Minnesota's region to the average size using all homes in the region. This ratio is 40.45/42.21 for Minnesota. This accounts for the fact that multi-family homes have smaller water heaters.~~
~~HLF_with_blanket~~	~~132~~	~~Heat Loss Factor of water heater with an added 2.5" fiberglass insulation on a water heater tank with 2" fiberglass insulation and constant water temperature of 125 F and a room temperature of 60 F. This has been adjusted by the ratio of the multi-family (2-4) units average tank size from RECS 2009 data for Minnesota's region to the average size using all homes in the region. This ratio is 40.45/42.21 for Minnesota. This accounts for the fact that multi-family homes have smaller water heaters.~~
Specific_Heat	1	Specific heat of water (Reference 3)
Density	8.34	Lbs per gallon of water (Reference 3)
Gal_Person	18.7	Daily Hot Water Usage per Person (Reference 3)
People	2.17	Number of households in the multi-family building
Households	Customer Input	Number of households served by the water heater(s)
Tset	Customer Input	Temperature of the water heater tank before setback
Tin	51.3	Average groundwater temperature for the Twin Cities (Reference 3)
Savings_Factor	4%	Average of 3-5% savings (Reference 3)
Eff	Table 3	Federal minium Energy Factor for 40 gal tank (Reference 3)
CF	Table 4	Peak coincidence factor (Reference 3)
Lifetime	Table 4	Life of measure (Reference 3)
kWh_Base	365	Annual average consumption of baseline power strip (Reference 3)
SF	19%	Savings Factor (Reference 3)
HOU	6,588	Hours of use (Reference 3)
HDD65	7,651	HDD65 for Twin Cities (Reference 3)
CorrF	0.7	Correction factor (Reference 3)

CFM50	10	Assumed
NHEAT	13	Assumed 3 story building in well shielded area (Reference 3)
AFUE	80%	Efficiency of gas heating system (Reference 3)

Table 1 - Typical Lighting Hour Usage by Common Area Space Type

Common-Area Space Type	Hours of Use	Coincidence Factor
Hallway	7,884	0.86
Stairway	7,884	0.86
Lobby/Atrium	7,884	0.86
Management Office	3,317	0.70
Laundry Room	4,154	0.72
Community/Event Room	2,431	0.72
Fitness Area	2,366	0.72
Storage Area	3,441	0.72
Mechanical Rooms	2,692	0.72
Safety or Code Required	8,760	1.00
Pool/Spa Area	4,468	0.72
Parking Lot/Exterior	4,903	0.00

Table 2	Showerhead	Kitchen Aerator	1.0 GPM Bathroom Aerator	0.5 GPM Bathroom Aerator
GPY_DHW_Savings	3,383	547	407	577
Total Water Savings/Year - Gallons	4,656	637	560	794
O&M Savings	$39.46	$5.40	$4.75	$6.73

Table 3	Eff
Electric Water Heater	0.92
Gas Water Heater	0.59

Table 4	Water Heater Setback	Power Strip	Renter Kit Window Film
CF	100%	83%	n/a
Measure Lifetime	2	7	1

References:

1. "Minnesota Multifamily Rental Characterization Study", Prepared for Minnesota Department of Commerce, Division of Energy Resources, Prepared by Energy
2. Residential Energy Consumption Survey, 2009, US Energy Information Administration.
3. Minnesota TRM v3.0, http://mn.gov/commerce-stat/pdfs/mn-trm-v3.0.pdf

Product: Peak Partner Rewards

Description:

Program for business customers that reduce their electrical load by an agreed upon amount when the electric grid experiences peak demand periods.

Algorithms:

Gross kW saved at Customer	= kW_Commitment
Gross Generator kW	= kW_Commitment x Coincidence_Factor
Gross Annual kWh Saved at Customer	= kW_Commitment x Control_Hours

Variables:

kW_Commitment	Customer Input	Customer's average electrical load reduction during summer months
Coincidence_Factor	100%	Percentage of Customer_kW savings that will coincide with peak summer kW savings
Control_Hours	6	Estimated number of control hours called per year
Lifetime	1	Average contract duration

Inputs:	**Verified during M&V:**
kW_Commitment	Yes
Control_Hours	Yes

References:

Control hours based on MN NSP Interruption history for last 5-years

Changes from Recent Filing:

Not Applicable

Program: Residential Demand Response (Saver's Switch - Residential - MN)

Description:

Prescriptive rebates will be offered to residential customers who install a Smart Thermostat on their air conditioning and allow utilty access for demand response. Residential electric, gas, and combo customers can receive a rebate for installing an Energy Star certified smart thermostat.

Algorithms:

STDR Electrical Demand Savings (Customer kW)	= I_Qty_Prop_Equip * Eq.kW_Savings_STDR
STDR Electrical Energy Savings (Customer kWh)	= I_Qty_Prop_Equip * Eq.kWh_Savings_STDR
STDR Peak Coincident kW at the Customer (PC_KW_CUST)	= I_Qty_Prop_Equip * Eq.PC_kW_Customer_STDR
Eq.kW_Savings_STDR	= tons/EER * 12
ENERGY STAR Smart Thermostat	= Cooling kW * (ES_Reduction_Cooling)
ENERGY STAR Smart Thermostat	= Cooling kW * (ES_Reduction_Cooling) * Cooling Hours
ENERGY STAR Smart Thermostat	= Cooling kW * (ES_Reduction_Cooling) * EnergyStar_CF
ENERGY STAR Smart Thermostat Gas	= Baseline Dth * (ES_Reduction_Heating)
Water Heater Electrical Demand Savings	= I_Qty_Prop_Equip * Eq.kW_Savings_WH
Electrical Energy Savings (Customer	= I_Qty_Prop_Equip * Eq.kWh_Savings_WH
Peak Coincident kW at the Customer	= I_Qty_Prop_Equip * Eq.PC_kW_Customer_WH

Variable ID	Value	Description
I_Qty_Prop_Equip	Customer Input	Quantity of smart thermostats installed.
tons	2.28	Capacity of average residential AC Unit in tons.
EER	11.39	Energy Efficiency Ratio (EER) of average residential AC Unit.
Eq.kWh_Savings_STDR	2	kWh savings per year per average residential AC Unit with a smart thermostat (Reference 2 & 4).
Eq.PC_kW_Customer_STDR	1.134	Peak Coincident kW savings per average residential AC Unit with a smart thermostat (Reference 1).
Life_ResST	10	Length of time the smart thermostat will be operational.
NTG_DR	100%	Net-to-Gross factor for Smart Thermostats will be 100% as customers would not voluntary dispatch control events in the absence of this program
ES_Reduction_Heating	8%	Energy Star Connected Thermostat criteria for annual heating equipment runtime reduction (Reference 7)
ES_Reduction_Cooling	10%	Energy Star Connected Thermostat criteria for annual cooling equipment runtime reduction (Reference 7)
Cooling kW	3.008	Forecasted High Efficiency Thermostat demand from 'Home Energy Squad - MN'
Cooling Hours	442	Forecasted High Efficiency Thermostat hours from 'Home Energy Squad - MN'
Baseline Dth	87.3	Forecasted High Efficiency Thermostat gas use from 'Home Energy Squad - MN'
Heating kW	5.374	Average kW for electric heating
Heating Hours	3,808	Annual heating hours
EnergyStar_CF	76%	Coindicence Factor for High Efficiency Thermostat from 'Home Energy Squad - MN'
Measure Life	10	Measure life for programmable thermostat (Reference 8)
Incremental Cost	$200.00	Incremental cost for ENERGY STAR smart thermostat (Reference 8)
Eq.kW_Savings_WH	4.500	Average size of residential water heater.
Eq.kWh_Savings_WH	3	kWh savings per year per average residential WH Unit with a smart switch.
Eq.PC_kW_Customer_WH	0.200	Peak Coincident kW savings per average residential WH Unit with a smart switch (Reference 3).

Inputs:

Provided by Customer:	Verified during M&V:
Number of units with smart (Tier I orll) thermostats installed.	Yes
Will you allow DR	Yes
Are you a Combo or Electric Customer	Yes
Single Family Home	Yes
Central AC	Yes
Gas or Electric Resistance Heat	Yes

Certified Energy Star Connected	Yes

Assumptions:

Demand Response savings are calculated at system peaking conditions of 95 degree Fahrenheit dry bulb.
All EE components use the State's TRM estimates for energy with no demand savings
All DR energy and demand savings utilized Nexant Study

Single family home with central AC and gas or electric resistance heat.
Thermostat is a certified Energy Star product and meets all the criteria listed in Energy Star Product Specification for Connected Thermostat Products, Version 1.0, Rev Jan 2017.
Limit one per household.

References:

(1) Nexant, 2017. Evaluation of 2016 Smart Thermostat Pilot.
(2) Xcel Energy, January 2016. Saver's Switch Control History.
(3) Minnesota Technical Reference Manual Ver. 2.0
(4) Xcel Energy, January 2016. Typical MN Residential Smart Switch Load Relief 2011-2015.
(5) Xcel Energy, 2017-19 DSM Filing.
(6) 2015 Residential Energy Consumption Survey (RECS) via US Energy Information Administration
(7) ENERGY STAR Connected Thermostat Key Product Criteria, Version 1.0, Rev. Jan 2017 - https://www.energystar.gov/products/heating_cooling/smart_thermostats/key_product_criteria
(8) State of Minnesota Technical reference Manual For Energy Conservation Improvement Programs, Version 2.2 FINAL, May 2, 2018. http://mn.gov/commerce-stat/pdfs/mn-trm-v2.2.pdf

Product: MN - Water Heating

Description:

Residential natural gas customers receive a cash rebate for purchasing high-efficiency natural gas water heating equipment. Residential electric customers with standard electric water heaters can receive a rebate for replacing it with a heat pump water heater.

Equations:

Hot_Water_Energy (Tank-type)	= Qty x Hot_Water_Demand x Water_Heater_Delta_T x Days_Per_Year x Water_Density x Proposed_Tank_Size / Std_Tank_Size
Hot_Water_Energy (Tankless)	= Qty x Hot_Water_Demand x Water_Heater_Delta_T x Days_Per_Year x Water_Density
Water_Heater_Delta_T	= Water_Heater_Temperature - City_Mains_Temperature

Gas Equations:

Customer_Dth	= Baseline_Dth - Proposed_Dth
Baseline_Dth	= Hot_Water_Energy / Baseline_Eff_Gas / 1,000,000
Proposed_Dth	= Hot_Water_Energy / Proposed_Eff / 1,000,000
Baseline Efficiency Gas-Fired Storage WH	= coef1 - (coef2 x Proposed_Tank_Size)

Electric Equations:

Customer kWh	= Baseline_kWh - Proposed kWh + Cooling_Benefit - Heating_Penalty
Baseline_kWh	= Hot_Water_Energy / Baseline_Eff_Electric / 3,412
Proposed_kWh	= Hot_Water_Energy / Proposed_Eff / 3,412
Baseline Efficiency Electric-Resistance Storage WH	= coef1 - (coef2 x Proposed_Tank_Size)
Customer kWh	= Baseline_kW - Proposed_kW
Baseline_kW	= Standard_Water_Heater_kW + Cooling_Benefit / Cooling_Hours
Proposed_kW	= Standard_Water_Heater_kW - (Baseline_kWh - Proposed_kWh) / 8760
Customer_PCkW	= Customer_kW x Coincidence_Factor

Variable ID	Value	Description
Hot_Water_Demand	64.3	Average gallons per day of hot water use. (Reference 1)
Water_Heater_Temperature	135	Water heater setpoint temperature °F. (Reference 1)
City_Mains_Temperature	51.9	Water temperature of city water entering the water heater °F. (Reference 2)
Conversion from Btu to Dth	1,000,000	1 Dth = 1,000,000 Btuh
Conversion from Btu to Therm	100,000	1 Therm = 100,000 Btuh
Conversion from Btu to kWh	3,412	1 kWh = 3,412 Btuh
Specific Heat of Water	1	Btu/lb/°F
Water_Density	8.33	lb/gal H20
Days_Per_Year	365	Days per Year
Heating_Penalty	See Table 1	Heating penalty due to heat pump water heater operating during heating season.
Cooling_Benefit	See Table 1	Cooling savings due to heat pump water heater operating during cooling season.
Standard_Water_Heater_kW	4.5	Assumed kW for a typical electric resistance water heater.
Cooling_Hours	663	Number of hours in a TMY3 year above 77°F.
Coincidence_Factor	100%	We are using the average water heater savings over the summer hours.
Proposed_Tank_Size	Customer Input	Storage capacity for tank type water heaters.
Type of Proposed Water Heater	Customer Input	Type of proposed water heater. (i.e. Storage, Tankless, Heat Pump)
Home Heating and Cooling Type for HP Water Heaters	Customer Input	Source for the home's heating and cooling. See Table 1.
Proposed_Eff	Customer Input	Uniform Efficiency Factor for proposed water heater.
Qty	Customer Input	Equipment Quantity
Measure Life	See Table 2	Lifetime of water heaters. (Reference 3)
Incremental Costs	See Table 2	Incremental cost of efficient technology over baseline technology.
NTG	See Table 2	Net to Gross
coef1	See Table 3	Code-based formula coefficients to determine baseline energy use
coef2	See Table 3	Code-based formula coefficients to determine baseline energy use
Std_Tank_Size	45.0	Reference tank volume storage capacity based on historical program participation.
Water Heater Self-Installation Rate	52%	Percent of Water Heaters that self-installed after retail purchase (Reference 9)

Table 1 - Secondary Cooling and Heating Benefits (References 6, 7)

Heating Type	Cooling Type	Cooling_Benefit kWh	Heating_Penalty kWh	O&M $
Natural Gas	Refrigerant Based	61.5	0	$ (65.17)

Electric Resistance	Refrigerant Based	61.5	1,634	$	-
Heat Pump	Refrigerant Based	61.5	724	$	-
Natural Gas	Non-Refrigerant Based	0.0	0	$	(65.17)
Electric Resistance	Non-Refrigerant Based	0.0	1,634	$	-
Heat Pump	Non-Refrigerant Based	0.0	724	$	-

Table 2 - Incremental Cost, Lifetime, NTG - References 3, 10

Water Heater Type	Size	Draw Pattern	Baseline Cost	Incremental Cost	Lifetime	NTG
High Efficiency Tank-Type Water Heater	Volume <= 40 Gallon	MEDIUM	$ 906.99	$ 126.88	13	90%
High Efficiency Tank-Type Water Heater	Volume <= 40 Gallon	HIGH	$ 833.02	$ 260.86	13	90%
High Efficiency Tank-Type Water Heater	Volume > 40 Gallon	MEDIUM	$ 714.09	$ 119.30	13	90%
High Efficiency Tank-Type Water Heater	Volume > 40 Gallon	HIGH	$ 958.42	$ 384.34	13	90%
High Efficiency Tankless Water Heater	N/A	MEDIUM	$ 975.06	$ 541.99	20	90%
High Efficiency Tankless Water Heater	N/A	HIGH	$ 1,071.37	$ 861.92	20	90%
Air Source Heat Pump Water Heater	N/A	NA	$ 958.62	$ 611.45	10	100%

Table 3 - Baseline Efficiency Coefficients Reference 8 (>= 20gal & <= 55 gal)

Draw Pattern	Gas (Storage)		Elec (Storage)	
	coef1	coef2	coef1	coef2
Medium	0.6483	0.0017	0.9307	0.0002
High	0.6920	0.0013	0.9349	0.0001

References:

1. Energy Conservation Program for Consumer Products: Test Procedure for Water Heaters; United States Department of Energy; http://www.gpo.gov/fdsys/pkg/FR-1998-05-11/pdf/98-12296.pdf

2. Denver Water's 2006 Treated Water Quality Summary Report;
3. Energy Star Residential Water Heaters -Final Criterial Analysis, April 2008.
http://www.energystar.gov/ia/partners/prod_development/new_specs/downloads/water_heaters/WaterHeaterAnalysis_Final.pdf
4. Not Used
5. US Department of Energy; Residential Heat Pump Water Heaters;
http://energy.gov/eere/femp/covered-product-category-residential-heat-pump-water-heaters
6. US Department of Energy; Residential Air Conditioners and Heat Pumps; http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/75
7. US Department of Energy; Residential Furnace Standards. https://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/72#standards
8.US Department of Energy, Residental Water Heater Standards 10 CFR 430.32(d):
9. EnergyStar - http://aceee.org/sites/default/files/files/pdf/conferences/hwf/2016/Ryan_Session1C_HWF16_2.22.16_0.pdf
10. Equipment Manufacturer Retail Price Information Request (Q4 - 2017)
11. NREL - National Residential Efficiency Measure Database, https://remdb.nrel.gov/measures.php?gld=6&ctld=270

Product: Whole Home Efficiency

Description:

Residential natural gas and electric combo customers receive a cash rebate for implementing multiple energy efficiency improvements. Customers must have at least 20 LEDs (new or installed), and complete attic insulation and bypass sealing, and air sealing and weatherization measures to receive rebate.

Algorithms:

Measure "Direct Install - LED"	Refer to Product "Home Lighting & Recycling - MN" formulas for Customer kW, Customer kWh, Customer PCkW, etc. for the "Replace incandescent lamps with LEDs" measure.
Measures "Attic Insulation", "Air Sealing", and "Wall Insulation"	Refer to Program "Insulation Rebates - MN" formulas for Customer kW, Customer kWh, Customer PCkW, etc., and other energy savings calculations for the "Attic Insulation", "Air Sealing", and "Wall Insulation" measures
Measures "Showerhead", "Aerator Kitchen", and "Aerator Bathroom"	Refer to Product "Energy Efficient Showerhead - MN" formulas for Customer kW, Customer kWh, Customer PCkW, and other energy savings calculations.
Measure "Water Heater Blanket"	Refer to Product "Home Energy Squad - MN" formulas for Customer kW, Customer kWh, Customer PCkW, Customer Dth, etc. and other energy savings calcualtions for the "Install Water Heater Blanket" measure.
Measure "Install and Program New Thermostat"	Refer to Product "Home Energy Squad - MN" formulas for Customer kW, Customer kWh, Customer PCkW, Customer Dth, etc. and other energy savings calcualtions for the "Install and Program New Thermostat" measures.
Measures "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace"	Refer to Product "MN Heating System Rebate" formulas for Customer kW, Customer kWh, Customer PCkW, Customer Dth, etc. and other energy savings calcualtions for the "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace" measures.
Measures "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC"	Refer to Product "MN Residential Cooling" formulas for Customer kW, Customer kWh, Customer PCkW, etc. and other energy savings calcualtions for the "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC" measures.
Measures "Energy Star Clothes Washer"	Refer to Product "Energy Star New Homes - MN" formulas for Customer kW, Customer kWh, Customer PCkW, Customer Dth, etc. and other energy savings calcualtions for the "Energy Star Clothes Washer" measures
Measure "Energy Star Refrigerator"	Refer to Program "Refrigerator Recycling - MN" formulas for Customer kW, Customer kWh, Customer PCkW, etc. for the "Energy Star Refrigerator" measure.
Measures "Storage Water Heater" and "Tankless Water Heater"	Refer to Program "MN Water Heater Rebate" formulas for Customer Dth, etc. for the "Storage Water Heater" and "Tankless Water Heater" measures.
Measure "Heat Pump Water Heater"	Refer to Program "MN Water Heater Rebate" formulas for Customer kW, etc. for the "Heat Pump Water Heater" measure.
Measure "Direct Install - LED"	Refer to Product "Home Lighting & Recycling - MN" formulas for values of hours, efficient wattages by Lumens, baseline wattages, etc. for the "Replace incandescent lamps with LEDs" measure.
Measures "Attic Insulation", "Air Sealing", and "Wall Insulation"	Refer to Program "Insulation Rebates - MN" for variable assumptions used in energy savings calculations for the "Attic Insulation", "Air Sealing", and "Wall Insulation" measures
Measures "Showerhead", "Aerator Kitchen", and "Aerator Bathroom"	Refer to Product "Energy Efficient Showerhead - MN" for variable assumptions used in energy savings calculations, (Hours, Coincidence Factor, etc.).
Measure "Water Heater Blanket"	Refer to Product "Home Energy Squad - MN" values of efficiencies, temperatures, R-Values, hours, etc. used in the energy savings calcualtions for the "Install Water Heater Blanket" measures.
Measure "Install and Program New Thermostat"	Refer to Product "Home Energy Squad - MN" for values and assumptions used in the energy savings calculations for the "Install and Program New Thermostat" measures.
Measures "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace"	Refer to Product "MN Heating System Rebate" for values and assumptions used in the energy savings calcualtions for the "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace" measures.
Measures "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC"	Refer to Product "MN Residential Cooling" for values and assumptions used in the energy savings calcualtions for the "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC" measures.
Measures "Energy Star Clothes Washer"	Refer to Product "Energy Star New Homes - MN" for values and assumptions used in the energy savings calcualtions for the "Energy Star Clothes Washer" measures
Measure "Energy Star Refrigerator"	Refer to Program "Refrigerator Recycling - MN" for values and assumptions used in the energy savings calculations for the "Energy Star Refrigerator" measure.
Measures "Storage Water Heater" and "Tankless Water Heater"	Refer to Program "MN Water Heater Rebate" for the values and assumptions used in the energy savings calculations for the "Storage Water Heater" and "Tankless Water Heater" measures.
Measure "Heat Pump Water Heater"	Refer to Program "MN Water Heater Rebate" for the values and assumptions used in the energy savings calculations for the "Heat Pump Water Heater" measure.
Measures "Attic Insulation", "Air Sealing", and "Wall Insulation"	Refer to Program "Insulation Rebates - MN" for Measure Life and other assumptions used in the savings calculations for the "Attic Insulation", "Air Sealing", and "Wall Insulation" measures
Measures "Showerhead", "Aerator Kitchen", and "Aerator Bathroom"	Refer to Product "Energy Efficient Showerhead - MN" for Measure Life and Non-Energy O&M assumptions (water savings and water rates) used in savings calculations.
Measure "Water Heater Blanket"	Refer to Product "Home Energy Squad - MN" values of measure life used in the savings calcualtions for the "Install Water Heater Blanket" measures.
Measure "Install and Program New Thermostat"	Refer to Product "Home Energy Squad - MN" for measure life assumptions used in the savings calculations for the "Install and Program New Thermostat" measures.
Measures "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace"	Refer to Product "MN Heating System Rebate" for measure life, incremental cost, etc. used in the savings calcualtions for the "EC Fan Motor", "New Gas Boiler" and "New Gas Furnace" measures.
Measures "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC"	Refer to Product "MN Residential Cooling" for measure life, incremental cost, etc. used in the savings calcualtions for the "Installation of new AC", "Installation of Mini-Split Heat Pump" and "Quality Installation of new AC" measures.

Measures "Energy Star Clothes Washer"	Refer to Product "Energy Star New Homes - MN" for measure life, Non-Energy O&M (water savings and water rates), and incremental cost for the "Energy Star Clothes Washer" measures
Measure "Energy Star Refrigerator"	Refer to Program "Refrigerator Recycling - MN" for measure life and incremental cost for the "Energy Star Refrigerator" measure.
Measure "Heat Pump Water Heater"	Refer to Program "MN Water Heater Rebate" for measure life and incremental cost for the "Heat Pump Water Heater" measure.

Algorithms (cont):

Measures "Storage Water Heater" and "Tankless Water Heater"	Refer to Program "MN Water Heater Rebate" for measure life and incremental cost for the "Storage Water Heater" and "Tankless Water Heater" measures.
LED Electric Energy Savings (Customer kWh)	= Number_of_Bulbs x (kW_Base - kW_EE) x LED_Hours
LED Electric Demand Savings (Customer kW)	= Number_of_Bulbs x (kW_Base - kW_EE)

Variables:

Number_of_Bulbs	Provided by Vendor	= Quantity of newly installed LED bulbs provided by the vendor. Quantity will be per wattage size lamp provided.
LED_Hours	909	= average annual hours per lamp within home for LED lamps. Source is the Home Lighting & Recycling - MN Program.
kW_EE	Provided by	= Actual kW for the installed LED bulbs provided by vendor
Cost_per_Lamp	$2.75	LED lamp costs provided by the direct install vendor for this measure.
kW_Base	Provided by Vendor	= Wattage for the incandecent bulb removed by the vendor will used to determine the baseline wattages for each newly installed efficient bulb.
CFM50_Baseline	Provided by Vendor	Air leakage rate at 50 pascals maintained pressure, measured in cubic feet per minute. Vendor provided
CFM50_Proposed	Provided by Vendor	Air leakage rate at 50 pascals maintained pressure, measured in cubic feet per minute. Vendor provided
Cooling_Delta_T	1.20	Deemed average difference between normal operation and cooling setback temperature in degrees F based on information provided by the customer during the interview.
Heating_Delta_T	2.64	Deemed average difference between normal operation and heating setback temperature in degrees F based on information provided by the customer during the interview.
CF	= Coincidence Factor, the probability that peak demand savings will coincide with peak utility system demand. Refer to source programs.	
Measure Life	Measure life will be as referenced in the source programs.	
Incremental Cost	Incremental cost will be as reference in the source program for water heaters, furnaces, EC Motors, Boilers, Clothes Washers, Refrigerators, Air Conditioning, Mini-Split Heat Pumps.	
Incremental Cost Attic insulation & bypass sealing	Provided by Customer	customer cost is an actual invoice amount.
Incremental Cost Air sealing & weather-stripping	Provided by Customer	customer cost is an actual invoice amount.
Incremental Cost Wall insulation	Provided by Customer	customer cost is an actual invoice amount.
Incremental Cost Showerhead	$3.75	The Direct Install Vendor's cost to provide and install the measure
Incremental Cost Aerator Kitchen	$2.00	The Direct Install Vendor's cost to provide and install the measure
Incremental Cost Aerator Bathroom	$1.00	The Direct Install Vendor's cost to provide and install the measure
Incremental Cost Water Heater Blanket	$25.00	The Direct Install Vendor's cost to provide and install the measure

Inputs:

Type of Measures Implemented
Quantity of existing high efficacy bulbs (CFLs or LEDs) in the home
Quantity of installed LEDs in each wattage size (Required Completion for program participation)
Tons, SEER_Eff, EER_Eff of AC
Attic insulation and bypass sealing was completed (Completion Required)
Attic-sf area:Insulated attic space square feet (Completion Required)
R-Value of Existing Attic Insulation (pre-project)
R-Value of Total Final Attic Insulation (Post-project - combined existing plus new insulation)
Air sealing and weather stripping was completed
Blower Door Test results for home; test in and test out CFM50 values.
Number of Stories in the home
Home's total conditioned square footage above grade
Wall insulation was completed
Wall-sf area: Sq Ft wall insulated
BTUH (Rated furnace or boiler Input BTUH)
EFFh (Efficiency for higher efficiency furnace or boiler)
EF_Eff (Energy Factor of the Efficient water heater - Storage Tank/Tankless)
Volume of new water heater
Was ECM furnace fan motor provided

Electric Cost-Benefit Analysis Key

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test ($Total)	Utility Test ($Total)	Rate Impact Test ($Total)	Total Resource Test ($Total)	Societal Test ($Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	A1	A1	A1	A1
T & D	N/A	A2	A2	A2	A2
Marginal Energy	N/A	A3	A3	A3	A3
Environmental Externality	N/A	N/A	N/A	N/A	A4
Subtotal	N/A	A	A	A	A
Participant Benefits					
Bill Reduction - Electric	B1	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	B2	N/A	N/A	B2	B2
Incremental Capital Savings	B3	N/A	N/A	B3	B3
Incremental O&M Savings	B4	N/A	N/A	B5	B5
Subtotal	B	N/A	N/A	B	B
Total Benefits	C	C	C	C	C
Costs					
Utility Project Costs					
Customer Services	N/A	D1	D1	D1	D1
Project Administration	N/A	D2	D2	D2	D2
Advertising & Promotion	N/A	D3	D3	D3	D3
Measurement & Verification	N/A	D4	D4	D4	D4
Rebates	N/A	D5	D5	D5	D5
Other	N/A	D6	D6	D6	D6
Subtotal	N/A	D	D	D	D
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	E1	N/A	N/A
Subtotal	N/A	N/A	E	N/A	N/A
Participant Costs					
Incremental Capital Costs	F1	N/A	N/A	F2	F2
Incremental O&M Costs	F3	N/A	N/A	F4	F4
Subtotal	F	N/A	N/A	F	F
Total Costs	G	G	G	G	G
Net Benefit (Cost)	H	H	H	H	H
Benefit/Cost Ratio	I	I	I	I	I

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

Explanation of Inputs

N/A = Not applicable
A1 = Generation Avoided
A2 = Transmission and Distribution Avoided
A3 = Marginal Energy Reduced
A4 = Environmental Factors (Emissions) Avoided
A = Total Avoided Revenue Requirements
B1 = Reduced Electric Revenues from Project
B2 = Rebate paid by Xcel Energy
B3 = Incremental Capital Savings
B4 = Incremental Participant Non-Energy O&M Savings plus Natural Gas Savings
B5 = Incremental Participant Non-Energy O&M Savings * Electric Share of Avoided Revenue Requirements
B = Total Benefits realized by Participant
C = Total Benefits = A + B
D1 = Product Delivery Costs
D2 = Project Administration Costs
D3 = Advertising & Promotion Costs
D4 = Measurement & Verification Costs
D5 = Rebate Costs
D6 = Other Costs
D = Xcel Energy's Total Project Costs
E1 = Reduced Electric Revenues from Project = B1
E = Total Reduced Electric Revenues from Project
F1 = Incremental Participant Capital Investment before Rebate
F2 = Incremental Participant Capital Investment before Rebate * Electric Share of Avoided Revenue Requirements
F3 = Incremental Participant Non-Energy O&M Costs plus Natural Gas Costs
F4 = Incremental Participant Non-Energy O&M Costs * Electric Share of Avoided Revenue Requirements
F = Total Costs realized by Participant
G = Total Costs = D + E + F
H = Net Benefit or Cost = C - G
I = Benefit / Cost Ratio = C / G

General Assumptions

Discount Rate = 6.43%
Inflation Rate = Varies by input
Transmission and Distribution Avoided Costs = $39.382/kW-year in 2020, escalated by 2.82%
Generation Avoided Capacity Costs = $64.422/kW-year in 2020, escalated by 2.36%
Marginal Energy = Varies by savings profile shape. Unweighted ("flat") savings profile is weighted average is: $0.0431/kWh
Environmental Externality = Escalation varies by year. 2020 value is $0.0138/kWh.

General Inputs for the 2020 Gas CIP BENCOST Model

The margins, rates and "costs included in rates" used in the General Inputs of the Gas CIP BENCOST model were approved as part of Xcel Energy's most recent gas rate case (Docket No. G002/GR-09-1153) and went into effect in May 2011. The Company has updated these rates according to the guidelines provided in the Department of Commerce decision filled on February 19, 2016 (Docket No. G999/CIP-16-36).

BENCOST Input 1 (Retail Rate)

The Retail Rate represents the sum of the Company's currently approved tariff rate for each customer class, the Commodity Cost of $4.27 per Dth and a Demand Cost for firm non-demand billed customers of $0.95 per Dth. This value does not include the annual true-up adjustment, the annual CIP Adjustment Factor, or any other riders.

Retail Rate ($/Dth)

Customer Class	Tariff Rate	Commodity Cost	Demand Cost	BENCOST Retail Rate
Residential	$1.86/Dth	$4.27/Dth	$0.95/Dth	$7.08/Dth
Small Commercial Firm	$1.23/Dth	$4.27/Dth	$0.95/Dth	$6.46/Dth
Large Commercial Firm	$1.23/Dth	$4.27/Dth	$0.95/Dth	$6.45/Dth
Small Commercial Demand Billed[1]	$1.16/Dth	$4.27/Dth	$0.48/Dth	$5.92/Dth
Large Commercial Demand Billed[1]	$1.24/Dth	$4.27/Dth	$0.53/Dth	$6.04/Dth
Small Interruptible	$0.96/Dth	$4.27/Dth	N/A	$5.23/Dth
Medium Interruptible	$0.48/Dth	$4.27/Dth	N/A	$4.75/Dth
Large Interruptible	$0.43/Dth	$4.27/Dth	N/A	$4.70/Dth

The rate for Small Commercial Firm of $6.46/Dth was applied to all Business programs as it is expected that the vast majority of participants would be from these customer classes.

Annual Escalation Rate

The Annual Escalation Rate of 4.00 percent was provided in the DOC decision filing. This value was calculated using the average of escalation rates from five sources of natural gas price projections: Wood Mackenzie, CERA, ICF, EIA, and Global Insights.

BENCOST Input 2 (Non-Gas Fuel Retail Rate)

The Non-Gas Fuel Retail Rate represents the non-gas (normally electricity) retail rate paid by a customer or customer class. This value would be used to account for electric savings associated with gas conservation programs. Because the Company has separate electric conservation programs, we did not include any electric benefits in the BENCOST model. Therefore, the Non-Gas Fuel Retail Rate is zero for all of our analyses.

Annual Escalation Rate

[1] The Demand Billed classes' rates include both the commodity and demand components of their rates. The demand portion was calculated by dividing annual demand revenue by commodity sales.

The Annual Escalation Rate of 3.22 percent was provided in the DOC decision filing. This rate was developed using a projected price index entitled "Chained price index- household electricity" for the period 2017 through 2045 which was provided by the Minnesota Management & Budget (Budget).

BENCOST Input 3 (Commodity Cost)

The Commodity Cost, $4.27 per MCF, was provided in the DOC decision filing. This value is the weighted average of CenterPoint Energy, Great Plains Gas, Greater Minnesota Gas, Minnesota Energy Resources Corporation, and Xcel Energy's purchased gas adjustments (i.e. weighted average cost of gas) from January 2014 through December 2015, weighted by each utility's gas sales to non-exempt customers. The Commodity Cost input is also multiplied by the Annual Escalation Rate of 4.00 percent, which is described above in Input No. 1.

BENCOST Input 4 (Demand Cost)

The Demand Cost equals the Minnesota Total Demand (line 1) divided by the MN State Design Day (line 4) in Schedule A, Page 3 of the Company's January 1, 2016 Derivation of Current PGA Costs. Interruptible customers do not have demand costs. The Demand Cost is multiplied by the Annual Escalation Rate of 4.00 percent discussed in Input 1 above. The resulting 2015 demand cost of $77.15 was escalated one year at 4.00 percent to get a final 2016 BENCOST input value of $80.24

BENCOST Input 5 (Peak Reduction Factor)

The Peak Reduction Conversion Factor, 1 percent, was provided in the DOC decision filing. This value represents an estimate of the percent of energy savings occurring on system peak.

BENCOST Input 6 (Variable O&M)

The Variable O&M input, $0.0408 per MCF, is the Company's estimate of its variable Operations and Maintenance (O&M) costs, and is generally equal to its minimum transportation flexible rate for the Large Firm Transportation class. The Variable O&M input is multiplied by the Annual Escalation Rate of 4.00 percent discussed in Input 1 above.

BENCOST Input 7 (Non-Gas Fuel Cost)

The Non-Gas Fuel Cost, $0.02153 per kWh, represents the added or avoided costs of non-natural gas fuel associated with the Conservation Improvement Program. This value was provided in the DOC decision filing. The Non-Gas Fuel Cost is multiplied by an Annual Escalation Rate of 3.22 percent, as presented in the DOC decision filing.

BENCOST Input 8 (Non-Gas Fuel Loss Factor)

The Non-Gas Fuel Loss Factor, 5.28 percent as provided in the DOC decision filing, represents the transmission and distribution line losses associated with non-natural gas (electric) fuels associated with the Conservation Improvement Program.

BENCOST Input 9 (Gas Environmental Damage Factor)

The Environmental Damage Factor, $0.38 per MCF saved, was provided in the DOC decision filing. This value represents the societal and environmental cost of burning natural gas. It includes the costs of some emissions (SO_2, PM, CO, NO_X, Pb, and CO_2), but not others (methane, propane,

VOCs). The Gas Environmental Damage Factor is multiplied by an Annual Escalation Rate of 2.16 percent as presented in the DOC decision filing.

BENCOST Input 10 (Non-Gas Fuel Environmental Damage Factor)

The Non-Gas Fuel Environmental Damage Factor, $23.22 per MWh, represents the cost to society and the environment for generating electricity. This value was provided in the DOC decision filing. The Non-Gas Fuel Environmental Damage Factor is multiplied by an Annual Escalation Rate of 2.16 percent, as presented in the DOC decision filing.

BENCOST Input 11 (Participant Discount Rate)

The Participant Discount Rate for business customers is represented by the Utility Discount Rate, discussed in Input 12. For residential customers, it is represented by the Societal Discount Rate, discussed in Input 13.

BENCOST Input 12 (Utility Discount Rate)

The Discount Rate of 7.42 percent is Xcel Energy's after-tax weighted average cost of capital from its 2010 rate case (Docket No. G002/GR-09-1153).

BENCOST Input 13 (Societal Discount Rate)

The Social Discount Rate, 2.55 percent, was provided in the DOC decision filing.

BENCOST Input 14 (General Input Data Year)

The General Input Data Year for the 2020 CIP Extension Plan, 2016, was provided in the DOC decision filing.

BENCOST Input 15d (Project Analysis Year 4)

The Project Analysis Year 1 is the year over which Xcel Energy's CIP Extension Plan will be effective, 2020.

Budget Categories

The following chart indicates which expenses are attributed to each CIP budget category in this filing.

Budget Category	Components
Customer Services	• Consulting costs for customer scoping and project management, subsidies for assessments and engineering studies. • Costs to purchase EE equipment and to install efficient equipment at the customer site.
Utility Administration	• Project planning, development and implementation. Marketing and support staff including program managers, marketing assistants, developers, technical support staff, rebate processing, sales and call center representatives, inside contract labor, and other fulfillment associated with delivering a product directly to the customer. • Auditors, installation contractors, vendors, technical consultants, fulfillment contractors and alternative providers that Xcel Energy contracts with to provide DSM services. • Equipment purchase costs and repair; hardware and software; supplies; and other employee expenses.
Advertising & Promotion	• 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. • Communication staff and other supporting labor.
Participant Incentives	Customer rebates and incentives given in the form of subsidized products or equipment.
Measurement & Verification (M&V)	Program evaluation expenses and consultants performing M&V.
Research & Development (R&D)	Internal product development staff, product development external consultants, product development research activities & Market Research potential studies.
Other	• Vendor and trade incentives. • Direct and indirect regulatory fees.

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