



Vectren South 2018-2020
Electric Energy Efficiency Plan

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Southern Indiana Gas & Electric Company d/b/a Vectren Energy Delivery of
Indiana Inc. (Vectren South)

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List of Acronyms & Abbreviations

Acronym	Description
AEG	Applied Energy Group
ARCA	Appliance Recycling Centers of America Inc.
BAS	Building Automation System
BTU	Building Tune-Up
BYOT	Bring Your Own Thermostat
C&I	Commercial and Industrial
CAC	Central Air Conditioning
CFL	Compact Fluorescent Lamp
CVR	Conservation Voltage Reduction
DLC	Direct Load Control
DR	Demand Response
DSM	Demand Side Management
EAD	Energy Design Assistance
EAP	Energy Assistance Program
ECM	Electronically Commutated Motors
EE	Energy Efficiency
EISA	Energy Independence and Security Act
EM&V	Evaluation, Measurement and Verification
ES	ENERGY STAR
HEA	Home Energy Assessment & Weatherization
HERS	Home Efficiency Rating System
HVAC	Heating, Ventilation and Air Conditioning
IQW	Income Qualified & Weatherization
IRP	Integrated Resource Plan
IURC	Indiana Utility Regulatory Commission
kW/kWh	Kilowatt, Kilowatt hour
LED	Light Emitting Diode
MISO	Midcontinent Independent Transmission System Operator, Inc.
MPS	Market Potential Study
MW,MWh	Megawatt, Megawatt hour
NEF	National Energy Foundation
NPV	Net Present Value
O&M	Operations and Maintenance
PCT	Participant Cost Test
RFQ	Request for Qualification
RIM	Ratepayer Impact Measure
RNC	Residential New Construction
TRM	Technical Reference Manual
UCT	Utility Cost Test

1. Introduction

Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. (“Vectren South”) provides energy delivery services to approximately 144,000 electric customers and 111,000 natural gas customers located in Southwestern Indiana. Vectren South is a direct, wholly owned subsidiary of Vectren Utility Holdings, Inc. and an indirect subsidiary of Vectren Corporation (“Vectren”), headquartered in Evansville, IN. This Vectren South 2018-2020 Electric Demand Side Management (DSM) Plan (“2018-2020 Plan” or “Plan”) describes the details of the electric Energy Efficiency (EE) and Demand Response (DR) programs Vectren South plans to offer in its service territory in 2018-2020.

Vectren South is proposing a 2018-2020 Plan designed to cost effectively reduce energy use by approximately 1% of eligible retail sales each year over the three-year plan. The EE savings goals are consistent with Vectren South’s 2016 Integrated Resource Plan (“2016 IRP”), reasonably achievable and cost effective. The Plan includes program budgets, including the direct and indirect costs of energy efficiency programs. The 2018-2020 Plan recommends electric EE and DR programs for the residential and commercial & industrial (C&I) sectors in Vectren South’s service territory. Where appropriate, it also describes opportunities for coordination with some of Vectren South’s gas EE programs to leverage the best total EE and DR opportunities for customers and to share costs of delivery. Vectren South utilizes a portfolio of DSM programs to achieve demand reductions and energy savings, thereby providing reliable electric service to its customers. Vectren’s DSM programs have been approved by the Indiana Utility Regulatory Commission (“Commission” or “IURC”) and implemented pursuant to various IURC orders over the years.

2. Vectren South DSM Strategy

Energy efficiency remains at the core of Vectren’s culture as the utility strives to partner with customers to help them use energy wisely. The company’s tagline, Live Smart, originated from Vectren’s turn toward energy efficiency in 2006 with the emergence natural gas energy efficiency programs, and then that effort was bolstered when electric energy efficiency programs were launched in 2010. Vectren employees receive regular communication on the progress toward the company’s annual energy efficiency goals and rely on their workforce to serve as ambassadors in driving participation in its energy efficiency programs. One of the utility’s goals is to “Be a leader in customer conservation and energy efficiency,” and Vectren proactively works with its oversight boards in each state it serves to assemble progressive, cost-effective programs that work toward achieving that objective.

The preferred portfolio of Vectren South's recently filed 2016 Integrated Resource Plan ("2016 IRP") includes EE programs for all customer classes and sets an annual savings target of 1% of retail sales for 2018-2020. The framework for the 2018 - 2020 Plan was modeled at a savings level of 1% of retail sales adjusted for an opt-out rate of 73% eligible load, as provided for in Indiana Code § 8-1-8.5-10 ("Section 10"). The load forecast also includes an ongoing level of EE related to codes and standards embedded in the load forecast projections. Ongoing EE and DR programs are also important given the integration of Vectren South's natural gas and electric EE and DR programs.

A. Integration with Vectren South Gas

Opportunities exist to gain both natural gas and electric savings from some EE programs and measures. In these instances, energy savings will be captured by the respective utility. For the programs where integration opportunities exist, Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric. Below is a list of programs that Vectren South has identified as integrated:

- Residential Prescriptive
- Residential New Construction
- Home Energy Assessment & Weatherization
- Income Qualified Weatherization
- Energy Efficient Schools
- Residential Behavioral Savings
- Commercial and Industrial (C&I) Custom
- Small Business Direct Install
- C&I New Construction
- Building Tune-up
- Multi-Family Retrofit

B. Vectren Oversight Board

The Vectren Oversight Board (VOB) provides input into the planning and evaluation of Vectren South's EE programs. The VOB was formed in 2010 pursuant to the Final Order issued in Cause No. 43427 and included the Indiana Office of the Utility Consumer Counselor (OUCC) and Vectren South as voting members. The Citizens Action Coalition (CAC) was added as a voting member of the VOB in 2013 pursuant to the Final Order issued in Cause No. 44318. In 2014, the Vectren South Electric Oversight Board merged with the Vectren South Gas Oversight Board and Vectren North Gas Oversight to form one governing body, the VOB. Vectren and the VOB have worked collaboratively over the last several years and Vectren requests to continue the current voting structure.

3. Vectren South Planning Process

Vectren South has offered a variety of EE programs since April 2010 and has engaged in a similar planning process each time a new portfolio is presented to the Commission for approval.

The 2018-2020 Plan was developed in conjunction with the 2016 IRP planning process and therefore the 2016 IRP served as a key input into the 2018-2020 Plan. As such, this process aligns with Indiana Code § 8-1-8.5-10 ("Section 10"), which requires that EE goals be consistent with an electricity supplier's IRP.

Consistent with the 2016 IRP preferred portfolio, the framework for the 2018 - 2020 Plan was modeled at a savings level of 1% of retail sales with opt-out assumptions incorporated. Once the level of EE programs to be offered from 2018 through 2020 was established, Vectren South engaged in a process to develop the 2018-2020 Plan. The objective of the planning process was to develop a plan based upon market-specific information for Vectren South's territory, which could be successfully implemented utilizing realistic assessments of achievable market potential.

The program design used an Electric Market Potential Study (MPS) for guidance to validate that the plan estimates were reasonable. While building from the bottom up with estimates from program implementers to help determine participation, this comparison to the MPS allowed the planning team to determine if the results were reasonable.

In 2013, Vectren South engaged EnerNOC, Inc., to conduct an MPS and Action Plan. For this effort, EnerNOC evaluated electric energy efficiency resources in the residential, commercial, and industrial sectors for the years 2015-2019. The study included a detailed, bottom-up assessment of the Vectren South market in the Evansville metropolitan area to deliver a projection of baseline electric energy use, forecasts of the energy savings achievable through efficiency measures, and program designs and

strategies to optimally deliver those savings. The study assessed various tiers of technical, economic and achievable potential by sector, customer type and measure.

Given this Plan 2018 through 2020, and the most recent MPS ended in 2019, Vectren South, with VOB approval, engaged Applied Energy Group (AEG), previously EnerNOC, to refresh the MPS for 2018 and 2019 and to extend the analysis to include 2020. Several key data elements of the analysis were updated as part of this effort, specifically:

- Load forecast, which is approximately 4% lower in 2018-2020 than the load forecast used for those years in the original analysis
- The impact of large customer opt-outs on the market potential for the commercial and industrial (C&I) sectors, where 73% of eligible C&I load has elected to opt out of energy efficiency programs and the accompanying surcharge that would otherwise appear on their bill
- LED lighting measures cost and performance data
- Vectren South EE Program performance and budgets
- Projections of avoided energy, capacity, and transmission and distribution (T&D) infrastructure costs
- Vectren South retail rates, discount rates, and line losses

In addition, vendors and other implementation partners who operate the current programs were involved in the planning process by providing suggestions for program changes and enhancements. The vendors and partners also provided technical information about measures to include recommended incentives, estimated participation and estimated implementation costs. This data provided a foundation for the 2018-2020 Plan based on actual experience within Vectren South's territory. These companies also bring their experience operating programs for other utilities. Once the draft version of the 2018-2020 Plan was developed, Vectren South solicited feedback from the VOB for consideration in the final design.

Other sources of program information were also considered. Current evaluations and the Indiana Technical Resource Manual (TRM) were used for adjustments to inputs. In addition, best practices were researched and reviewed to gain insights into the program design of successful EE and DR programs implemented by other utility companies.

VOB feedback was incorporated into the planning process, as applicable.

4. Cost Effectiveness Analysis

Vectren South's last step of the planning process was the cost benefit analysis. Vectren South retained Dr. Richard Stevie, Vice President of Forecasting with Integral Analytics, to complete the cost benefit

modeling. Utilizing DSMore, the measures and programs were analyzed for cost effectiveness. The DSMore tool is nationally recognized and used in many states across the country to determine cost-effectiveness. Developed and licensed by Integral Analytics based in Cincinnati, OH, the DSMore cost-effectiveness modeling tool takes hourly prices and hourly energy savings from the specific measures/technologies being considered for the EE program, and then correlates both to weather. This tool looks at more than 30 years of historic weather variability to get the full weather variances appropriately modeled. In turn, this allows the model to capture the low probability, but high consequence weather events and apply appropriate value to them. Thus, a more accurate view of the value of the efficiency measure can be captured in comparison to other alternative supply options.

The outputs of DSMore include all the California Standard Practice Manual results including Total Resource Cost (TRC), Utility Cost Test (UCT), Participant Cost Test (PCT) and Ratepayer Impact Measure (RIM) tests. Inputs into the model include the following: participation rates, incentives paid, energy savings of the measure, life of the measure, implementation costs, and administrative costs, incremental costs to the participant of the high efficiency measure, and escalation rates and discount rates. Vectren South considers the results of each test and ensures that the portfolio passes the TRC test as it includes the total costs and benefits to both the utility and the consumer. The model includes a full range of economic perspectives typically used in EE and DSM analytics. The perspectives include:

- Total Resource Cost Test - shows the combined perspective of the utility and the participating customers. This test compares the level of benefits associated with the reduced energy supply costs to utility programs and participant costs.
- Utility Cost Test - shows the value of the program considering only avoided utility supply cost (based on the next unit of generation) in comparison to program costs.
- Participant Cost Test - shows the value of the program from the perspective of the utility's customer participating in the program. The test compares the participant's bill savings over the life of the EE/DR program to the participant's cost of participation.
- Ratepayer Impact Measure Test - shows the impact of a program on all utility customers through impacts in average rates. This perspective also includes the estimates of revenue losses, which may be experienced by the utility as a result of the program.

The cost effectiveness analysis produces two types of resulting metrics:

- Net Benefits (dollars) = $NPV \sum \text{benefits} - NPV \sum \text{costs}$
- Benefit Cost Ratio = $NPV \sum \text{benefits} \div NPV \sum \text{costs}$

Cost effectiveness analysis is performed using each of the four primary tests. The results of each test reflect a distinct perspective and have a separate set of inputs demonstrating the treatment of costs and

benefits. A summary of benefits and costs included in each cost effectiveness test can be found in Appendix A.

5. 2018 - 2020 Plan Objectives and Impact

The framework for the 2018-2020 Plan aligns with the preferred portfolio as filed in the 2016 IRP and was designed to reach a reduction in sales of approximately 1% of eligible retail sales with opt-out assumptions incorporated. Table 1 below provides an overview of energy savings and demand impacts, participation and budget by the residential and C&I sectors and for the total portfolio. Table 2 provides an overview of budget and energy savings by program and by year.

Table 1: 2018-2020 Portfolio Summary of Participation, Impacts & Budget

Residential

Program Year	Participants/ Measures	Annual Energy Savings kWh	Annual Demand Savings kW	Direct Program Budget	First Year Cost/Kwh*
2018	327,374	21,520,612	6,982	\$4,663,152	\$0.22
2019	347,909	22,025,627	7,221	\$4,865,148	\$0.22
2020	217,427	19,294,127	7,177	\$4,649,484	\$0.24

Commercial & Industrial

Program Year	Participants/ Measures	Annual Energy Savings kWh	Annual Demand Savings kW	Direct Program Budget	First Year Cost/Kwh*
2018	7,252	15,135,729	1,648	\$3,387,238	\$0.22
2019	6,211	16,043,561	1,585	\$3,568,128	\$0.22
2020	7,638	17,053,515	1,773	\$3,720,882	\$0.22

Portfolio Participation, Impacts & Budget

Program Year	Participants/ Measures	Annual Energy Savings kWh	Annual Demand Savings kW	Res & C&I Direct Program Budget	Indirect Portfolio Level Budget	Other Costs Budget	Portfolio Total Budget Including Indirect & Other	First Year Cost/Kwh*
2018	334,626	36,656,341	8,630	\$8,050,391	\$937,436	\$500,000	\$9,487,827	\$0.23
2019	354,120	38,069,188	8,807	\$8,433,276	\$960,110	\$200,000	\$9,593,386	\$0.23
2020	225,065	36,347,642	8,950	\$8,370,366	\$960,225	\$200,000	\$9,530,591	\$0.24

*Cost per kWh includes program and indirect costs for budget. First year costs are calculated by dividing total cost by total savings and do not include carry forward costs related to smart thermostat, BYOT and CVR programs.

Table 2: Vectren South 2018 - 2020 Plan Overview by Program

	Total Budget (\$)			Total Savings (kWh)			Total Demand (kW)		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Residential Programs									
Residential Lighting	\$ 942,125	\$ 930,451	\$ 691,256	7,610,617	8,340,595	6,075,005	942	1,029	791
Residential Prescriptive	\$ 635,925	\$ 681,609	\$ 694,362	1,747,547	1,918,174	1,979,280	1,558	1,775	1,910
Residential New Construction	\$ 85,345	\$ 87,132	\$ 88,940	187,038	187,038	187,038	118	118	118
Home Energy Assessment & Weatherization	\$ 526,473	\$ 533,934	\$ 541,669	863,991	863,991	863,991	192	192	192
Income Qualified Weatherization	\$ 841,848	\$ 899,806	\$ 958,593	959,988	1,046,148	1,130,945	459	499	540
Food Bank - LED Bulb Distribution	\$ 174,141	\$ 175,308	\$ -	1,401,264	1,401,264	-	149	149	0
Energy Efficient Schools	\$ 131,696	\$ 136,805	\$ 119,995	899,706	937,194	645,216	53	53	53
Residential Behavioral Savings	\$ 305,622	\$ 285,585	\$ 286,545	6,470,000	5,970,000	5,600,000	1,351	1,248	1,153
Appliance Recycling	\$ 174,759	\$ 180,648	\$ 186,532	913,771	894,534	884,915	121	118	117
Smart Thermostat Program (incentives)	\$ 97,639	\$ 98,222	\$ 98,798	-	-	-	1,200	1,200	1,200
CVR Residential	\$ 118,786	\$ 114,907	\$ 230,134	-	-	1,461,047	-	-	263
SmartDLC - Wifi DR/DLC Changeout	\$ 517,759	\$ 562,148	\$ 606,532	466,690	466,690	466,690	600	600	600
BYOT (Bring Your Own Thermostat)	\$ 111,036	\$ 178,592	\$ 146,128	-	-	-	240	240	240
Residential Subtotal	\$ 4,663,152	\$4,865,148	\$4,649,484	21,520,612	22,025,627	19,294,127	6,982	7,221	7,177
C&I Programs									
Commercial Prescriptive	\$ 729,398	\$ 655,370	\$ 731,330	4,999,125	4,501,186	5,002,621	378	325	369
Commercial Custom	\$ 1,019,072	\$ 1,022,184	\$ 1,160,256	5,000,000	5,000,000	5,500,000	476	476	524
Small Business Direct Install	\$ 1,149,640	\$ 1,182,037	\$ 1,173,133	4,032,934	3,905,372	3,900,306	667	645	567
Commercial New Construction	\$ 214,536	\$ 386,092	\$ 222,628	502,080	1,835,413	502,080	108	120	108
Building Tune-up	\$ 130,880	\$ 182,074	\$ 261,266	500,000	700,000	1,000,000	1	1	1
Multi-Family Retrofit	\$ 34,880	\$ 35,074	\$ 35,266	101,590	101,590	115,853	18	18	18
CVR Commercial	\$ 108,834	\$ 105,297	\$ 137,003	-	-	1,032,655	-	-	186
Commercial Subtotal	\$ 3,387,238	\$3,568,128	\$3,720,882	15,135,729	16,043,561	17,053,515	1,648	1,585	1,773
Residential & Commercial Subtotal	\$ 8,050,391	\$8,433,276	\$8,370,366	36,656,341	38,069,188	36,347,642	8,630	8,807	8,950
Portfolio Level Costs Subtotal*	\$ 937,436	\$ 960,110	\$ 960,225						
Other Costs Subtotal**	\$ 500,000	\$ 200,000	\$ 200,000						
DSM Portfolio Total including Other Costs	\$ 9,487,827	\$9,593,386	\$9,530,591	36,656,341	38,069,188	36,347,642	8,630	8,807	8,950

*Portfolio level costs include: Contact Center, Online Audit, Outreach & Education, and Evaluation.
**Other Costs include Market Potential Study and Emerging Markets.

A. Plan Savings

The planned savings goal for 2018-2020 was calculated based on a percentage of forecasted weather normalized electric sales for 2018 to 2020 with a target of 1% of eligible retail sales. The forecast is consistent with Vectren South’s 2016 IRP sales forecast. Goals are based on gross energy savings with opt-out assumptions incorporated. Table 3 demonstrates the portfolio, residential and C&I energy savings targets at the 1% eligible retail sales level. Table 4 demonstrates the portfolio energy and demand savings by program and by year.

Table 3: Vectren South 2018 - 2020 Plan Portfolio Summary Planned Energy Savings

Portfolio Summary	kWh Savings			kW Savings		
	2018	2019	2020	2018	2019	2020
Residential Total	21,520,612	22,025,627	19,294,127	6,982	7,221	7,177
Commercial & Industrial Total	15,135,729	16,043,561	17,053,515	1,648	1,585	1,773
Portfolio Total	36,656,341	38,069,188	36,347,642	8,630	8,807	8,950

Table 4: Vectren South 2018 - 2020 Plan Portfolio Planned Energy Savings

Residential	2018 kWh	2018 kW	2019 kWh	2019 kW	2020 kWh	2020 kW
Residential Lighting	7,610,617	942	8,340,595	1,029	6,075,005	791
Residential Prescriptive	1,747,547	1,558	1,918,174	1,775	1,979,280	1,910
Residential New Construction	187,038	118	187,038	118	187,038	118
Home Energy Assessment & Weatherization	863,991	192	863,991	192	863,991	192
Income Qualified Weatherization	959,988	459	1,046,148	499	1,130,945	540
Food Bank - LED Bulb Distribution	1,401,264	149	1,401,264	149	0	0
Energy Efficient Schools	899,706	53	937,194	53	645,216	53
Residential Behavioral Savings	6,470,000	1,351	5,970,000	1,248	5,600,000	1,153
Appliance Recycling	913,771	121	894,534	118	884,915	117
Smart Thermostat Program (incentives)	-	1,200	-	1,200	-	1,200
CVR Residential	-	-	-	-	1,461,047	263
SmartDLC - Wifi DR/DLC Changeout	466,690	600	466,690	600	466,690	600
BYOT (Bring Your Own Thermostat)	-	240	-	240	-	240
Residential Total	21,520,612	6,982	22,025,627	7,221	19,294,127	7,177
Commercial & Industrial	2018 kWh	2018 kW	2019 kWh	2019 kW	2020 kWh	2020 kW
Commercial Prescriptive	4,999,125	378	4,501,186	325	5,002,621	369
Commercial Custom	5,000,000	476	5,000,000	476	5,500,000	524
Small Business Direct Install	4,032,934	667	3,905,372	645	3,900,306	567
Commercial New Construction	502,080	108	1,835,413	120	502,080	108
Building Tune-up	500,000	1	700,000	1	1,000,000	1
Multi-Family Retrofit	101,590	18	101,590	18	115,853	18
CVR Commercial	-	-	-	-	1,032,655	186
Commercial & Industrial Total	15,135,729	1,648	16,043,561	1,585	17,053,515	1,773
Portfolio Total	36,656,341	8,630	38,069,188	8,807	36,347,642	8,950

B. Plan Budget

The total planned program budget includes the direct and indirect costs of implementing Vectren South's electric energy efficiency programs. In addition, a budget for other costs are being requested as described below.

Direct program costs include three main categories: vendor implementation, program incentives and administration costs. The program budgets were built based upon multiple resources. Program budgets were discussed with program implementers as a basis for the development of this plan. Vendor implementation budgets were estimated using historical data and estimates provided by the current vendors. This helps to assure that the estimates are realistic for successful delivery. Program incentives were calculated by assigning measures with appropriate incentive values based upon existing program incentives, evaluation results and vendor recommendations. Lastly, administrative costs are comprised of internal costs for Vectren South's management and oversight of the programs. Administrative costs were allocated back to programs based on the percent of savings these programs represent as well as estimated staff time spent on programs.

Indirect costs are costs that are not directly tied to a single program, but rather support multiple programs or the entire portfolio. These include: Contact Center, Online Audit, Outreach & Education, and Evaluation, Measurement and Verification (EM&V). These costs are budgeted at the portfolio level.

Other costs are also being requested in the 2018-2020 filed plan. Vectren South requests approval of a budget to include a Market Potential Study for 2020 and beyond and funding for Emerging Markets, which is discussed later in the Plan. Emerging Markets funding allows Vectren's EE portfolio to offer leading-edge program designs for next-generation technologies, services, and engagement strategies to growing markets in the Vectren South territory. This funding will not be used to support existing measures or programs, but rather support new program development or new measures within an existing program. Tables 5 through 8 below list the summary budgets by year, program and category.

Table 5: Vectren South 2018 – 2020 Summary Budgets by Year

Residential	2018	2019	2020	Total Budget
Residential Lighting	\$942,125	\$930,451	\$691,256	\$2,563,832
Residential Prescriptive	\$635,925	\$681,609	\$694,362	\$2,011,896
Residential New Construction	\$85,345	\$87,132	\$88,940	\$261,417
Home Energy Assessment & Weatherization	\$526,473	\$533,934	\$541,669	\$1,602,076
Income Qualified Weatherization	\$841,848	\$899,806	\$958,593	\$2,700,247
Food Bank - LED Bulb Distribution	\$174,141	\$175,308	\$0	\$349,449
Energy Efficient Schools	\$131,696	\$136,805	\$119,995	\$388,496
Residential Behavioral Savings	\$305,622	\$285,585	\$286,545	\$877,752
Appliance Recycling	\$174,759	\$180,648	\$186,532	\$541,939
Smart Thermostat Program	\$97,639	\$98,222	\$98,798	\$294,659
CVR Residential	\$118,786	\$114,907	\$230,134	\$463,827
SmartDLC - Wifi DR/DLC Change-out	\$517,759	\$562,148	\$606,532	\$1,686,439
BYOT (Bring Your Own Thermostat)	\$111,036	\$178,592	\$146,128	\$435,756
Residential Total	\$4,663,152	\$4,865,148	\$4,649,484	\$14,177,784
Commercial & Industrial	2018	2019	2020	Total Budget
Commercial Prescriptive	\$729,398	\$655,370	\$731,330	\$2,116,098
Commercial Custom	\$1,019,072	\$1,022,184	\$1,160,256	\$3,201,512
Small Business Direct Install	\$1,149,640	\$1,182,037	\$1,173,133	\$3,504,810
Commercial New Construction	\$214,536	\$386,092	\$222,628	\$823,256
Building Tune-up	\$130,880	\$182,074	\$261,266	\$574,220
Multi-Family Retrofit	\$34,880	\$35,074	\$35,266	\$105,220
CVR Commercial	\$108,834	\$105,297	\$137,003	\$351,134
Commercial & Industrial Total	\$3,387,238	\$3,568,128	\$3,720,882	\$10,676,248
Total Direct Program Costs	\$8,050,391	\$8,433,276	\$8,370,366	\$24,854,032
Indirect Portfolio Level Costs	2018	2019	2020	Total Budget
Contact Center	\$63,000	\$63,000	\$63,000	\$189,000
Online Audit	\$36,444	\$39,806	\$42,911	\$119,161
Outreach & Education	\$410,000	\$410,000	\$410,000	\$1,230,000
Evaluation	\$427,992	\$447,304	\$444,314	\$1,319,610
Indirect Portfolio Level Costs Subtotal	\$937,436	\$960,110	\$960,225	\$2,857,771
Total Portfolio	\$8,987,827	\$9,393,386	\$9,330,591	\$27,711,803
Other Costs	2018	2019	2020	Total Budget
Emerging Markets	\$200,000	\$200,000	\$200,000	\$600,000
Market Potential Study	\$300,000	\$0	\$0	\$300,000
Other Costs Subtotal	\$500,000	\$200,000	\$200,000	\$900,000
DSM Portfolio Total including Other Costs	\$9,487,827	\$9,593,386	\$9,530,591	\$28,611,803

Table 6: Vectren South 2018 Summary Budgets by Category

Residential	Administrative	Implementation	Incentives	Total Budget
Residential Lighting	\$ 94,072	\$ 225,000	\$ 623,053	\$ 942,125
Residential Prescriptive	\$ 5,880	\$ 219,860	\$ 410,185	\$ 635,925
Residential New Construction	\$ 17,639	\$ 39,856	\$ 27,850	\$ 85,345
Home Energy Assessment & Weatherization	\$ 47,036	\$ 479,437	\$ -	\$ 526,473
Income Qualified Weatherization	\$ 35,277	\$ 806,571	\$ -	\$ 841,848
Food Bank - LED Bulb Distribution	\$ 35,277	\$ 138,864	\$ -	\$ 174,141
Energy Efficient Schools	\$ 44,096	\$ 87,600	\$ -	\$ 131,696
Residential Behavioral Savings	\$ 29,398	\$ 276,224	\$ -	\$ 305,622
Appliance Recycling	\$ 11,759	\$ 115,500	\$ 47,500	\$ 174,759
Smart Thermostat Program	\$ 17,639	\$ 40,000	\$ 40,000	\$ 97,639
CVR Residential	\$ 2,940	\$ 115,846	\$ -	\$ 118,786
SmartDLC - Wifi DR/DLC Change-out	\$ 11,759	\$ 484,000	\$ 22,000	\$ 517,759
BYOT (Bring Your Own Thermostat)	\$ 47,036	\$ 26,000	\$ 38,000	\$ 111,036
Residential Subtotal	\$ 399,806	\$ 3,054,758	\$1,208,588	\$ 4,663,152
Commercial & Industrial	Administrative	Implementation	Incentives	Total Budget
Commercial Prescriptive	\$ 29,398	\$ 200,000	\$ 500,000	\$ 729,398
Commercial Custom	\$ 94,072	\$ 325,000	\$ 600,000	\$ 1,019,072
Small Business Direct Install	\$ 2,940	\$ 321,700	\$ 825,000	\$ 1,149,640
Commercial New Construction	\$ 47,036	\$ 102,500	\$ 65,000	\$ 214,536
Building Tune-up	\$ 5,880	\$ 100,000	\$ 25,000	\$ 130,880
Multi-Family Retrofit	\$ 5,880	\$ 10,000	\$ 19,000	\$ 34,880
CVR Commercial	\$ 2,940	\$ 105,894	\$ -	\$ 108,834
Commercial Subtotal	\$ 188,144	\$ 1,165,094	\$2,034,000	\$ 3,387,238
Residential & Commercial Subtotal	\$ 587,950	\$ 4,219,853	\$3,242,588	\$ 8,050,391
Indirect Costs				Total Budget
Contact Center				\$ 63,000
Online Audit				\$ 36,444
Outreach & Education				\$ 410,000
Evaluation				\$ 427,992
DSM Portfolio Total				\$ 8,987,827
Other Costs				Total Budget
Emerging Markets				\$ 200,000
Market Potential Study				\$ 300,000
Other Costs Subtotal				\$ 500,000
DSM Portfolio Total including Other Costs				\$ 9,487,827

Table 7: Vectren South 2019 Summary Budgets by Category

Residential	Administrative	Implementation	Incentives	Total Budget
Residential Lighting	\$ 97,184	\$ 225,000	\$ 608,267	\$ 930,451
Residential Prescriptive	\$ 6,074	\$ 226,800	\$ 448,735	\$ 681,609
Residential New Construction	\$ 18,222	\$ 41,060	\$ 27,850	\$ 87,132
Home Energy Assessment & Weatherization	\$ 48,592	\$ 485,342	\$ -	\$ 533,934
Income Qualified Weatherization	\$ 36,444	\$ 863,362	\$ -	\$ 899,806
Food Bank - LED Bulb Distribution	\$ 36,444	\$ 138,864	\$ -	\$ 175,308
Energy Efficient Schools	\$ 45,555	\$ 91,250	\$ -	\$ 136,805
Residential Behavioral Savings	\$ 30,370	\$ 255,215	\$ -	\$ 285,585
Appliance Recycling	\$ 12,148	\$ 122,000	\$ 46,500	\$ 180,648
Smart Thermostat Program	\$ 18,222	\$ 40,000	\$ 40,000	\$ 98,222
CVR Residential	\$ 3,037	\$ 111,870	\$ -	\$ 114,907
SmartDLC - Wifi DR/DLC Change-out	\$ 12,148	\$ 506,000	\$ 44,000	\$ 562,148
BYOT (Bring Your Own Thermostat)	\$ 48,592	\$ 84,000	\$ 46,000	\$ 178,592
Residential Subtotal	\$ 413,032	\$ 3,190,764	\$1,261,352	\$ 4,865,148
Commercial & Industrial	Administrative	Implementation	Incentives	Total Budget
Commercial Prescriptive	\$ 30,370	\$ 200,000	\$ 425,000	\$ 655,370
Commercial Custom	\$ 97,184	\$ 325,000	\$ 600,000	\$ 1,022,184
Small Business Direct Install	\$ 3,037	\$ 319,000	\$ 860,000	\$ 1,182,037
Commercial New Construction	\$ 48,592	\$ 112,500	\$ 225,000	\$ 386,092
Building Tune-up	\$ 6,074	\$ 141,000	\$ 35,000	\$ 182,074
Multi-Family Retrofit	\$ 6,074	\$ 10,000	\$ 19,000	\$ 35,074
CVR Commercial	\$ 3,037	\$ 102,260	\$ -	\$ 105,297
Commercial Subtotal	\$ 194,368	\$ 1,209,760	\$2,164,000	\$ 3,568,128
Residential & Commercial Subtotal	\$ 607,400	\$ 4,400,524	\$3,425,352	\$ 8,433,276
Indirect Costs				Total Budget
Contact Center				\$ 63,000
Online Audit				\$ 39,806
Outreach & Education				\$ 410,000
Evaluation				\$ 447,304
DSM Portfolio Total				\$ 9,393,386
Other Costs				Total Budget
Emerging Markets				\$ 200,000
Market Potential Study				\$ -
Other Costs Subtotal				\$ 200,000
DSM Portfolio Total including Other Costs				\$ 9,593,386

Table 8: Vectren South 2020 Summary Budgets by Category

Residential	Administrative	Implementation	Incentives	Total Budget
Residential Lighting	\$ 100,256	\$ 150,000	\$ 441,000	\$ 691,256
Residential Prescriptive	\$ 6,266	\$ 234,111	\$ 453,985	\$ 694,362
Residential New Construction	\$ 18,798	\$ 42,292	\$ 27,850	\$ 88,940
Home Energy Assessment & Weatherization	\$ 50,128	\$ 491,541	\$ -	\$ 541,669
Income Qualified Weatherization	\$ 37,596	\$ 920,997	\$ -	\$ 958,593
Food Bank - LED Bulb Distribution	\$ -	\$ -	\$ -	\$ -
Energy Efficient Schools	\$ 46,995	\$ 73,000	\$ -	\$ 119,995
Residential Behavioral Savings	\$ 31,330	\$ 255,215	\$ -	\$ 286,545
Appliance Recycling	\$ 12,532	\$ 128,000	\$ 46,000	\$ 186,532
Smart Thermostat Program	\$ 18,798	\$ 40,000	\$ 40,000	\$ 98,798
CVR Residential	\$ 40,729	\$ 189,405	\$ -	\$ 230,134
SmartDLC - Wifi DR/DLC Change-out	\$ 12,532	\$ 528,000	\$ 66,000	\$ 606,532
BYOT (Bring Your Own Thermostat)	\$ 50,128	\$ 42,000	\$ 54,000	\$ 146,128
Residential Subtotal	\$ 426,088	\$ 3,094,561	\$1,128,835	\$ 4,649,484
Commercial & Industrial	Administrative	Implementation	Incentives	Total Budget
Commercial Prescriptive	\$ 31,330	\$ 250,000	\$ 450,000	\$ 731,330
Commercial Custom	\$ 100,256	\$ 400,000	\$ 660,000	\$ 1,160,256
Small Business Direct Install	\$ 3,133	\$ 345,000	\$ 825,000	\$ 1,173,133
Commercial New Construction	\$ 50,128	\$ 107,500	\$ 65,000	\$ 222,628
Building Tune-up	\$ 6,266	\$ 205,000	\$ 50,000	\$ 261,266
Multi-Family Retrofit	\$ 6,266	\$ 10,000	\$ 19,000	\$ 35,266
CVR Commercial	\$ 3,133	\$ 133,870	\$ -	\$ 137,003
Commercial Subtotal	\$ 200,512	\$ 1,451,370	\$2,069,000	\$ 3,720,882
Residential & Commercial Subtotal	\$ 626,600	\$ 4,545,931	\$3,197,835	\$ 8,370,366
Indirect Costs				Total Budget
Contact Center				\$ 63,000
Online Audit				\$ 42,911
Outreach & Education				\$ 410,000
Evaluation				\$ 444,314
DSM Portfolio Total				\$ 9,330,591
Other Costs				Total Budget
Emerging Markets				\$ 200,000
Market Potential Study				\$ -
Other Costs Subtotal				\$ 200,000
DSM Portfolio Total including Other Costs				\$ 9,530,591

C. Cost Effectiveness Results

The total portfolio for the Vectren South programs passes the TRC and UCT test for both the Residential and Commercial & Industrial sectors. Table 9 below confirms that all programs pass the TRC at greater than one. In completing the cost effectiveness testing, Vectren South used 7.29% as the weighted average cost of capital (WACC) as approved by the Commission on April 27, 2011 in Cause No. 43839. For the 2018 - 2020 Plan, Vectren South utilized the avoided costs from the 2016 IRP.

Table 9: Vectren South 2018-2020 Plan Cost Effectiveness Results without Performance Incentive

Residential	TRC	UCT	RIM	Participant	TRC NPV \$	UCT NPV \$	Life time Cost/kWh	1st Year Cost/kWh
Residential Lighting	4.20	6.19	0.86	5.18	\$ 11,354,267	\$ 12,498,117	\$0.01	\$0.12
Residential Prescriptive	1.28	2.68	0.99	1.04	\$ 1,113,799	\$ 3,153,088	\$0.05	\$0.36
Residential New Construction	1.25	2.02	0.79	1.39	\$ 98,697	\$ 248,511	\$0.06	\$0.47
Home Energy Assessment & Weatherization	1.19	1.19	0.48	n/a	\$ 277,622	\$ 277,622	\$0.06	\$0.62
Income Qualified Weatherization	1.30	1.30	0.59	n/a	\$ 752,131	\$ 752,131	\$0.08	\$0.86
Food Bank - LED Bulb Distribution	8.42	8.42	0.88	n/a	\$ 2,503,138	\$ 2,503,138	\$0.01	\$0.12
Energy Efficient Schools	3.28	3.28	0.53	n/a	\$ 829,622	\$ 829,622	\$0.02	\$0.16
Residential Behavioral Savings	1.54	1.54	0.50	n/a	\$ 440,606	\$ 440,606	\$0.04	\$0.05
Appliance Recycling	1.19	1.02	0.36	n/a	\$ 83,146	\$ 12,513	\$0.05	\$0.20
Smart Thermostat Program	7.58	4.49	4.49	n/a	\$ 1,072,628	\$ 960,597	NA	n/a
CVR Residential	1.59	1.59	0.66	n/a	\$ 580,613	\$ 580,613	\$0.07	\$0.16
SmartDLC - Wifi DR/DLC Change-out	1.90	1.75	0.92	n/a	\$ 1,301,580	\$ 1,181,234	\$0.10	\$1.11
BYOT (Bring Your Own Thermostat)	2.80	1.92	1.92	n/a	\$ 498,223	\$ 370,438	NA	n/a
Residential Portfolio	2.25	2.73	0.79	4.06	\$20,906,071	\$23,808,228	\$0.04	\$0.21
Commercial & Industrial								
Commercial & Industrial	TRC	UCT	RIM	Participant	TRC NPV \$	UCT NPV \$	Life time Cost/kWh	1st Year Cost/kWh
Commercial Prescriptive	1.63	3.68	0.51	2.70	\$ 2,811,420	\$ 5,291,462	\$0.02	\$0.15
Commercial Custom	2.05	3.27	0.52	3.59	\$ 5,003,931	\$ 6,772,616	\$0.02	\$0.21
Small Business Direct Install	5.34	2.38	0.53	24.51	\$ 6,333,499	\$ 4,520,941	\$0.03	\$0.30
Commercial New Construction	2.01	1.69	0.45	9.55	\$ 652,266	\$ 530,199	\$0.03	\$0.29
Building Tune-up	1.09	1.13	0.34	9.35	\$ 46,816	\$ 67,027	\$0.04	\$0.26
Multi-Family Retrofit	3.99	2.28	0.53	24.86	\$ 167,808	\$ 125,751	\$0.03	\$0.33
CVR Commercial	1.30	1.30	0.55	n/a	\$ 219,929	\$ 219,929	\$0.07	\$0.13
Commercial & Industrial Total	2.21	2.69	0.51	4.57	\$15,235,668	\$17,527,926	\$0.02	\$0.22
Indirect Portfolio Level Costs					\$ (2,666,479)	\$ (2,666,479)		
Total Portfolio	2.05	2.44	0.63	4.31	\$33,475,259	\$38,669,674	\$0.03	\$0.24

First year costs are calculated by dividing total cost by total savings and do not include carry forward costs related to smart thermostat, BYOT and CVR programs.

Table 9.1: Vectren South 2018-2020 Plan Cost Effectiveness Results including Performance Incentive

Including Performance Incentive	TRC	UCT	RIM	Participant	TRC NPV \$	UCT NPV \$	Life time Cost/kWh	1st Year Cost/kWh
Total Portfolio	1.83	2.15	0.60	4.31	\$29,763,559	\$34,957,974	\$0.04	\$0.27

*Utility Performance Incentive does not include IQW or CVR.

6. New or Modified Program Initiatives

Vectren South's 2018-2020 filing largely extends the existing momentum of the portfolio of programs from 2016-2017 while applying the lessons learned from Vectren's program experience and evaluations as well as making refinements to key data and assumptions as described in this document.

Below is a summary which outlines notable changes for the 2018-2020 Plan from previous filings. More in depth details on the following topics can be found within the Program Descriptions portion of this document.

A. Residential Lighting

All programs within this filing will utilize light emitting diode (LED) lighting technologies per evaluation recommendations. This shift began in 2016 and the 2017 portfolio, as a whole, shifted focus from Compact Fluorescent Lamp (CFL) lamps to LED bulbs where performance, price and market readiness have all improved dramatically in recent years.

Additionally, new light bulbs standards are proposed to go into effect in 2020 due to the Energy Independence and Security Act (EISA). As proposed, this legislation would change the baseline and available savings for general service bulbs. The future of the 2020 EISA legislation is uncertain, thus Vectren will include LED bulbs in the plan for all three years. The incorporation of LED bulbs in 2020 is with the understanding that the measure's inclusion is pending regulatory outcomes.

There is still significant opportunity in the residential lighting market and thus Vectren plans to continue this offering as long as the market and legislation will allow. Lighting programs are consistently highly cost-effective and critical to the advancement of increased efficiency.

B. LED Food Bank

The LED Food Bank program was first offered in 2016 to help meet goals and serve the IQW population. This program will be part of the standard portfolio offering in 2018-2019 (2020 is not included due to EISA uncertainty). The program has been well received by food banks and pantries and Vectren South expects to see continued participation in 2018 and 2019.

C. Residential Prescriptive

Starting in 2018, duct sealing measure within the residential prescriptive program will require a small co-pay of \$50 by the customer. The purpose of the duct sealing measure change is to increase participation and promotion of deeper retrofit measures in homes.

D. Smart Thermostat Program Expansion

In 2016, Vectren South conducted a field study designed to analyze the EE and DR benefits associated with smart thermostats. Between the months of April and May 2016, Vectren South installed approximately 2,000 smart thermostats (1,000 Honeywell and 1,000 Nest) in customer homes. The program is currently under evaluation to measure effectiveness. Vectren South anticipates continuing to pay incentives to these 2,000 customers, who are currently enrolled in Vectren South's Summer Cycler program. In addition, and as a result of the field study, Vectren South anticipates expanding its Smart Thermostat program by offering the following two new programs during 2018 through 2020: (1) DLC Change-out program and (2) Bring Your Own Thermostat (BYOT) program. A description of these new programs is included.

E. Commercial & Industrial Prescriptive

Based upon input from the VOB during the planning process, Vectren South added several agricultural measures to the prescriptive measure offering list including:

- Livestock Waterer
- Agriculture - Poultry Farm LED Lighting
- VSD Milk Pump
- High Volume Low Speed Fans
- High Speed Fans (Ventilation and Circulation)
- Dairy Plate Cooler
- Heat Mat (Single, ~14x60")
- Automatic Milker Take Off
- HE Dairy Scroll Compressor
- Heat Reclaimer (No Pre-cooler Installed)

F. Commercial & Industrial Targeted Outreach

Vectren South's Commercial & Industrial Programs will seek out higher participation levels from schools, civic/government buildings and non-profit organizations and through a concentrated outreach approach. The concerted outreach will directly engage these segments to inform them of energy-saving opportunities and the available rebates through existing programs. Additional consideration can be provided to align program engagement with peak times to undertake energy efficiency projects: for schools, this means helping them schedule projects to be completed during summer vacations; for government institutions, this means planning around their fiscal cycles.

With this targeted outreach approach, Vectren South plans to assist 30 schools, 15 governmental buildings and 60 non-profit organizations in 2018-2020. Schools will likely receive support through the Prescriptive and Custom programs, while civic/government buildings and non-profit organizations may qualify for the Small Business Energy Savings program benefits.

G. Multi-Family Retrofit

The Multi-Family Retrofit program was offered as a small pilot starting in 2017 and will continue to be available to the Commercial & Industrial sector in 2018-2020. This program was initiated to continue to serve the multi-family sector as the integrated Multi-Family Direct Install program was discontinued in 2017 due to market saturation.

H. Emerging Markets

The Emerging Markets funding allows Vectren South's DSM portfolio to offer leading-edge program designs for next-generation technologies, services, and engagement strategies to growing markets in the Vectren South territory. Incentives promoted through this program may range from innovative rebate offerings to engineering and trade ally assistance to demand-control services that encourage early adoption of new, efficient technologies in high-impact market sectors. Depending on the development of certain technologies and growth areas in the service territory, a wide variety of projects and services are eligible. Because this program will focus on innovative new approaches and leading the DSM market, the exact list of measures cannot be set at this time. However, potential measures and services include: new technologies, such as Advanced Lighting Controls; new strategies for achieving significant energy savings, such as midstream incentives, contractor bids to provide energy efficiency projects, and targeting high-impact market sectors; and integrated DSM (iDSM) approaches, such as demand response, combined energy efficiency and demand response measures, and load shifting. This funding will not be used to support existing measures or programs, but rather support new program development or new measures within an existing program

7. Program Descriptions

A. Residential Lighting

The Residential Lighting Program is a market-based residential EE program designed to reach residential customers through retail outlets. The program consists of a buy-down strategy that provides incentives to consumers to facilitate the purchase of EE lighting products. The overall program goal is to increase the penetration of ENERGY STAR qualified lighting products based on the most up-to-date standards. As of 2017, the Residential Lighting program shifted 100% to LED bulbs.

There is still significant opportunity in the residential lighting market and thus Vectren plans to continue this offering as long as the market and legislation will allow. Lighting programs are consistently highly cost-effective and critical to the advancement of increased efficiency.

The future of the 2020 EISA legislation is uncertain, thus Vectren will include LED bulbs in the plan for all three years. The incorporation of LED bulbs in 2020 is with the understanding that the measure's inclusion is pending regulatory outcomes and uses conservative estimates.

Table 11: Residential Lighting Program Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Residential Lighting				
	Number of Measures	222,863	246,086	163,416	632,365
	Energy Savings kWh	7,610,617	8,340,595	6,075,005	22,026,217
	Peak Demand kW	942.2	1,028.9	791.4	2,762.4
	Total Program Budget \$	942,125	930,451	691,256	2,563,832
	Per Participant Avg Energy Savings (kWh)*	34.1	33.9	37.2	34.8
	Per Participant Avg Demand Savings (kW)*				0.004
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				67%

Eligible Customers

Any customer of a participating retailer in Vectren South's electric territory.

Marketing Plan

The program is designed to reach residential customers through retail outlets. Proposed marketing efforts include point of purchase promotional activities, the use of utility bill inserts and customer emails, utility web site and social media promotions and coordinated advertising with selected manufacturers and retail outlets.

Barriers/Theory

The program addresses the market barriers by empowering customers to take advantage of new lighting technologies through education and availability in the marketplace; accelerating the adoption of proven energy efficient technologies through incentives to lower price; and working with retailers to allow them to sell more high efficient products.

Initial Measures, Products and Services

The measures will include a variety of ENERGY STAR qualified lighting products currently available at retailers in Indiana, including LED bulbs, fixtures and ceiling fans.

Program Delivery

Vectren South will oversee the program and partner with Ecova to deliver the program.

Evaluation, Measurement and Verification

The implementation contractor will verify the paperwork of the participating retail stores. They will also spot check stores to assure that the program guidelines are being followed. A third party evaluator will evaluate the program using standard EM&V protocols.

B. Residential Prescriptive

Program Description

The program, also called Residential Efficient Products, is designed to incent customers to purchase energy efficient equipment by covering part of the incremental cost. The program also offers home weatherization rebates to residential customers for attic insulation, wall insulation and duct sealing. If a product vendor or contractor chooses to do so, the rebates can be presented as an “instant discount” to Vectren South residential customers on their invoice.

Table 12: Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Residential Prescriptive				
	Number of Measures	4,093	6,445	6,595	17,133
	Energy Savings kWh	1,747,547	1,918,174	1,979,280	5,645,001
	Peak Demand kW	1,558.1	1,775.2	1,910.2	5,243.5
	Total Program Budget \$	635,925	681,609	694,362	4,037
	Per Participant Avg Energy Savings (kWh)*				329.5
	Per Participant Avg Demand Savings (kW)*				0.306
	Weighted Avg Measure Life*				17
	Net To Gross Ratio				52%

Eligible Customers

Any residential customer located in the Vectren South electric service territory. For the equipment rebates, the applicant must reside in a single-family home or multi-family complex with up to 12 units. Only single-family homes are eligible for insulation and duct sealing remediation measures.

Marketing Plan

The marketing plan includes program specific materials that will target contractors, trade allies, distributors, manufacturers, industry organizations and appropriate retail outlets in the Heating, Ventilation and Air Conditioning (HVAC) industry. Marketing outreach medium include targeted direct marketing, direct contact by vendor personnel, trade shows and trade associations. Vectren will also use web banners, bill inserts, customer emails, social media outreach, press releases and mass market advertising. Program marketing will direct customers and contractors to the Vectren South website or call center for additional information.

Barriers/Theory

The initial cost is one of the key barriers. Customers do not always understand the long-term benefits of the energy savings from efficient alternatives. Trade allies are also often reluctant to sell the higher cost items as they do not want to be the high cost bidder. Incentives help address the initial cost issue and provide a good reason for Trade Allies to promote these higher efficient options.

Initial Measures, Products and Services

Details of the measures, savings, and incentives can be found in Appendix B. Measures included in the program will change over time as baselines change, new technologies become available and customer needs are identified.

Program Delivery

Vectren South will oversee the program and will partner with CLEAResult to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

As part of the Quality Assurance/Quality Control process, the vendor will provide 100% paper verification that the equipment/products purchased meet the program efficiency standards and a field verification of 5% of the measures installed. A third party evaluator will review the program using appropriate EM&V protocols.

C. Residential New Construction

Program Description

The Residential New Construction (RNC) program produces long-term energy savings by encouraging the construction of single-family homes, duplexes, or end-unit townhomes with only one shared wall that are inspected and evaluated through the Home Efficiency Rating System (HERS). Builders can select from two rebate tiers for participation. Gold Star homes must achieve a HERS rating of 61 to 65. Platinum Star homes must meet a HERS rating of 60 or less.

The RNC Program provides incentives and encourages home builders to construct homes that are more efficient than current building codes and address the lost opportunities in this customer segment by promoting EE at the time the initial decisions are being made. The Residential New Construction Program will work closely with builders, educating them on the benefits of energy efficient new homes. Homes may feature additional insulation, better windows, and higher efficiency appliances. The homes should also be more efficient and comfortable than standard homes constructed to current building codes.

Table 13: Program Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Residential New Construction				
	Number of Homes	139	139	139	417
	Energy Savings kWh	187,038	187,038	187,038	561,114
	Peak Demand kW	118.0	118.0	118.0	354.0
	Total Program Budget \$	85,345	87,132	88,940	261,417
	Per Participant Avg Energy Savings (kWh)*				1345.6
	Per Participant Avg Demand Savings (kW)*				0.849
	Weighted Avg Measure Life*				25
	Net To Gross Ratio				50%

Eligible Customers

Any customer or home builder constructing an eligible home in the Vectren South service territory.

Marketing Plan

In order to move the market toward an improved home building standard, education will be required for home builders, architects and designers as well as customers buying new homes. A combination of in-person meetings with these market participants as well as other educational methods will be necessary.

Barriers/Theory

The Residential New Construction program addresses the primary barriers of first cost as well as builder and customer knowledge. First cost is addressed by program incentives to help reduce the cost of the EE upgrades. The program provides opportunities for builders and developers to gain knowledge and skills

concerning EE building practices and coaches them on application of these skills. The HERS rating system allows customers to understand building design and construction improvements through a rating system completed by professionals.

Incentive Strategy

Program incentives are designed to be paid to both all-electric and combination homes that have natural gas heating. It is important to note that the program is structured such that an incentive will not be paid for an all-electric home that has natural gas available to the home site. Incentives can be paid to either the home builder or the customer/account holder. Incentives will be based on the rating tier qualification. For all-electric homes, where Vectren South natural gas service is not available, the initial incentives will be:

Tier	HERS Rating	Total Incentive
Platinum	60 or less	\$800
Gold	61 to 65	\$700

For homes with central air conditioning and Vectren South natural gas space heating, the electric portion of the incentive will be:

Tier	HERS Rating	Total Incentive	Gas Portion	Electric Portion
Platinum	60 or less	\$800	\$600	\$200
Gold	61 to 65	\$700	\$525	\$175

Program Delivery

Vectren South will oversee the program and will partner with CLEAResult to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory.

Evaluation, Measurement and Verification

Field inspections will occur at least once during construction and upon completion by a certified HERS Rater. As part of the Quality Assurance/Quality Control process, the vendor will provide 100% paper verification that the equipment/products purchased meet the program efficiency standards. A third party evaluator will evaluate the program using standard EM&V protocols.

D. Home Energy Assessments & Weatherization

Program Description

The Home Energy Assessment and Weatherization Program will be offered jointly by Vectren South Gas and Electric. This program targets a hybrid phased approach that combines helping customers analyze and understand their energy use via an on-site energy assessment, providing direct installation of energy efficient measures including low-flow water fixtures, LED bulbs and thermostats, as well as provide deeper retrofit measures.

- Phase 1 - Assessors will perform a walk-through assessment of the home, collecting data for use in identifying cost-effective energy efficient improvements and appropriate direct install measures. Audit report provided to customer onsite will showcase deeper retrofit measure opportunities within the home.
- Phase 2 - If the home is eligible for air sealing and/or duct sealing, the Assessor will provide the information to the customer for scheduling the Phase 2 appointment via the online scheduling portal for a co-pay of \$50. Customers who choose to install attic insulation will be referred to the Residential Energy Efficient Rebate Program.

Customers can schedule an assessment appointment in one of the following two ways: (1) by visiting vectren.com/saveenergy to schedule an appointment through self-booking tool; or (2) calling the call center to speak with a program representative. Customers who opt to receive email notifications will receive confirmation and appointment reminders prior to the assessment.

Table 14: Home Energy Assessments & Weatherization Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Home Energy Assessment & Weatherization				
	Number of Homes	1,210	1,210	1,210	3,630
	Energy Savings kWh	863,991	863,991	863,991	2,591,973
	Peak Demand kW	191.6	192.0	192.0	575.6
	Total Program Budget \$	526,473	533,934	541,669	1,602,076
	Per Participant Avg Energy Savings (kWh)*				714.0
	Per Participant Avg Demand Savings (kW)*				0.159
	Weighted Avg Measure Life*				12
	Net To Gross Ratio				98%

Eligible Customers

Vectren South residential customers with electric service at a single-family residence, provided the home was not built within the past five years and has not had an audit within the last three years. Additionally, the home should be owner-occupied (or renter where occupants have the electric service in their name).

Marketing Plan

Proposed marketing efforts include utilizing direct mailers, email blasts, Vectren South online audit tools, bill inserts, social media outreach, as well as other outreach and education efforts and promotional campaigns throughout the year to ensure participation levels are maintained.

Barriers/Theory

The primary barrier addressed through this program is customer education and awareness. Often customers do not understand what opportunities exist to reduce their home energy use. This program not only informs the customer but helps them start down the path of energy savings by directly installing low-cost measures. The program is also a “gateway” to other Vectren South gas and electric programs.

Initial Measures, Products and Services

The direct install measures available for installation at no cost include:

- Kitchen & Bathroom Aerators
- Filter Whistle
- LED bulbs
- Low Flow Showerhead
- Pipe Wrap
- Water Heater Temperature Setback
- Wi-fi Thermostat

For customers who elect to move forward with Phase 2, Duct Sealing and Air Sealing are available for a \$50 co-pay.

Program Delivery

Vectren South will oversee the program and will partner with CLEAResult to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

To assure compliance with program guidelines, field visits with auditors will occur as well as spot check verifications of measure installations. A third party evaluator will evaluate the program using standard EM&V protocols.

E. Income Qualified Weatherization

Program Description

The Income Qualified Weatherization program is designed to produce long-term energy and demand savings in the residential market. The program is designed to provide weatherization upgrades to low-income homes that otherwise would not have been able to afford the energy saving measures. The program provides direct installation of energy-saving measures and educates consumers on ways to reduce energy consumption. Customers eligible through the Income Qualified Weatherization Program will have opportunity to receive deeper retrofit measures including refrigerators, attic insulation, duct sealing, and air infiltration reduction. This year, we will engage with the manufactured homes population and offer the same measures offered to single family homes.

Collaboration and coordination between gas and electric low-income programs along with state and federal funding is recommended to provide the greatest efficiencies among all programs. The challenge of meeting the goals set for this program have centered on health and safety as well as customer cancellations and scheduling. Vectren South is committed to finding innovative solutions to these areas. A health and safety budget has been established, and we continue to work on improving methods of customer engagement with various confirmations via phone and email reminders prior to the appointment.

Table 15: Income Qualified Weatherization Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Income Qualified Weatherization				
	Number of Homes	475	500	525	1,500
	Energy Savings kWh	959,988	1,046,148	1,130,945	3,137,081
	Peak Demand kW	458.8	499.4	540.2	1,498.4
	Total Program Budget \$	841,848	899,806	958,593	2,700,247
	Per Participant Avg Energy Savings (kWh)*				2091.4
	Per Participant Avg Demand Savings (kW)*				0.999
	Weighted Avg Measure Life*				14
	Net To Gross Ratio				100%

Eligible Customers

The Residential Low Income Weatherization Program targets single-family and manufactured homeowners and tenants who have electric service in their name with Vectren South and a total household income up to 200% of the federally-established poverty level.

Marketing Plan

Vectren South will provide a list to the implementation contractor of high consumption customers who have received Energy Assistance Program (EAP) funds within the past 12 months to help prioritize those customers who will benefit most from the program. This will also help in any direct marketing activities to specifically target those customers.

Barriers/Theory

Lower-income homeowners do not have the money to make even simple improvements to lower their energy usage and often live in homes with the most need for EE improvements. They may also lack the knowledge, experience, or capability to do the work. Health and safety can also be at risk for low-income homeowners, as their homes typically are not as “tight”, and indoor air quality can be compromised. In order to increase participation and eligibility, Vectren South has incorporated a Health and Safety budget of \$250 per home. This program provides those customers with basic improvements to help them start saving energy without needing to make the investment themselves.

Initial Measures, Products and Services

Measures available for installation will vary based on the home and include:

- LED bulbs/lamps
- Low flow kitchen and bath aerators
- Low flow showerheads
- Pipe wrap
- Filter whistles
- Infiltration reduction
- Attic insulation
- Duct repair, seal and insulation
- Refrigerator replacement
- Programmable/Smart thermostat
- Smart power strips

Program Delivery

Vectren South will oversee the program and will partner with CLEAResult to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

To assure quality installations, 5% of the installations will be field inspected. A third party evaluator will evaluate the program using standard EM&V protocols.

F. LED Food Bank

Program Description

The food bank program provides LED bulbs to food pantries in Vectren South’s electric service territory. This program targets hard to reach, low income customers in the Vectren South electric territory. All food pantry recipients must provide proof of income qualification to receive the food baskets.

The program implementer purchases bulbs from a manufacturer and bulbs are shipped in bulk to the partner food bank. Food banks then distribute the bulbs to the respective food pantries in its network. Pantries include bulbs when assembling food packages and bulbs are provided to food recipients.

Table 16: LED Food Bank Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Food Bank - LED Bulb Distribution				
	Number of Measures	50,496	50,496	0	100,992
	Energy Savings kWh	1,401,264	1,401,264	0	2,802,528
	Peak Demand kW	148.8	148.8	0.0	297.6
	Total Program Budget \$				349,449
	Per Participant Avg Energy Savings (kWh)*				27.8
	Per Participant Avg Demand Savings (kW)*				0.003
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Eligible Customers

Any participant visiting a food pantry in Vectren South’s electric territory.

Marketing Plan

The program will be marketed directly to food banks in the Vectren South electric service territory as well as other channels identified by the implementation contractor.

Barriers/Theory

Lower-income homeowners do not have the money to make even simple improvements to lower their energy usage and often live in homes with the most need for EE improvements. They may also lack the knowledge, experience, or capability to do the work. This program also addresses the barrier of education and awareness of EE opportunities. Working through food banks, participants receive LED bulbs and are educated about opportunities to save energy.

Initial Measures, Products and Services

Each participating food pantry will place a bundle of four (4) LED bulbs in food packages.

Program Delivery

Vectren South will oversee the program and will partner with CLEAResult and the Tri-State Area Food Bank to deliver the program.

Evaluation, Measurement and Verification

A third party evaluator will evaluate the program using standard EM&V protocols. A postcard will be provided to each participant to help acquire necessary information for EM&V. The postcard will be a postage paid reply card and 'drop box' will also be provided for customers to voluntarily supply their information for verification.

G. Energy Efficient Schools

Program Description

The Energy Efficient Schools Program is designed to impact students by teaching them how to conserve energy and to produce cost effective electric savings by influencing students and their families to focus on the efficient use of electricity.

The program consists of a school education program for 5th grade students attending schools served by Vectren South. To help in this effort, each child that participates will receive a take-home energy kit with various energy saving measures for their parents to install in the home. The kits, along with the in-school teaching materials, are designed to make a lasting impression on the students and help them learn ways to conserve energy.

Table 17: Energy Efficient Schools Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Energy Efficient Schools				
	Number of Kits	2,400	2,500	2,600	7,500
	Energy Savings kWh	899,706	937,194	645,216	2,482,115
	Peak Demand kW	52.8	52.8	52.8	158.4
	Total Program Budget \$	131,696	136,805	119,995	388,496
	Per Participant Avg Energy Savings (kWh)*				330.9
	Per Participant Avg Demand Savings (kW)*				0.021
	Weighted Avg Measure Life*				10
	Net To Gross Ratio				100%

Eligible Customers

The program will be available to selected 5th grade students/schools in the Vectren South electric service territory.

Marketing Plan

The program will be marketed directly to elementary schools in Vectren South electric service territory as well as other channels identified by the implementation contractor. A list of the eligible schools will be provided by Vectren South to the implementation contractor for direct marketing to the schools via email, phone, and mail (if necessary) to obtain desired participation levels in the program.

Barriers/Theory

This program addresses the barrier of education and awareness of EE opportunities. Working through schools, both students and families are educated about opportunities to save. As well, the families receive energy savings devices they can install to begin their savings.

Initial Measures, Products and Services

The kits for students will include:

- Low flow showerhead
- Low flow kitchen aerator
- Low flow bathroom aerator (2)
- LED bulbs (2)
- LED nightlight
- Filter whistle

Program Delivery

Vectren South will oversee the program and will partner with National Energy Foundation (NEF) to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

Classroom participation will be tracked. A third party evaluator will evaluate the program using standard EM&V protocols.

H. Residential Behavior Savings

Program Description

The Residential Behavioral Savings Program motivates behavior change and provides relevant, targeted information to the consumer through regularly scheduled direct contact via mailed and emailed home energy reports. The report and web portal include a comparison against a group of similarly sized and equipped homes in the area, usage history comparisons, goal setting tools, and progress trackers. The Home Energy Report program anonymously compares customers' energy use with that of other customers with similar home size and demographics. Customers can view the past 12 months of their energy usage and compare and contrast their energy consumption and costs with others in the same neighborhood. Once a consumer understands better how they use energy, they can then start conserving energy.

Program data and design was provided by OPower, the implementation vendor for the program. OPower provides energy usage insight that drives customers to take action by selecting the most relevant information for each particular household, which ensures maximum relevancy and high response rate to recommendations.

Table 18: Residential Behavior Savings Program Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Residential Behavioral Savings				
	Number of Participants	41,348	38,203	35,298	114,849
	Energy Savings kWh	6,470,000	5,970,000	5,600,000	18,040,000
	Peak Demand kW	1,351	1,248	1,153	3,752
	Total Program Budget \$	305,622	285,585	286,545	877,752
	Per Participant Avg Energy Savings (kWh)*				157.1
	Per Participant Avg Demand Savings (kW)*				0.033
	Weighted Avg Measure Life*				1
	Net To Gross Ratio				100%

Eligible Customers

Residential customers who receive electric service from Vectren South are eligible to participate in this integrated natural gas and electric EE program.

Barriers/Theory

The Residential Behavioral Savings program provides residential customers with better energy information through personalized reports delivered by mail, email and an integrated web portal to help them put their energy usage in context and make better energy usage decisions. Behavioral science research has demonstrated that peer-based comparisons are highly motivating ways to present

information. The program will leverage a dynamically created comparison group for each residence and compare it to other similarly sized and located households.

Implementation & Delivery Strategy

The program will be delivered by OPower and include energy reports and a web portal. Customers typically receive between 4 to 6 reports annually and monthly emailed reports. These reports provide updates on energy consumption patterns compared to similar homes and provide energy savings strategies to reduce energy use. They also promote other Vectren South programs to interested customers. The web portal is an interactive system for customers to perform a self-audit, monitor energy usage over time, access energy savings tips and be connected to other Vectren South gas and electric programs.

Program Delivery

Vectren South will oversee the program and partner with OPower to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas/electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

A third party evaluator will complete the evaluation of this program and work with Vectren South to select the participant and non-participant groups.

I. Appliance Recycling

Program Description

The Residential Appliance Recycling program encourages customers to recycle their old inefficient refrigerators and freezers in an environmentally safe manner. The program recycles operable refrigerators and freezers so the appliance no longer uses electricity, and keeps 95% of the appliance out of landfills. An older refrigerator can use up to three times the amount of energy as new efficient refrigerators. An incentive of \$50 will be provided to the customer for each operational unit picked up.

Table 19: Appliance Recycling Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Appliance Recycling				
	Number of Measures	950	930	920	2,800
	Energy Savings kWh	913,771	894,534	884,915	2,693,219
	Peak Demand kW	120.7	118.1	116.8	355.6
	Total Program Budget \$	174,759	180,648	186,532	541,939
	Per Participant Avg Energy Savings (kWh)*				961.9
	Per Participant Avg Demand Savings (kW)*				0.127
	Weighted Avg Measure Life*				8
	Net To Gross Ratio				54%

Eligible Customers

Any residential customer with an operable secondary refrigerator or freezer receiving electric service from Vectren South.

Marketing Plan

The program will be marketed through a variety of mediums, including the use of utility bill inserts and customer emails, press releases, retail campaigns coordinated with appliance sales outlets as well as the potential for direct mail, web and social and mass media promotional campaigns.

Barriers/Theory

Many homes have second refrigerators and freezers that are very inefficient. Customers are not aware of the high energy consumption of these units. Customers also often have no way to move and dispose of the units, so they are kept in homes past their usefulness. This program educates customers about the waste of these units and provides a simple way for customers to dispose of the units.

Program Delivery

Vectren South will work directly with Appliance Recycling Centers of America Inc. (ARCA), to implement this program.

Evaluation, Measurement and Verification

Recycled units will be logged and tracked to assure proper handling and disposal. The utility will monitor the activity for disposal. Customer satisfaction surveys will also be used to understand the customer experience with the program. A third party evaluator will evaluate the program using standard EM&V protocols.

J. Smart Thermostat Program

Program Description

In 2016, Vectren South conducted a field study designed, in part, to analyze the different approaches to DR that are available through smart thermostats. Between the months of April and May, Vectren South installed approximately 2,000 smart thermostats (1,000 Honeywell and 1,000 Nest) in customer homes. Vectren South leveraged these thermostats to manage DR events during the summer in an effort to evaluate the reduction in peak system loads. These smart devices are connected to Wi-Fi and reside on the customer's side of the electric meter and are used to communicate with customer's air conditioning systems. The program provides Vectren South with increased customer contact opportunities and the ability to facilitate customers' shift of their energy usage to reduce peak system loads. Vectren South will not install additional thermostats pursuant to this program; however, incentives will continue to be paid to participating customers.

Table 20: Smart Thermostat Program Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	Smart Thermostat Program (incentives)				
	Number of Measures	0	0	0	0
	Energy Savings kWh				
	Peak Demand kW	1,200	1,200	1,200	3,600
	Total Program Budget \$	97,639	98,222	98,798	294,659
	Per Participant Avg Energy Savings (kWh)*				0.0
	Per Participant Avg Demand Savings (kW)*				1.800
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

*No additional kWh savings will be recorded; demand savings related to cycling only.

Incentive Strategy

The program budget is for incentives for existing customers to participate in the Demand Response events for 2018-2020.

Program Delivery

Vectren South will oversee the program.

Evaluation, Measurement and Verification

A third party evaluator will evaluate the program using standard EM&V protocols.

K. Smart DLC – Wi-Fi/DLC Switchout Program

Program Description

Since 1992, Vectren South has operated a Direct Load Control (DLC) program called Summer Cyclor that reduces residential and small commercial air-conditioning and water heating electricity loads during summer peak hours. While this technology still helps lower peak load demand for electricity, this aging technology will be phased out over time. Vectren’s Summer Cyclor program has served Vectren and its customers well for more than two decades, but emerging technology is now making the program obsolete.

By installing connected devices in customer homes rather than using one-way signal switches, Vectren will be able to provide its customer base deeper energy savings opportunities and shift future energy focus to customer engagement rather than traditional program goals and rules. The most recent Vectren electric DSM evaluation has demonstrated that smart thermostats outperform standard programmable thermostats and are a practical option to transition into future customer engagement strategies.

Smart thermostat installations are also a feasible solution to multiple utility and customer quandaries. Past Vectren evaluations have discovered that its customers program less than half of all programmable thermostats installed, hindering potential savings and acting a disincentive for customers to become involved in how their home uses energy. This issue is coupled with the uncertainty of whether standard DLC switches in the field are in working order and the fact that the switches cannot record or yield any savings data. With these issues mitigated, utility management burden is reduced, customer engagement and satisfaction is increased, and Vectren will be able to obtain better home usage data for creation and implementation of future DSM programs.

If approved by the Commission, Vectren South anticipates replacing DLC switches with smart thermostats over time, as the benefits associated with this emerging technology far outweigh the benefits associated with DLC switches. In 2018, Vectren South will begin its phase out of the Summer Cyclor program by removing approximately 1,000 Sumer Cyclor devices and replacing them with Wi-Fi thermostats that utilize demand response technology. Customers will receive a professionally installed Wi-Fi thermostat at no additional cost and a monthly bill credit of \$5 during the months of June to September. The current monthly credit for Summer Cyclor is also \$5; therefore the annual bill credit by customer does not change.

By replacing the Summer Cyclor devices, Vectren South will eliminate the annual inspection and maintenance (“I&M costs”) for the Summer Cyclor program, and thus offer a more reliable DR program. Long-term, Vectren South will almost eliminate the annual ongoing inspection and maintenance cost. By

replacing 1,000 switches each year, Vectren continues to have resources to manage peak demand for electricity during the summer months.

Table 22: SmartDLC – Wi-Fi/DLC Switchout Program& Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	SmartDLC - Wifi DR/DLC Changeout				
	Number of Participants	1,000	1,000	1,000	3,000
	Energy Savings kWh	466,690	466,690	466,690	1,400,070
	Peak Demand kW	600.0	600.0	600.0	1,800.0
	Total Program Budget \$	517,759	562,148	606,532	1,686,439
	Per Participant Avg Energy Savings (kWh)*				466.7
	Per Participant Avg Demand Savings (kW)*				0.600
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Eligible Customers

Customers in the Vectren South territory who currently participate in the DLC Summer Cyclers program and have access to Wi-Fi.

Marketing Plan

Proposed marketing efforts include utilizing direct mailers, email blasts, Vectren South online audit tools, bill inserts as well as other outreach and education efforts and promotional campaigns throughout the year to ensure participation levels are maintained.

Incentive Strategy

Customers will receive a professionally installed Wi-Fi thermostat at no additional cost and a monthly bill credit of \$5 during the months of June to September.

Program Delivery

Vectren South will oversee the program.

Evaluation, Measurement and Verification

A third party evaluator will evaluate the program using standard EM&V protocols.

L. Bring Your Own Thermostat (BYOT)

Program Description

The Bring Your Own Thermostat (“BYOT”) program is a further expansion of the residential smart thermostat initiative. BYOT allows customers to purchase their own device from multiple vendors and participate in DR with Vectren South and other load curtailment programs managed through the utility. Taking advantage of two-way communicating smart thermostats, the BYOT program can help reduce acquisition costs for load curtailment programs and improve customer satisfaction.

Table 23: BYOT Program Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	BYOT (Bring Your Own Thermostat)				
	Number of Participants	400	400	400	1,200
	Energy Savings kWh				
	Peak Demand kW	240.0	240.0	240.0	720.0
	Total Program Budget \$	111,036	178,592	146,128	435,756
	Per Participant Avg Energy Savings (kWh)*				0.0
	Per Participant Avg Demand Savings (kW)*				0.600
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Eligible Customers

Residential single or multi-family customers in the Vectren South territory with access to Wi-Fi and who own a qualifying compatible Wi-Fi thermostat that operates the central air-conditioning cooling system.

Marketing Plan

Proposed marketing efforts include utilizing direct mailers, email blasts, Vectren South online audit tools, bill inserts as well as other outreach and education efforts and promotional campaigns throughout the year to ensure participation levels are maintained.

Incentive Strategy

Customers will receive a one-time enrollment incentive of \$75 and a bill credit of \$5 during the months of June to September. The enrollment incentive will be provided in the first year to new enrollees only.

Program Delivery

Vectren South will oversee the program.

Evaluation, Measurement and Verification

A third party evaluator will evaluate the program using standard EM&V protocols.

M. Conservation Voltage Reduction - Residential and Commercial and Industrial

Program Description

Conservation Voltage Reduction (CVR) is a technology that reduces energy usage and peak demand through automated monitoring and control of voltage levels provided on distribution circuits. End use customers realize lower energy and demand consumption when CVR is applied to the distribution circuit from which they are served.

A distribution circuit facilitates electric power transfer from an electric substation to utility meters located at electric customer premises. Electric power customers employ end-use electric devices (loads) that consume electrical power. At any point along a single distribution circuit, voltage levels vary based upon several parameters, mainly including, but not exclusive of, the actual electrical conductors that comprise the distribution circuit, the size and location of electric loads along the circuit, the type of end-use loads being served, the distance of loads from the power source, and losses incurred inherent to the distribution circuit itself. All end-use loads require certain voltage levels to operate and standards exist to regulate the levels of voltage delivered by utilities. In Indiana, Vectren South is required to maintain a steady state +/- 5% of the respective baseline level as specified by ANSI C84.1 (120 volt baseline yields acceptable voltage range of 114 volts to 126 volts).

Historically, utilities including Vectren South have set voltage levels near the upper limit at the distribution circuit source (substation) and have applied voltage support devices such as voltage regulators and capacitors along the circuit to assure that all customers are provided voltages within the required range. This basic design economically met the requirements by utilizing the full range (+/- 5%) of allowable voltages while only applying independent voltage support where needed. This basic design has worked well for many years. However, in the 1980's, utilities recognized that loads on the circuits would actually consume less energy if voltages in the lower portion of the acceptable range were provided. In fact, many utilities, including Vectren South, established emergency operating procedures to lower voltage at distribution substations by 5% during power shortage conditions.

The recent focus on EE and the availability of technology that allows monitoring and tighter control of circuit voltage conditions has led to development of automated voltage control schemes which coordinate the operation of voltage support devices and allow more customers on the circuit to be served at voltages in the lower portion of the acceptable range.

Once applied, a step change in energy and demand consumption by customers is realized, dependent upon where customer loads are located within the voltage zones, the load characteristics of the circuit, and how

end-use loads respond to the voltage reduction. The resultant energy and demand consumption reduction persist at the new levels as long as tighter voltage bandwidth operation is applied. As a result, ongoing energy and demand savings persists for the duration of the life of the CVR equipment and as long as the equipment is maintained and operated in the voltage bandwidth mode.

With Commission approval, Vectren South will capitalize the costs to implement the CVR program and seek to recover through the annual Demand Side Management Adjustment (DSMA) mechanism the carrying costs and depreciation expense associated with the implementation along with annual, ongoing Operation and Maintenance (O&M) expense, a representative share of Vectren South’s DSM support staff and administration costs and related EM&V cost. The budget below is reflective of this request.

Table 21: Conservation Voltage Reduction Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Residential	CVR Residential				
	Number of Participants			5,324	5,324
	Energy Savings kWh			1,461,047	1,461,047
	Peak Demand kW			263	263
	Total Program Budget \$	118,786	114,907	230,134	463,827
	Per Participant Avg Energy Savings (kWh)*				274.4
	Per Participant Avg Demand Savings (kW)*				0.049
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	CVR Commercial				
	Number of Participants			558	558
	Energy Savings kWh			1,032,655	1,032,655
	Peak Demand kW			185.9	185.9
	Total Program Budget \$	108,834	105,297	137,003	351,134
	Per Participant Avg Energy Savings (kWh)*				1850.6
	Per Participant Avg Demand Savings (kW)*				0.333
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Program Delivery

Vectren South will oversee the program and will partner with an implementer to deliver the program. One unit installation will be completed in 2017, and as an expansion of this program, one additional unit will be installed in 2020.

Eligible Customers

Vectren South has identified substations that will benefit from the CVR program. For this program, one substation will be installed in 2020.

Barriers/Theory

CVR is both a DR and an EE program. First, it seeks to cost effectively deploy new technology to targeted distribution circuits, in part to reduce the peak demand experienced on Vectren South's electrical power supply system. The voltage reduction stemming from the CVR program operates to effectively reduce consumption during the times in which system peaks are set and as a result directly reduces peak demand. CVR also cost effectively reduces the level of ongoing energy consumption by end-use devices located on the customer side of the utility meter as many end-use devices consume less energy with lower voltages consistently applied. Like an equipment maintenance service program, the voltage optimization allows the customer's equipment to operate at optimum levels which saves energy without requiring direct customer intervention or change.

Initial Measures, Products and Services

Vectren South will install the required communication and control equipment on the appropriate circuits from the substation. No action is required of the customers.

N. Commercial and Industrial Prescriptive

Program Description

The Commercial & Industrial (C&I) Prescriptive Program is designed to provide financial incentives on qualifying products to produce greater energy savings in the C&I market. The rebates are designed to promote lower electric energy consumption, assist customers in managing their energy costs, and build a sustainable market around EE.

Program participation is achieved by offering incentives structured to cover a portion of the customer's incremental cost of installing prescriptive efficiency measures.

Table 24: Commercial & Industrial Prescriptive Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Commercial Prescriptive				
	Number of Measures	7,024	5,981	6,856	19,861
	Energy Savings kWh	4,999,125	4,501,186	5,002,621	14,502,932
	Peak Demand kW	378.2	325.4	369.0	1,072.6
	Total Program Budget \$	729,398	655,370	731,330	2,116,098
	Per Participant Avg Energy Savings (kWh)*				730.2
	Per Participant Avg Demand Savings (kW)*				0.054
	Weighted Avg Measure Life*				14
	Net To Gross Ratio				87%

Eligible Customers

Any eligible participating commercial or industrial customer receiving Vectren South electric service.

Marketing Plan

Proposed marketing efforts include trade ally outreach, trade ally meetings, direct mail, face-to-face meetings with customers, marketing campaigns and bonuses, web-based marketing, and coordination with key account executives.

Barriers/Theory

Customers often have the barrier of higher first cost for EE measures, which precludes them from purchasing the more expensive EE alternative. They also lack information on high-efficiency alternatives. Trade allies often run into the barrier of not being able to promote more EE alternatives because of first cost or lack of knowledge. Trade allies also gain credibility with customers for their EE claims when a measure is included in a utility prescriptive program. Through the program the Trade allies can promote EE measures directly to their customers encouraging them to purchase more efficient equipment while helping customers get over the initial cost barrier.

Initial Measures, Products and Services

Measures will include high efficient lighting and lighting controls, HVAC equipment including variable frequency drives, commercial kitchen equipment including electronically commutated motors (ECMs), and miscellaneous items including compressed air equipment.

Note that measures included in the program will change over time as baselines change, new technologies become available and customer needs are identified. Detailed measure listings, participation and incentives are in Appendix B.

Implementation & Delivery Strategy

The program will be delivered primarily through the trade allies working with their customers. Vectren South and its implementation partners will work with the trade allies to make them aware of the offerings and help them promote the program to their customers. The implementation partner will provide training and technical support to the trade allies to become familiar with the EE technologies offered through the program. The program will be managed by the same implementation provider as the Commercial & Industrial Custom program so that customers can seamlessly receive assistance and all incentives can be efficiently processed through a single procedure.

Incentive Strategy

Incentives are provided to customers to reduce the difference in first cost between the lower efficient technology and the high efficient option. There is no fixed incentive percentage amount based on the difference in price because some technologies are newer and need higher amounts. Others have been available in the marketplace longer and do not need as much to motivate customers. Incentives will be adjusted to respond to market activity and bonuses may be available for limited time, if required, to meet goals.

Program Delivery

Vectren South will oversee the program partner Nexant to deliver the program.

Evaluation, Measurement and Verification

Site visits will be made on 5% of the installations, as well as all projects receiving incentive greater than \$20,000, to verify the correct equipment was installed. Standard EM&V protocols will be used for the third party evaluation of the program.

O. Commercial and Industrial Custom

Program Description

The Commercial & Industrial (C&I) Custom Program promotes the implementation of customized energy saving measures at qualifying customer facilities. Incentives promoted through this program serve to reduce the cost of implementing energy saving projects and upgrading to high-efficiency equipment. Due to the nature of a custom EE program, a wide variety of projects are eligible.

Table 25: Commercial & Industrial Custom Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Commercial Custom				
	Number of Measures	50	50	55	155
	Energy Savings kWh	5,000,000	5,000,000	5,500,000	15,500,000
	Peak Demand kW	476.0	476.0	524.0	1,476.0
	Total Program Budget \$	1,019,072	1,022,184	1,160,256	3,201,512
	Per Participant Avg Energy Savings (kWh)*				100000.0
	Per Participant Avg Demand Savings (kW)*				9,523
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Eligible Customers

Any participating commercial or industrial customer receiving electric service from Vectren South.

Marketing Plan

Proposed marketing efforts include coordination with key account representatives to leverage the contacts and relationships they have with the customers. Direct mail, media outreach, trade shows, marketing campaigns and bonuses, trade ally meetings, and educational seminars could also be used to promote the program.

Barriers/Theory

Applications of some specific EE technologies are unique to that customer's application or process. The energy savings estimates for these measures are highly variable and cannot be assessed without an engineering estimation of that application; however, they offer a large opportunity for energy savings. To promote the installation of these high efficient technologies or measures, the Commercial & Industrial Custom program will provide incentives based on the kWh saved as calculated by the engineering analysis. To assure savings, these projects will require program engineering reviews and pre approvals. The custom energy assessments offered will help remove customer barriers regarding opportunity identification and determining energy savings potential.

Initial Measures, Products and Services

All technologies or measures that save kWh qualify for the program. Facility energy assessments will be offered to customers who are eligible and encouraged to implement multiple EE measures. Detailed measure listings, participation and incentives are in Appendix B.

Implementation & Delivery Strategy

The implementation partner will work collaboratively with Vectren South staff to recruit and screen customers for receiving facility energy assessments. The implementation partner will also provide engineering field support to customers and trade allies to calculate the energy savings. Customers or trade allies with a proposed project will complete an application form with the energy savings calculations for the project. The implementation team will review all calculations and where appropriate complete site visits to assess and document pre-installation conditions. Customers will be informed and funds will be reserved for the project. Implementation engineering staff will review the final project information as installed and verify the energy savings. Incentives are then paid on the verified savings.

The implementation partner will work collaboratively with Vectren South staff to recruit and screen customers for receiving facility energy assessments, technical assistance and energy management education. The program will seek to gain customer commitment towards setting up an energy management process and implementing multiple EE improvements. The implementation partner will help customers achieve agreed upon milestones in support for their commitment.

Incentive Strategy

Incentives will be calculated on a per kWh basis. The initial kWh rate will be \$0.12/kWh and is paid based on the first year annual savings reduction. Rates may change over time and vary with some of the special initiatives. Incentives will not pay more than 50% of the project cost nor provide incentives for projects with paybacks less than 12 months. Vectren South will offer a cost share on facility energy assessments that will cover up to 100% of the assessment cost.

Program Delivery

Vectren South will oversee the program partner Nexant to deliver the program.

Evaluation, Measurement and Verification

Given the variability and uniqueness of each project, all projects will be pre-approved. Pre and post visits to the site to verify installation and savings will be performed as defined by the program implementation partner. Monitoring and verification may occur on the largest projects. A third party evaluator will be used for this project and use standard EM&V protocols.

P. Small Business Direct Install

Program Description

The Small Business Direct Install Program provides value by directly installing EE products such as high efficiency lighting, pre-rinse sprayers, refrigeration controls, electrically-commutated motors, smart thermostats and vending machine controls. The program helps businesses identify and install cost effective energy saving measures by providing an on-site energy assessment customized for their business.

Table 26: Small Business Direct Install Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Small Business Direct Install				
	Number of Projects	146	142	127	415
	Energy Savings kWh	4,032,934	3,905,372	3,900,306	11,838,612
	Peak Demand kW	667.0	645.0	567.0	1,879.0
	Total Program Budget \$	1,149,640	1,182,037	1,173,133	3,504,810
	Per Participant Avg Energy Savings (kWh)*				28526.8
	Per Participant Avg Demand Savings (kW)*				4.528
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				95%

Eligible Customers

Any participating Vectren South business customer with a maximum peak energy demand of less than 400 kW.

Marketing Plan

The Small Business Direct Install Program will be marketed primarily through in-network trade ally outreach. The program implementer will provide trade ally-specific marketing collateral to support trade allies as they connect with customers.

The program will provide targeted marketing efforts as needed to individual customer segments (e.g., hospitality, grocery stores, and retail) to increase participation in under-performing segments, including direct customer outreach and enhanced incentive campaigns. Additional program marketing may occur through direct mail, trade associations, local business organizations, marketing campaigns and bonuses, educational seminars, and direct personal communication from Vectren South staff and third-party contractors.

Barriers/Theory

Small business customers generally do not have the knowledge, time or money to invest in EE upgrades. This program assists these small businesses with direct installation and turn-key services to get measures installed at no or low out-of-pocket cost.

There is an implementation contractor in place providing suggested additions and changes to the program based on results and local economics.

Implementation & Delivery Strategy

Trade Ally Network: Trained trade ally energy advisors will provide energy assessments to business customers with less than 400 kW of annual peak demand. The program implementer will issue an annual Request for Qualification (RFQ) to select the trade allies with the best ability to provide high-quality and cost-effective service to small businesses, and provide training to Small Business Energy Solutions trade allies on the program process, with an emphasis on improving energy efficiency sales.

Energy Assessment: Trade allies will walk through small businesses and record site characteristics and energy efficiency opportunities at no cost to the customer. They will provide an energy assessment report that will detail customer-specific opportunities, costs, energy savings, incentives, and simple payback periods. The trade ally will then review the report with the customer, presenting the program benefits and process, while addressing any questions.

Initial Measures, Products and Services

Details of the measures, savings, and incentives can be found in Appendix B. The program will have two types of measures provided. The first are measures that will be installed at no cost to the customer. Some available measures will include, but are not limited to the following:

- LEDs: 8-12W
- LEDs: MR16 track light
- LEDs: > 12 W flood light
- Wifi-enabled thermostats
- Programmable thermostats
- Pre-rinse sprayers
- Faucet aerators

The second types of measures require the customer to pay a portion of the labor and materials. Some available measures will include, but are not limited to the following:

- Interior LED lighting (replacing incandescent, high bays and linear fluorescents)
- High-efficiency linear fluorescent lighting
- Linear fluorescent delamping
- LED exit signs
- Exterior LED lighting
- ECMs in refrigeration equipment

- Anti-sweat heater controls
- LED lighting for display cases

Incentive Strategy

In addition to the no-cost measures identified during the audit, the program will also pay a cash incentive on every recommended improvement identified through the assessment. Incentive rates may change over time and vary with special initiatives.

Program Delivery

Vectren South will oversee the program partner Nexant to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas and electric EE program in its combined natural gas and electric service territory.

Evaluation, Measurement and Verification

On-site verification will be provided for the first three projects completed by each trade ally, in addition to the program standard 5% of all completed projects and all projects receiving incentives greater than \$20,000. These verifications allow the program to validate energy savings, in addition to providing an opportunity to ensure the trade allies are providing high-quality customer services and the incentivized equipment satisfies program requirements. A third party evaluator will evaluate the program using standard EM&V protocols.

Q. Commercial & Industrial New Construction

Program Description

The Commercial and Industrial New Construction Program provides value by promoting EE designs with the goal of developing projects that are more energy efficient than current Indiana building code. This program applies to new construction and major renovation projects. Major renovation is defined as the replacement of at least two systems within an existing space (e.g. lighting, HVAC, controls, building envelope). The program provides incentives as part of the facility design process to explore opportunities in modeling EE options to craft an optimal package of investments. The program also offers customers the opportunity to receive prescriptive or custom rebates toward eligible equipment in order to reduce the higher capital cost for the EE solutions.

Table 27: Commercial & Industrial New Construction Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Commercial New Construction				
	Number of Projects	18	20	18	56
	Energy Savings kWh	502,080	1,835,413	502,080	2,839,573
	Peak Demand kW	108.0	120.0	108.0	336.0
	Total Program Budget \$	214,536	386,092	222,628	823,256
	Per Participant Avg Energy Savings (kWh)*				50706.7
	Per Participant Avg Demand Savings (kW)*				6.000
	Weighted Avg Measure Life*				10
	Net To Gross Ratio				100%

Eligible Customers

Any commercial or industrial customer who receives or intends to receive electric service from Vectren South.

Marketing Plan

The Commercial & Industrial New Construction Program will be marketed through trade ally meetings, trade association training, marketing campaigns and bonuses, educational seminars, and direct personal communication from Vectren South staff and third party contractors.

Barriers/Theory

There are three primary barriers addressed by the C&I New Construction program. The first is knowledge. For commercial and industrial buildings it is the knowledge and experience of the design team including the owner, architect, lighting and HVAC engineers, general contractor and others. This team may not understand new technologies and EE options that could be considered. The second barrier is cost. There is a cost during the design phase of the project in modeling EE options to see what can cost-effectively work within the building. The program provides design team incentives to help reduce the

design cost for the consideration of EE upgrades. The third barrier is the first cost of the high efficiency upgrades in equipment and materials. The program provides prescriptive or custom rebates toward eligible equipment to help reduce this first cost.

Implementation & Delivery Strategy

The new construction program is designed as a proactive, cost-effective way to achieve energy efficiency savings and foster economic growth. Typically, program participants face time and cost constraints throughout the project that make it difficult to invest in sustainable building practices. Participants need streamlined and informed solutions that are specific to their projects and locations. This scenario is particularly true for small to medium-sized new construction projects, where design fees and schedules provide for a very limited window of opportunity.

To help overcome the financial challenge for small-medium size projects, we offer a Standard Energy Design Assistance (EDA). EDA targets buildings that are less than 100,000 square feet, but is also available for larger new buildings that are beyond the schematic design phase or are on an accelerated schedule. Commercial and industrial projects for buildings greater than 100,000 square feet still in the conceptual design phase qualify for Vectren South's Enhanced EDA incentives. The Vectren South implementation partner staff expert will work with the design team through the conceptual design, schematic design and design development processes providing advice and counsel on measures that should be considered and EE modeling issues. Incentives will be paid after the design team submits completed construction documents for review to verify that the facility design reflects the minimum energy savings requirements.

For those projects that are past the phase where EDA can be of benefit, the C&I New Construction program offers the opportunity to receive prescriptive or custom rebates towards eligible equipment.

Incentive Strategy

Incentives are provided to help offset some of the expenses for the design team's participation in the EDA process with the design team incentive. The design team incentive is a fixed amount based on the new/renovated conditioned square footage and is paid when the proposed EE projects associated with the construction documents exceed a minimum energy savings threshold. The program also offers customers the opportunity to receive prescriptive or custom rebates toward eligible equipment in order to reduce the higher capital cost for the EE solutions. Program specific savings and incentive include:

Facility Size – Square Feet	Design Team Incentives	Minimum Savings
Small <25,000	\$750	25,000 kWh
Medium 25,000 - 100,000	\$2,250	75,000 kWh
Large >100,000	\$3,750	150,000 kWh
Enhance Large >100,000	\$5,000	10% beyond code

Program Delivery

Vectren South will oversee the program and partner with Nexant to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas and electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

All construction documents will be reviewed and archived. A third party evaluator will evaluate the program using standard EM&V protocols.

R. Commercial Building Tune-Up

Program Description

The Building Tune-Up (BTU) program provides a targeted, turnkey, and cost-effective retrocommissioning solution for small- to mid-sized customer facilities.

It is designed as a comprehensive customer solution that will identify, validate, quantify, and encourage the installation of both operational and capital measures. The majority of these measures will be no- or low-cost with low payback periods and will capture energy savings from a previously untapped source: building automation systems.

Table 28: Building Tune-Up Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Building Tune-up				
	Number of Projects	10	14	20	44
	Energy Savings kWh	500,000	700,000	1,000,000	2,200,000
	Peak Demand kW	1.0	1.0	1.0	3.0
	Total Program Budget \$	130,880	182,074	261,266	574,220
	Per Participant Avg Energy Savings (kWh)*				50000.0
	Per Participant Avg Demand Savings (kW)*				0.068
	Weighted Avg Measure Life*				7
	Net To Gross Ratio				100%

Eligible Customers

Applicants must be both an active Vectren South electric customer on a qualifying commercial rate and an active natural gas General Service customer on Rate 120 or 125. The program will target customers with buildings between 50,000 square feet and 150,000 square feet.

Marketing Plan

The BTU Program will be marketed primarily through in-network service provider outreach and direct personal communication from Vectren South staff and third-party contractors. The program implementer will provide service provider specific-marketing collateral to support these companies as they connect with customers.

The program will provide targeted marketing efforts to recruit quality participants. Additional program marketing may occur through direct mailing, trade associations, marketing campaigns and bonuses, local business organizations, and educational seminars.

Barriers/Theory

The program will typically target customers with buildings between 50,000 square feet and 150,000 square feet. Customers in this size range face unique barriers to energy efficiency. For example, although they are large enough to have a Building Automation System (BAS), they are usually too small to have a dedicated facility manager or staff with experience achieving operational efficiency. Also, most retrocommissioning service companies prefer larger projects and their services often are too expensive for small-to-midsized customers. We have specifically tailored the incentive structure and program design to eliminate these barriers. The BTU program is designed as a comprehensive customer solution that will identify, validate, quantify, and encourage the installation of both operational and capital measures eligible for incentive offerings.

Implementation & Delivery Strategy

The BTU program is designed to encourage high levels of implementation by customers seeking to optimize the operation of their existing HVAC system. Key elements of the program approach are:

- **Service Provider Network:** Service providers play a key role in program marketing and outreach. Their existing relationships with building owners and knowledge of customer facilities give them an easy starting point to begin program marketing efforts. For this reason, recruiting quality providers, training them on program processes, and making the BTU program profitable for them are key strategies that drive program participation. The program implementer will issue an annual RFQ to select those service providers with the best ability to provide high-quality and cost-effective services.
- **Fully Funded Service Offering:** The BTU program fully funds the investigation of opportunities by the program implementer and service providers. The program also provides a cash incentive on implemented improvements.
- **Customer Commitment:** BTU program participants are required to commit to a spending minimum to implement a group, or “bundle,” of agreed-upon energy saving measures. This bundle of measures will have a collective estimated simple payback of 1.5 years or less based upon energy savings identified, which ensures that it benefits customers as well as the program.
- **Technical Services:** The program will provide the following technical services to successfully implement each BTU project:

Application Phase: Each application will be screened to verify that the customer's facility has enough energy savings potential for the BTU study. After being accepted into the program, the customer will sign the Customer Agreement to spend the minimum amount of money on a bundle of measures with a simple payback of 1.5 years or less. This agreement ensures that both the customer and Vectren South will achieve energy savings from the project.

Investigation and Implementation Phase: During the investigation and implementation phase, the program implementer and the customers' preferred in-network service provider will perform a BTU study to identify and install measures for the customer. They will generate a study report to summarize findings from the investigation and present the results to the customer. The customer will select the bundle of measures to install that meet the program minimum and payback requirements, and work with their service provider to install the selected measures.

Verification Phase: The program implementer revisits the customer's facility as needed. If any of the measures were incorrectly installed, the service provider works with the customer to fix it. The implementer and service provider calculate the final estimated energy savings from the BTU project and share those results with both the customer and Vectren South, thus ensuring that the most accurate energy savings estimate is reported.

Initial Measures, Products and Services

The BTU program will specifically target measures that provide no- and low-cost operational savings. Customized measures will be identified for each building, these could include:

- Scheduling air handling units
- Optimizing economizer and outdoor air control
- Reducing/resetting duct static pressure
- Resetting chilled water temperature

Most measures involve optimizing the building automation system (BAS) settings but the program will also investigate related capital measures, like controls, operations, processes, and HVAC.

Incentive Strategy

The BTU program fully funds the investigation of opportunities by the program implementer and service provider. The program also provides a cash incentive on implemented improvements.

Program Delivery

Vectren South will oversee the program and partner with Nexant to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas and electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

A third party evaluator will evaluate the program using standard EM&V protocols.

S. Multi-Family Retrofit

Program Description

The Multi-Family Retrofit Program provides value by directly installing EE products such as high efficiency lighting, water-saving measures, thermostats, and vending machine controls into multi-family common areas. The program helps multi-family facilities identify and install cost-effective energy-saving measures by providing an on-site energy assessment customized for their business.

Table 29: Multi-Family Retrofit Budget & Energy Savings Targets

Market	Program	2018	2019	2020	Total Program
Commercial & Industrial	Multi-Family Retrofit				
	Number of Projects	4	4	4	12
	Energy Savings kWh	101,590	101,590	115,853	319,033
	Peak Demand kW	18.0	18.0	18.0	54.0
	Total Program Budget \$	34,880	35,074	35,266	105,220
	Per Participant Avg Energy Savings (kWh)*				26586.1
	Per Participant Avg Demand Savings (kW)*				4.500
	Weighted Avg Measure Life*				15
	Net To Gross Ratio				100%

Eligible Customers

Applicants must be both an active Vectren South electric customer on a qualifying commercial rate and an active natural gas General Service customer on Rate 120 or 125.

Marketing Plan

The Multi-Family Retrofit Program will be marketed primarily through in-network trade ally outreach. The program implementer will provide trade ally-specific marketing collateral to support trade allies as they connect with customers.

The program will provide targeted marketing efforts as needed to increase participation, including direct customer outreach and enhanced incentive campaigns.

Additional program marketing may occur through direct mail, trade associations, local business organizations, marketing campaigns and bonuses, educational seminars, and direct personal communication from Vectren South staff and third-party contractors.

Barriers/Theory

Multi-family landlords generally do not have the knowledge, time or money to invest in EE upgrades. This program assists these customers with direct installation and turn-key services to get measures installed at no or low out-of-pocket cost.

There is an implementation contractor in place providing suggested additions and changes to the program based on results and local economics.

Implementation & Delivery Strategy

Trade Ally Network: Trained trade ally energy advisors will provide energy assessments to customers. The program implementer will issue an annual RFQ to select the trade allies with the best ability to provide high-quality and cost-effective service to customers, and provide training to trade allies on the program process, with an emphasis on improving energy efficiency sales.

Energy Assessments: Trade allies will walk through the multi-family common areas and record site characteristics and energy efficiency opportunities at no cost to the customer. They will provide an energy assessment report that will detail customer-specific opportunities, costs, energy savings, incentives, and simple payback periods. The trade ally will then review the report with the customer, presenting the program benefits and process, while addressing any questions.

Initial Measures, Products and Services

The program will have two types of measures provided. The first are measures that will be installed at no cost to the customer. They will include but are not limited to the following:

- LEDs: 8-12W
- LEDs: MR16 track light
- LEDs: > 12 W flood light
- Wi-fi enabled thermostats
- Programmable thermostats
- Pre-rinse sprayers
- Faucet aerators

The second types of measures require the customer to pay a portion of the labor and materials. These measures include:

- Interior LED lighting (replacing incandescent, high bays and linear fluorescents)
- High-efficiency linear fluorescent lighting
- Linear fluorescent delamping
- Electronically commutated motors (ECM)
- Anti-sweat heater controls
- LED exit signs
- Exterior LED lighting

Incentive Strategy

In addition to the no-cost measures identified during the audit, the program will also pay a cash incentive for all recommended improvements identified through the assessment.

Program Delivery

Vectren South will oversee the program and will partner with Nexant to deliver the program.

Integration with Vectren South Gas

Vectren South will offer this integrated natural gas and electric EE program in its combined natural gas and electric service territory. Vectren South has allocated implementation costs based on the net benefits split between natural gas and electric.

Evaluation, Measurement and Verification

On-site verification will be provided for the first three projects completed by each trade ally, in addition to the program standard 5% of all completed projects and all projects receiving incentives greater than \$20,000. These verifications allow the program to validate energy savings, in addition to providing an opportunity to ensure the trade allies are providing high-quality customer services and the incentivized equipment satisfies program requirements. A third party evaluator will evaluate the program using standard EM&V protocols.

8. Program Administration

As in previous years, Vectren South will continue to serve as the program administrator for the 2018-2020 Plan. Vectren South will utilize third party program implementers to deliver specific programs or program components where specialty expertise is required. Contracting directly with specialty vendors avoids an unnecessary layer of management, oversight and expense that occurs when utilizing a third-party administration approach.

Program administration costs are allocated at the program level and include costs associated with program support and internal labor. Program support includes costs associated with outside consulting and annual license and maintenance fees for DSMore, Data Management, and Esource. Based upon the EE and DR programs proposed in the 2018 - 2020 Plan, Vectren South is proposing to maintain the staffing levels that were previously approved to support the portfolio. The major responsibilities associated with these FTEs are as follows:

- **Portfolio Management and Implementation** - Oversees the overall portfolio and staff necessary to support program administration. Serves as primary contact for regulatory and oversight of programs.
- **Reporting and Analysis** - Responsible for all aspects of program reporting including, budget analysis/reporting, scorecards and filings.
- **Outreach and Education** - Serves as contact to trade allies regarding program awareness. Also serves as point of contact for residential and commercial/industrial customers to assist with responding to program inquiries.
- **Research and Evaluation** - Works with the selected EM&V Administrator and facilitates measurement and verification efforts, assists with program reporting/tracking.

9. Support Services

Support services are considered indirect costs which support the entire portfolio and include: Contact Center, Online Audit, Outreach & Education, and Evaluation, Measurement and Verification (EM&V). These costs are budgeted at the portfolio level.

Table 30: Portfolio Level Costs by Year

Indirect Portfolio Level Costs	2018	2019	2020
Contact Center	\$63,000	\$63,000	\$63,000
Online Audit	\$36,444	\$39,806	\$42,911
Outreach & Education	\$410,000	\$410,000	\$410,000
Evaluation	\$427,992	\$447,304	\$444,314
Total Indirect Portfolio Level Costs	\$937,436	\$960,110	\$960,225

A. Contact Center

The Vectren Contact Center, called the Energy Efficiency Advisory Team, fields referrals from the company's general call center and serves as a resource for interested customers. A toll-free number is provided on all outreach and education materials. Direct calls are initial contacts from customers or market providers coming through the dedicated toll free number printed on all Vectren South's energy efficiency materials. Transferred calls are customers that have spoken with a Vectren Contact Center representative and have either asked or been offered a transfer to an Energy Efficiency Advisor who is trained to respond to energy efficiency questions or conduct the on-line energy audit.

These customer communication channels provide support mechanisms for Vectren South customers to receive the following services:

- Provide general guidance on energy saving behaviors and investments using customer specific billing data via the on-line tool (bill analyzer and energy audit).
- Respond to questions about the residential and general service programs.
- Facilitate the completion of and provide a hard copy report from the online audit tool for customers without internet access or who have difficulty understanding how to use the tool.
- Respond to inquiries about rebate fulfillment status.

B. Online Audit

The Online Energy Audit tool is a customer engagement and messaging tool that uses actual billing data from a customer's energy bills to pinpoint ways to save energy in their home. Data collected drives account messaging through providing tips and rebates relevant to that customer's situation. Additionally, data collected from the online energy audit is used to validate neighbor comparison data, which illustrates how the customer's monthly energy use compares to their neighbors and is designed to inspire customers to try and save more energy than their efficient neighbors. This tool provides the online ability and means to communicate, cross promote, and educate customers about energy efficiency and Vectren's energy efficiency programs. The Online Energy Audit tool provides tools and messaging to educate customers and provide suggestions, tips, and advice on energy usage.

C. Outreach & Education

Vectren South's Customer Outreach and Education program serves to raise awareness and drive customer participation as well as educate customers on how to manage their energy bills. The program includes the following goals as objectives:

- Build awareness;
- Educate consumers on how to conserve energy and reduce demand;
- Educate customers on how to manage their energy costs and reduce their bill;
- Communicate support of customer EE needs; and
- Drive participation in the EE and DR programs.

The marketing approach includes paid media as well as web-based tools to help analyze bills, energy audit tools, EE and DSM program education and information. Informational guides and sales promotion materials for specific programs are included in this budget.

This effort is the key to achieving greater energy savings by convincing the families and businesses making housing/facility, appliance and equipment investments to opt for greater EE. The first step in convincing the public and businesses to invest in EE is to raise their awareness.

It is essential that a broad public education and outreach campaign not only raise awareness of what consumers can do to save energy and control their energy bills, but also prime them for participation in the various EE and DR programs.

Vectren South will oversee outreach and education for the programs and work closely with implementation partners to provide consistent messaging across different program outreach and education

efforts. Vectren South will utilize the services of communication and EE experts to deliver the EE and DR message.

The Outreach budget also includes funds for program development and staff training. Examples of these costs include memberships to EE related organizations, outreach for home/trade shows and travel and training related to EE associated staff development.

D. Evaluation

Vectren South will work with an independent third party evaluator, selected by the VOB, to conduct an evaluation of DSM programs approved as part of its 2018-2020 Plan. The evaluation will include standard EM&V analyses, such as a process, impact, and/or market effects evaluation of Vectren South's portfolio of DSM programs. Gas impacts will be calculated for all of Vectren South's integrated gas programs. EM&V costs are based on 5% of the budget and allocated at the portfolio level.

10. Other Costs

Other costs being requested in the 2018-2020 filed plan include a Market Potential Study and funding for Emerging Markets.

Table 31: Other Costs by Year

Other Costs	2018	2019	2020
Emerging Markets	\$200,000	\$200,000	\$200,000
Market Potential Study	\$300,000	\$0	\$0
Total	\$500,000	\$200,000	\$200,000

A. Emerging Markets

The Emerging Markets funding allows Vectren’s DSM portfolio to offer leading-edge program designs for next-generation technologies, services, and engagement strategies to growing markets in the Vectren territory. The budget will be \$200,000 each year for 2018-2020 and will not be used to support existing programs, but rather support new program development or new measures within an existing program.

Incentives promoted through this program may range from innovative rebate offerings to engineering and trade ally assistance to demand-control services that encourage early adoption of new, efficient technologies in high-impact market sectors. Depending on the development of certain technologies and growth areas in the service territory, a wide variety of projects and services are eligible.

To offset the risks of oversaturation of common prescriptive measures and redefined prescriptive baselines, this program will bring to market next generation technologies and energy-saving strategies that have significant savings and cost-effectiveness potential. As new technologies develop towards lower costs and higher efficiency, their market penetration and energy-savings potential will increase. This program will allow Vectren to be on the forefront of emerging technologies to understand the market disruption a new product may cause, test strategies for capturing their energy-saving opportunities, and plan for future program savings growth. This offering will supplement the other DSM programs that do not easily fit into other program offerings. Additionally, growing segments of Vectren South electric customers may require tailored offerings to accommodate their needs in order to participate.

Because this program will focus on innovative new approaches and leading the DSM market, the exact list of measures cannot be set at this time. However, potential measures and services include: new technologies, such as Advanced Lighting Controls; new strategies for achieving significant energy savings, such as midstream incentives, contractor bids to provide energy efficiency projects, and targeting

high-impact market sectors; and integrated DSM (iDSM) approaches, such as demand response, combined energy efficiency and demand response measures, and load shifting.

Emerging technologies and measures will be reviewed and may be offered using this funding as long as they do not fall into a current program offering. Innovative engagement and incentivizing approaches may also be used as a tool to provide reduced costs to new systems, equipment and/or services to help reduce peak demand and electric usage. This program also allows Vectren to take steps toward an integrated Demand Side Management approach to address both energy efficiency and demand response together.

B. Market Potential Study

Vectren South is requesting \$300,000 to complete a full blown Market Potential Study (MPS) for the years of 2020 and beyond, which is scheduled for 2018. Vectren will issue a Request for Quote to select a consultant to perform this work.

11. Conclusion

Vectren South has developed a 2018-2020 Electric Energy Efficiency Plan that is aligned with the 2016 Integrated Resource Plan and is reasonably achievable and cost effective. The cost effectiveness analysis was performed for 2018-2020 using the DSMore model – a nationally recognized economic analysis tool that is specifically designed to evaluate the cost effectiveness of implementing energy efficiency and demand response programs.

Program costs were determined by referencing 2016 program delivery costs, based on prior contracts and performance in the field and consultation with the program vendors that will deliver the DSM Plan. Energy and demand savings were primarily determined by using recent EM&V results and the IN TRM version 2.2. For measures that were not addressed in the IN TRM or EM&V, Vectren South used Technical Resource Manual resources from nearby states or vendor input. Vectren South utilized the avoided costs from Figure 10.13 in the 2016 IRP.

Based on this information, Vectren South requests IURC approval of this 2018-2020 DSM Plan as well as the costs associated with Emerging Markets and the Market Potential study for 2020 and beyond.

12. Appendix A: Cost Effectiveness Tests Benefits & Costs Summary

Test	Benefits	Costs
Participant Cost Test	<ul style="list-style-type: none"> • Incentive payments • Annual bill savings • Applicable tax credits 	<ul style="list-style-type: none"> • Incremental technology/equipment costs • Incremental installation costs
Utility Cost Test (Program Administrator Cost Test)	<ul style="list-style-type: none"> • Avoided energy costs • Avoided capacity costs 	<ul style="list-style-type: none"> • All program costs (startup, marketing, labor, evaluation, promotion, etc.) • Utility/Administrator incentive costs
Rate Impact Measure Test	<ul style="list-style-type: none"> • Avoided energy costs • Avoided capacity costs 	<ul style="list-style-type: none"> • All program costs (startup, marketing, labor, evaluation, promotion, etc.) • Utility/Administrator incentive costs • Lost revenue due to reduced energy bills
Total Resource Cost Test	<ul style="list-style-type: none"> • Avoided energy costs • Avoided capacity costs • Applicable participant tax credits 	<ul style="list-style-type: none"> • All program costs (not including incentive costs) • Incremental technology/equipment costs (whether paid by the participant or the utility)

13. Appendix B: Program Measure Detail

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
Residential Programs												
Residential Lighting	Standard Units		27.75	0.00	146,465	164,424	80,000		\$ 3	4,064,403	4,562,766	2,220,000
Residential Lighting	Specialty Units		44.00	0.01	62,698	67,962	69,716		\$ 4	2,758,712	2,990,328	3,067,504
Residential Lighting	LED Fixtures		57.48	0.01	13,700	13,700	13,700		\$ 20	787,501	787,501	787,501
Total Residential Lighting					222,863	246,086	163,416			7,610,617	8,340,595	6,075,005
Residential Prescriptive	Air Source Heat Pump 16 SEER	18	1,154.92	0.30	52	52	52	\$ 300	\$ 870	60,056	60,056	60,056
Residential Prescriptive	Air Source Heat Pump 18 SEER	18	1,625.77	0.35	9	9	9	\$ 500	\$ 870	14,632	14,632	14,632
Residential Prescriptive	Attic Insulation - Elec Heated	25	3,382.75	0.30	13	13	13	\$ 450	\$ 500	43,976	43,976	43,976
Residential Prescriptive	Attic Insulation - Gas Heated South (Electric)	25	339.71	0.30	36	36	36	\$ 450	\$ 500	12,229	12,229	12,229
Residential Prescriptive	Central Air Conditioner 16 SEER	18	294.63	0.35	644	644	644	\$ 200	\$ 400	189,745	189,745	189,745
Residential Prescriptive	Central Air Conditioner 18 SEER	18	573.88	0.33	76	76	76	\$ 400	\$ 800	43,615	43,615	43,615
Residential Prescriptive	Dual Fuel Air Source Heat Pump 16 SEER	18	767.06	0.34	0	0	0	\$ 300	\$ 1,000	0	0	0
Residential Prescriptive	Duct Sealing Electric Heat Pump - South	20	829.21	0.44	7	7	7	\$ 350	\$ 400	5,804	5,804	5,804
Residential Prescriptive	Duct Sealing Electric Resistive Furnace - South	20	1,351.93	0.40	0	0	0	\$ 350	\$ 400	0	0	0
Residential Prescriptive	Duct Sealing Gas Heating with A/C - South (Electric)	20	228.61	0.40	77	77	77	\$ 175	\$ 200	17,603	17,603	17,603
Residential Prescriptive	Ductless Heat Pump 17 SEER 9.5 HSPF	18	3,847.40	0.29	2	2	2	\$ 500	\$ 1,667	7,695	7,695	7,695
Residential Prescriptive	Ductless Heat Pump 19 SEER 9.5 HSPF	18	3,919.89	0.40	7	7	7	\$ 500	\$ 2,333	27,439	27,439	27,439
Residential Prescriptive	Ductless Heat Pump 21 SEER 10.0 HSPF	18	3,924.75	0.29	2	2	2	\$ 500	\$ 2,833	7,850	7,850	7,850
Residential Prescriptive	Ductless Heat Pump 23 SEER 10.0 HSPF	18	4,032.45	0.31	11	11	11	\$ 500	\$ 3,333	44,357	44,357	44,357
Residential Prescriptive	Dual Fuel Air Source Heat Pump 18 SEER	18	1,498.67	0.13	0	0	0	\$ 500	\$ 1,667	0	0	0
Residential Prescriptive	ECM HVAC Motor	20	384.72	0.10	1,107	1,107	1,107	\$ 100	\$ 97	425,884	425,884	425,884
Residential Prescriptive	Heat Pump Water Heater	10	2,291.38	0.31	2	2	2	\$ 300	\$ 1,000	4,583	4,583	4,583
Residential Prescriptive	Nest On-Line Store (Electric)	15	466.69	0.90	300	350	400	\$ 75	\$ 39	140,007	163,342	186,676
Residential Prescriptive	Nest On-Line Store (Dual)	15	377.71	0.90	900	1,000	1,100	\$ 15	\$ 175	339,939	377,710	415,481
Residential Prescriptive	Pool Heater	10	666.87	0.00	1	1	1	\$ 1,000	\$ 3,333	667	667	667
Residential Prescriptive	Wifi Thermostat - South (Electric)	15	405.09	0.00	264	264	264	\$ 10	\$ 21	106,944	106,944	106,944
Residential Prescriptive	Smart Programmable Thermostat - South (Electric)	15	412.19	0.00	428	428	428	\$ 15	\$ 39	176,417	176,417	176,417
Residential Prescriptive	Variable Speed Pool Pump	15	1,173.00	1.72	18	18	18	\$ 300	\$ 750	21,114	21,114	21,114
Residential Prescriptive	Wall Insulation - Elec Heated	25	1,158.34	0.04	5	5	5	\$ 450	\$ 500	5,792	5,792	5,792
Residential Prescriptive	Wall Insulation - Gas Heated - South (Electric)	25	60.29	0.04	32	32	32	\$ 450	\$ 500	1,929	1,929	1,929
Residential Prescriptive	AC Tune Up	5	75.64	0.12	0	644	644	\$ 50	\$ 64	0	48,710	48,710
Residential Prescriptive	ASHP Tune Up	5	284.99	0.12	0	22	22	\$ 50	\$ 64	0	6,270	6,270
Residential Prescriptive	Air Purifier	9	492.70	0.06	100	100	100	\$ 25	\$ 70	49,270	49,270	49,270
Residential Prescriptive	Furnace Tune Up	2	35.51	0.00	0	1,536	1,536	\$ -	\$ -	0	54,543	54,543
Total Residential Prescriptive					4,093	6,445	6,595			1,747,547	1,918,174	1,979,280
Residential New Construction	Gold Star: HERS Index Score ≤ 65 - EH	25	954.15	0.64	0	0	0	\$ 700	\$ 2,504	0	0	0
Residential New Construction	Gold Star: HERS Index Score ≤ 65 - Gas Heated	25	954.15	0.64	22	22	22	\$ 175	\$ 1,573	20,991	20,991	20,991
Residential New Construction	Platinum Star: HERS Index Score ≤ 60 - EH	25	1,419.20	0.89	1	1	1	\$ 800	\$ 3,079	1,419	1,419	1,419
Residential New Construction	Platinum Star: HERS Index Score ≤ 60 - Gas Heated	25	1,419.20	0.89	116	116	116	\$ 200	\$ 1,778	164,627	164,627	164,627
Total Residential New Construction					139	139	139			187,038	187,038	187,038

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
HEA & Weatherization	Water Heater Temperature Setback - Elec DHW	4	86.40	0.01	15	15	15		\$ 7	1,296	1,296	1,296
HEA & Weatherization	Wifi Thermostat - South (Electric)	15	405.09	0.00	399	399	399		\$ 21	161,631	161,631	161,631
HEA & Weatherization	Exterior LED Lamp	15	91.98	0.00	1,210	1,210	1,210		\$ 8	111,296	111,296	111,296
HEA & Weatherization	Duct Sealing Gas Heating with A/C	15	228.61	0.40	64	64	64		\$ 200	14,631	14,631	14,631
HEA & Weatherization	Duct Sealing Electric Heat Pump	15	829.21	0.44	8	8	8		\$ 400	6,634	6,634	6,634
HEA & Weatherization	Duct Sealing Electric Resistive Furnace	15	1,351.93	0.40	4	4	4		\$ 400	5,408	5,408	5,408
HEA & Weatherization	Air Sealing Gas Furnace w/ CAC	15	140.27	0.39	258	258	258		\$ 100	36,190	36,190	36,190
HEA & Weatherization	Air Sealing Heat Pump	15	1,501.47	0.28	30	30	30		\$ 200	45,044	45,044	45,044
HEA & Weatherization	Air Sealing Electric Furnace w/ CAC	15	4,687.85	0.92	15	15	15		\$ 200	70,318	70,318	70,318
HEA & Weatherization	AC Tune Up	5	75.64	0.12	0	0	0		\$ 175	0	0	0
HEA & Weatherization	ASHP Tune Up	5	284.99	0.12	0	0	0		\$ 350	0	0	0
HEA & Weatherization	Furnace Tune Up	2	35.51	0.00	0	0	0		\$ -	0	0	0
Total HEA & Weatherization					15,158	15,158	15,158			863,991	863,991	863,991
	Number of Homes				1,210	1,210	1,210					
Income Qualified Weatherization	Water Heater Temperature Setback - Gas DHW	4	-34.20	0.00	0	0	0		\$ 7	0	0	0
Income Qualified Weatherization	Attic Insulation - Electric Resistance Heated	25	828.28	0.03	24	25	26		\$ 1,413	19,879	20,707	21,535
Income Qualified Weatherization	Attic Insulation - Gas Heated (Electric)	25	138.64	0.14	238	250	263		\$ 706	32,997	34,661	36,463
Income Qualified Weatherization	Audit Recommendations - dual (Electric)	1	67.87	0.01	475	500	525		\$ 26	32,239	33,936	35,633
Income Qualified Weatherization	Audit Recommendations - Electric Only	1	67.87	0.01	0	0	0		\$ 106	0	0	0
Income Qualified Weatherization	Bathroom Aerator 1.0 gpm - Elec DHW	10	12.03	0.00	145	153	160		\$ 1	1,744	1,841	1,925
Income Qualified Weatherization	9W LED	15	18.66	0.00	2,170	2,284	2,399		\$ 3	40,501	42,628	44,775
Income Qualified Weatherization	LED 5W Globe	15	10.37	0.00	93	98	102		\$ 9	964	1,016	1,058
Income Qualified Weatherization	LED R30 Dimmable	15	52.98	0.01	365	385	404		\$ 12	19,337	20,396	21,403
Income Qualified Weatherization	Exterior LED Lamps	15	91.98	0.00	285	300	315		\$ 7	26,214	27,594	28,974
Income Qualified Weatherization	Filter Whistle	15	54.72	0.00	190	200	210		\$ 2	10,397	10,944	11,491
Income Qualified Weatherization	Kitchen Flip Aerator 1.5 gpm - Elec DHW	10	120.03	0.01	42	44	47		\$ 1	5,041	5,281	5,641
Income Qualified Weatherization	LED Nightlight	16	13.64	0.00	887	933	980		\$ 3	12,095	12,723	13,364
Income Qualified Weatherization	Low Flow Showerhead 1.5 gpm - Elec DHW	5	299.86	0.01	89	93	98		\$ 3	26,688	27,887	29,386
Income Qualified Weatherization	Pipe Wrap - Elec DHW (per home)	15	148.16	0.02	42	44	47		\$ 2	6,223	6,519	6,964
Income Qualified Weatherization	Wifi Thermostat - South (Electric)	15	405.19	0.00	262	276	290		\$ 25	106,160	111,832	117,505
Income Qualified Weatherization	Refrigerator Replacement	8	441.56	0.07	63	67	70		\$ 580	27,818	29,584	30,909
Income Qualified Weatherization	Smart Power Strips	4	23.00	0.00	570	600	630		\$ 35	13,110	13,800	14,490
Income Qualified Weatherization	Smart Thermostat (Electric)	15	412.19	0.00	47	49	52		\$ 125	19,373	20,197	21,434
Income Qualified Weatherization	Water Heater Temperature Setback - Elec DHW	4	86.40	0.01	135	142	150		\$ 7	11,664	12,269	12,960
Income Qualified Weatherization	Duct Sealing Gas Heating with A/C	15	228.61	0.40	303	319	335		\$ 225	69,270	72,928	76,585
Income Qualified Weatherization	Duct Sealing Electric Heat Pump	15	829.21	0.44	36	38	39		\$ 450	29,852	31,510	32,339
Income Qualified Weatherization	Duct Sealing Electric Resistive Furnace	15	1,351.93	0.40	18	19	20		\$ 450	24,335	25,687	27,039
Income Qualified Weatherization	Air Sealing Gas Furnace w/ CAC	15	140.27	0.39	303	319	335		\$ 100	42,502	44,746	46,990
Income Qualified Weatherization	Air Sealing Heat Pump	15	1,501.47	0.28	36	38	39		\$ 200	54,053	57,056	58,557
Income Qualified Weatherization	Air Sealing Electric Furnace w/ CAC	15	4,687.85	0.92	18	19	20		\$ 200	84,381	89,069	93,757
Income Qualified Weatherization	AC Tune Up	5	75.64	0.12	0	0	0		\$ 200	0	0	0
Income Qualified Weatherization	ASHP Tune Up	5	284.99	0.12	0	0	0		\$ 400	0	0	0
Income Qualified Weatherization	9W LED	15	18.66	0.00	766	919	1,072		\$ 3	14,297	17,152	20,008
Income Qualified Weatherization	LED 5W Globe	15	10.37	0.00	45	54	64		\$ 9	467	560	664
Income Qualified Weatherization	LED R30 Dimmable	15	52.98	0.01	179	215	251		\$ 12	9,483	11,390	13,297
Income Qualified Weatherization	Wifi Thermostat - South (Electric)	15	405.19	0.00	29	35	40		\$ 25	11,751	14,182	16,208
Income Qualified Weatherization	Site Visit and DI - dual (Electric)	1	0.00	0.00	100	120	140		\$ 23	0	0	0
Income Qualified Weatherization	9W LED	15	18.66	0.00	1,250	1,500	1,750		\$ 3	23,330	27,996	32,662
Income Qualified Weatherization	LED 5W Globe	15	10.37	0.00	114	136	159		\$ 9	1,182	1,410	1,649
Income Qualified Weatherization	LED R30 Dimmable	15	52.98	0.01	250	300	350		\$ 12	13,244	15,893	18,542
Income Qualified Weatherization	Bathroom Aerator 1.0 gpm - Electric DHW	10	12.03	0.00	23	28	32		\$ 1	277	337	385
Income Qualified Weatherization	Kitchen Flip Aerator 1.5 gpm - Electric DHW	10	120.03	0.01	11	13	15		\$ 1	1,320	1,560	1,800
Income Qualified Weatherization	Low Flow Showerhead 1.5 gpm - Electric DHW	5	299.86	0.01	29	35	40		\$ 3	8,696	10,495	11,994
Income Qualified Weatherization	Wifi Thermostat - South (Electric)	15	405.19	0.00	72	87	101		\$ 25	29,174	35,252	40,924
Income Qualified Weatherization	Duct Sealing Gas Heating with A/C	15	114.31	0.20	213	255	298		\$ 225	24,347	29,148	34,063
Income Qualified Weatherization	Duct Sealing Electric Heat Pump	15	414.61	0.22	13	15	18		\$ 450	5,390	6,219	7,463
Income Qualified Weatherization	Duct Sealing Electric Resistive Furnace	15	675.96	0.20	25	30	35		\$ 450	16,899	20,279	23,659
Income Qualified Weatherization	Air Sealing Gas Furnace w/ CAC	15	70.14	0.19	213	255	298		\$ 100	14,939	17,884	20,900

Program	Measure	Measure Life	Average Savings per Unit (kWh)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
Income Qualified Weatherization	Air Sealing Heat Pump	15	1,501.47	0.28	36	38	39		\$ 200	54,053	57,056	58,557
Income Qualified Weatherization	Air Sealing Electric Furnace w/ CAC	15	4,687.85	0.92	18	19	20		\$ 200	84,381	89,069	93,757
Income Qualified Weatherization	AC Tune Up	5	75.64	0.12	0	0	0		\$ 200	0	0	0
Income Qualified Weatherization	ASHP Tune Up	5	284.99	0.12	0	0	0		\$ 400	0	0	0
Income Qualified Weatherization	9W LED	15	18.66	0.00	766	919	1,072		\$ 3	14,297	17,152	20,008
Income Qualified Weatherization	LED 5W Globe	15	10.37	0.00	45	54	64		\$ 9	467	560	664
Income Qualified Weatherization	LED R30 Dimmable	15	52.98	0.01	179	215	251		\$ 12	9,483	11,390	13,297
Income Qualified Weatherization	Wifi Thermostat - South (Electric)	15	405.19	0.00	29	35	40		\$ 25	11,751	14,182	16,208
Income Qualified Weatherization	Site Visit and DI - dual (Electric)	1	0.00	0.00	100	120	140		\$ 23	0	0	0
Income Qualified Weatherization	9W LED	15	18.66	0.00	1,250	1,500	1,750		\$ 3	23,330	27,996	32,662
Income Qualified Weatherization	LED 5W Globe	15	10.37	0.00	114	136	159		\$ 9	1,182	1,410	1,649
Income Qualified Weatherization	LED R30 Dimmable	15	52.98	0.01	250	300	350		\$ 12	13,244	15,893	18,542
Income Qualified Weatherization	Bathroom Aerator 1.0 gpm - Electric DHW	10	12.03	0.00	23	28	32		\$ 1	277	337	385
Income Qualified Weatherization	Kitchen Flip Aerator 1.5 gpm - Electric DHW	10	120.03	0.01	11	13	15		\$ 1	1,320	1,560	1,800
Income Qualified Weatherization	Low Flow Showerhead 1.5 gpm - Electric DHW	5	299.86	0.01	29	35	40		\$ 3	8,696	10,495	11,994
Income Qualified Weatherization	Wifi Thermostat - South (Electric)	15	405.19	0.00	72	87	101		\$ 25	29,174	35,252	40,924
Income Qualified Weatherization	Duct Sealing Gas Heating with A/C	15	114.31	0.20	213	255	298		\$ 225	24,347	29,148	34,063
Income Qualified Weatherization	Duct Sealing Electric Heat Pump	15	414.61	0.22	13	15	18		\$ 450	5,390	6,219	7,463
Income Qualified Weatherization	Duct Sealing Electric Resistive Furnace	15	675.96	0.20	25	30	35		\$ 450	16,899	20,279	23,659
Income Qualified Weatherization	Air Sealing Gas Furnace w/ CAC	15	70.14	0.19	213	255	298		\$ 100	14,939	17,884	20,900
Income Qualified Weatherization	Air Sealing Heat Pump	15	750.74	0.14	13	15	18		\$ 200	9,760	11,261	13,513
Income Qualified Weatherization	Air Sealing Electric Furnace w/ CAC	15	2,343.93	0.46	25	30	35		\$ 200	58,598	70,318	82,037
Income Qualified Weatherization	Mobile Home Audit (Dual)	1	0.00	0.00	213	255	298		\$ 26	0	0	0
Income Qualified Weatherization	Mobile Home Audit (Electric)	1	0.00	0.00	38	45	53		\$ 106	0	0	0
Total Income Qualified Weatherization					10,457	11,537	12,623			959,988	1,046,148	1,130,945
	Number of Homes				475	500	525					
Foodbank	9W LED	15	27.75	0.00	50,496	50,496	0		\$ 3	1,401,264	1,401,264	0
Energy Efficient Schools	15-watt LED x1	15	39.33		2,400	2,500				94,403	98,336	0
Energy Efficient Schools	11-watt LED	15	43.69		2,400	2,500				104,863	109,232	0
Energy Efficient Schools	11-watt LED	15	43.69		2,400	2,500				104,863	109,232	0
Energy Efficient Schools	Showerheads	5	122.64		2,400	2,500	2,600			294,330	306,594	318,864
Energy Efficient Schools	Kitchen aerators	10	55.83		2,400	2,500	2,600			133,987	139,569	145,152
Energy Efficient Schools	Bathroom aerators	10	20.04		2,400	2,500	2,600			48,094	50,098	52,102
Energy Efficient Schools	Bathroom aerators	10	20.04		2,400	2,500	2,600			48,094	50,098	52,102
Energy Efficient Schools	Filter Whistle	5	22.60		2,400	2,500	2,600			54,240	56,500	58,760
Energy Efficient Schools	LED Night Light	16	7.01		2,400	2,500	2,600			16,833	17,534	18,236
Total Energy Efficient Schools					2,400	2,500	2,600			899,706	937,194	645,216
Residential Behavioral Savings		1	157.08		41,348	38,203	35,298			6,470,000	5,970,000	5,600,000
Appliance Recycling	Refrigerator Recycling	8	1,000.09	0.14	760	744	736	\$ 50		760,068	744,067	736,066
Appliance Recycling	Freezer Recycling	8	808.96	0.10	190	186	184	\$ 50		153,702	150,467	148,849
Total Appliance Recycling					950	930	920			913,771	894,534	884,915
Smart Thermostat Program (Incentive)		15			2,000	2,000	2,000	\$ 20				
Conservation Voltage Reduction - Residential		15										Savings
Smart DLC - Wifi DR/DLC Changeout		15	466.69	0.90	1,000	1,000		\$ 20		466,690	466,690	466,690
BYOT (Bring Your Own Thermostat)		15		0.90	300	300	300	\$ 20				
Sub-Total Residential										21,520,612	22,025,627	19,294,126

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (kW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
C&I Prescriptive	Lighting Power Density Reduction	15	0.9	0.0002	4	3	4	15754.5	-	4	3	4
C&I Prescriptive	LED Decoratives	10	147.0	0.0460	2231	1892	2170	10	20.62	327,957	278,124	318,990
C&I Prescriptive	T12/T8 4 Lamp 4' To LED Panel	15	288.0	0.0755	1069	907	1040	40	91.64	307,872	261,216	299,520
C&I Prescriptive	T12/T8 3 Lamp 4' To LED Panel	15	261.0	0.0485	578	491	563	40	81.80	150,858	128,151	146,943
C&I Prescriptive	T12/T8 2 Lamp 4' To LED Panel	15	226.0	0.0350	513	435	499	40	37.41	115,938	98,310	112,774
C&I Prescriptive	T12/T8 Lamp 4' to LED Tube (includes U-tube)	15	105.0	0.0174	398	338	388	5	22.85	41,790	35,490	40,740
C&I Prescriptive	Fixture Mounted Occupancy Sensor	8	150.1	0.0182	360	305	350	15	125.00	54,035	45,780	52,534
C&I Prescriptive	High Bay HID to LED 175W+	16	780.2	0.2351	293	249	285	90	340.61	228,610	194,279	222,368
C&I Prescriptive	Bonus Incentive - Electric	0	-	-	259	750	0	50	-	-	-	-
C&I Prescriptive	1000W HID to Exterior LED	15	3,143.7	-	250	212	244	200	330.07	785,916	666,457	767,054
C&I Prescriptive	T12/T8 48" 1 Lamp To Delamp (includes U-tubes)	11	116.0	0.0460	202	171	196	5	15.02	23,439	19,842	22,743
C&I Prescriptive	251-400W Post Fixture LED	15	1,122.0	-	148	126	144	120	543.96	166,063	141,378	161,574
C&I Prescriptive	<= 175W Parking Garage or Canopy Fixture to LED	15	524.6	0.0194	94	80	91	50	240.34	49,314	41,970	47,740
C&I Prescriptive	251-400W Parking Garage or Canopy Fixture to LED	15	1,360.7	0.0693	90	76	87	120	257.23	122,466	103,416	118,384
C&I Prescriptive	<= 175W Wallpack to LED	15	583.4	0.0148	86	73	84	50	227.82	50,170	42,586	49,004
C&I Prescriptive	176-250W Wallpack to LED	15	873.6	-	67	57	65	65	316.05	58,534	49,798	56,787
C&I Prescriptive	Occupancy Sensor - Wall Mounted <500W	8	420.4	0.0114	65	55	63	20	42.00	27,324	23,120	26,483
C&I Prescriptive	251-400W Wallpack to LED 75W+	15	1,438.2	-	56	48	55	120	354.13	80,538	69,033	79,100
C&I Prescriptive	T12 or T8 2-Lamp 8-Foot to LED Panel or Kit	15	217.5	0.0457	46	39	45	40	175.56	10,005	8,483	9,788
C&I Prescriptive	T12 96" 4 Lamp To T8 96" 4 Lamp	15	348.4	0.1018	34	29	33	12	202.04	11,846	10,104	11,497
C&I Prescriptive	<= 175W Post Fixture LED	16	556.7	-	33	28	32	50	278.89	18,371	15,588	17,814
C&I Prescriptive	2 Lamp 4ft T12 to 2 Lamp 4ft HPT8	15	46.1	0.0228	28	24	28	6	47.68	1,290	1,105	1,290
C&I Prescriptive	176-250W Post Fixture LED	15	988.8	-	28	24	27	65	398.61	27,686	23,731	26,697
C&I Prescriptive	T12 6' To Refrigerated Display Case Lighting 6' LED - Cooler	8.1	496.9	0.0494	27	23	26	30	137.14	13,418	11,430	12,921
C&I Prescriptive	Fluorescent Exit Sign To LED Exit Sign	16	92.3	0.0106	23	19	22	30	24.91	2,124	1,754	2,031
C&I Prescriptive	176-250W Parking Garage or Canopy Fixture to LED	15	916.1	-	19	16	19	65	295.80	17,405	14,657	17,405
C&I Prescriptive	T8 5' To Refrigerated Display Case Lighting 5' LED - Cooler	8.1	332.5	0.0500	17	15	17	15	150.00	5,652	4,987	5,652
C&I Prescriptive	Cooler - Walk-In Electronically Commutated (EC) Motor	15	357.0	0.0500	13	11	13	35	50.00	4,641	3,927	4,641
C&I Prescriptive	Occupancy Sensor - Ceiling Mounted <500W	8	604.2	0.0144	10	8	9	20	66.00	6,042	4,834	5,438
C&I Prescriptive	Split System Unitary Air Conditioner <65,000 BtuH	15	638.9	0.0682	10	8	9	120	282.11	6,389	5,111	5,750
C&I Prescriptive	T12/T8 U-Tube 2 Lamp 2' To LED Panel	15	185.0	0.0267	8	7	8	30	179.14	1,480	1,295	1,480
C&I Prescriptive	T12 48" 4 Lamp To T8 48" 28W 4 Lamp	15	240.1	0.0440	8	7	8	14	36.19	1,921	1,681	1,921
C&I Prescriptive	Wifi Thermostat - Electric Only	15	4,720.3	-	8	7	16	100	200.00	37,763	33,042	75,526
C&I Prescriptive	Programmable Thermostat - Electric Only	15	4,720.3	-	8	7	16	100	200.00	37,763	33,042	75,526
C&I Prescriptive	Occupancy Sensor - Ceiling Mounted 500W+	8	176.7	0.0617	7	6	7	40	66.00	1,237	1,060	1,237
C&I Prescriptive	T12/T8 1 Lamp 4' To LED Panel	15	129.4	0.0436	7	6	7	30	83.42	906	776	906
C&I Prescriptive	2 Lamp 8ft T12 to 4 Lamp 4ft HPT8	15	41.1	0.0110	7	6	7	25	132.19	288	247	288
C&I Prescriptive	ENERGY STAR Commercial Ice Machine < 500 lb/day harvest rate	9	230.4	0.0338	5	5	5	100	296.00	1,152	1,152	1,152
C&I Prescriptive	Delamp 2' T12	11	36.4	0.0200	5	4	5	2.5	-	182	146	182
C&I Prescriptive	VFD Supply Fan <100hp	15	35,640.0	0.0149	4	3	4	900	10,915.00	142,560	106,920	142,560
C&I Prescriptive	Interior 1000W HID to LED	16	898.6	0.0199	4	3	4	110	-	3,594	2,696	3,594
C&I Prescriptive	2x2 Panel	15	144.0	0.0377	4	3	4	20	45.82	576	432	576
C&I Prescriptive	Split System Unitary Air Conditioner 65,000-135,000 BtuH	15	1,689.3	0.0424	3	2	3	240	666.67	5,068	3,379	5,068
C&I Prescriptive	ENERGY STAR Commercial Hot Holding Cabinets Full Size	12	5,256.0	0.8100	3	2	3	420	1,110.00	15,768	10,512	15,768
C&I Prescriptive	Split System Unitary Air Conditioner 135,000-240,000 BtuH	15	4,865.3	0.0442	2	2	2	600	1,100.00	9,731	9,731	9,731
C&I Prescriptive	ENERGY STAR CEE Tier 2 Window/Sleeve/Room AC < 14,000 BTUH	15	232.2	0.2248	1	1	1	20	-	232	232	232
C&I Prescriptive	ENERGY STAR CEE Tier 2 Window/Sleeve/Room AC >= 14,000 BTUH	15	363.3	0.4430	1	1	1	22	-	363	363	363
C&I Prescriptive	Split System Unitary Air Conditioner 240,000-760,000 BtuH	15	27,827.4	0.2015	1	1	1	1200	2,000.00	27,827	27,827	27,827
C&I Prescriptive	Split System Unitary Air Conditioner >760,000 BtuH	15	81,970.0	2.8190	1	1	1	1050	-	81,970	81,970	81,970
C&I Prescriptive	ENERGY STAR Window/Sleeve/Room AC < 14,000 BTUH	15	189.8	0.1628	1	1	1	12	-	190	190	190
C&I Prescriptive	ENERGY STAR Window/Sleeve/Room AC >= 14,000 BTUH	15	293.3	0.3208	1	1	1	14	-	293	293	293
C&I Prescriptive	ENERGY STAR CEE Tier 1 Window/Sleeve/Room AC < 14,000 BTUH	15	189.8	0.1135	1	1	1	16	-	190	190	190
C&I Prescriptive	ENERGY STAR CEE Tier 1 Window/Sleeve/Room AC >= 14,000 BTUH	15	293.3	0.2237	1	1	1	18	-	293	293	293
C&I Prescriptive	Electric Chiller - Air cooled, with condenser	20	9,606.6	0.0031	1	1	1	1500	-	9,607	9,607	9,607
C&I Prescriptive	Electric Chiller Tune-up - Air cooled, without condenser	5	8,153.0	0.0013	1	1	1	400	-	8,153	8,153	8,153

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
C&I Prescriptive	Electric Chiller Tune-up - Water Cooled, Centrifugal	5	21,430.9	0.0002	1	1	1	1600	-	21,431	21,431	21,431
C&I Prescriptive	Electric Chiller Tune-up - Water Cooled, Rotary Screw	5	5,073.1	0.0425	1	1	1	1600	1,790.00	5,073	5,073	5,073
C&I Prescriptive	Chilled Water Reset Control	10	173.0	0.0133	1	1	1	1.5	-	173	173	173
C&I Prescriptive	Electric Chiller - Air cooled, without condenser	20	2,923.7	0.0013	1	1	1	500	-	2,924	2,924	2,924
C&I Prescriptive	Electric Chiller - Water Cooled, Rotary Screw <150 tons	20	5,814.1	0.0011	1	1	1	1500	-	5,814	5,814	5,814
C&I Prescriptive	Electric Chiller - Water Cooled, Rotary Screw 150-300 tons	20	17,632.9	0.0000	1	1	1	4500	-	17,633	17,633	17,633
C&I Prescriptive	Electric Chiller - Water Cooled, Rotary Screw >300 tons	20	33,449.4	0.0003	1	1	1	9000	-	33,449	33,449	33,449
C&I Prescriptive	Electric Chiller - Water Cooled, Centrifugal <150 tons	20	6,969.9	0.0033	1	1	1	1500	-	6,970	6,970	6,970
C&I Prescriptive	Electric Chiller - Water Cooled, Centrifugal 150-300 tons	20	17,438.9	0.0006	1	1	1	4500	-	17,439	17,439	17,439
C&I Prescriptive	Electric Chiller - Water Cooled, Centrifugal >300 tons	20	18,656.4	0.0416	1	1	1	9000	13,833.00	18,656	18,656	18,656
C&I Prescriptive	Electric Chiller Tune-up - Air cooled, with condenser	5	9,222.3	0.0015	1	1	1	400	-	9,222	9,222	9,222
C&I Prescriptive	Central Lighting Control	8	224.7	0.0270	1	1	1	30	-	225	225	225
C&I Prescriptive	Daylight Dimming Control <500w	8	337.1	0.0135	1	1	1	20	-	337	337	337
C&I Prescriptive	Occupancy Sensor - Wall Mounted 500W+	8	344.9	0.0270	1	1	1	40	-	345	345	345
C&I Prescriptive	Daylight Dimming Control 500W+	8	674.2	0.0270	1	1	1	40	-	674	674	674
C&I Prescriptive	Fixture Mounted daylight dimming control	8	168.6	0.0068	1	1	1	15	-	169	169	169
C&I Prescriptive	Switching Control for Multi-Level Lighting 500W+	8	168.6	0.0068	1	1	1	30	-	169	169	169
C&I Prescriptive	ENERGY STAR Griddles	12	6,995.7	1.3416	1	1	1	550	-	6,996	6,996	6,996
C&I Prescriptive	ENERGY STAR Combination Oven	12	18,431.7	3.5348	1	1	1	1000	-	18,432	18,432	18,432
C&I Prescriptive	ENERGY STAR Convection Oven	12	3,234.8	0.6204	1	1	1	350	-	3,235	3,235	3,235
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Door Type, High Temp	15	14,143.0	0.6889	1	1	1	1100	-	14,143	14,143	14,143
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Door Type, Low Temp	15	12,135.0	0.5911	1	1	1	1000	-	12,135	12,135	12,135
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Multi-Tank Conveyor, High Temp	20	34,153.0	1.6635	1	1	1	2700	-	34,153	34,153	34,153
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Multi-Tank Conveyor, Low Temp	20	17,465.0	0.8507	1	1	1	1400	-	17,465	17,465	17,465
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Single Tank Conveyor, High Temp	20	19,235.0	0.9369	1	1	1	1500	-	19,235	19,235	19,235
C&I Prescriptive	ENERGY STAR Commercial Ice Machine >=500 and <1000 lb/day harvest rate	9	702.4	0.1100	1	1	1	175	1,485.00	702	702	702
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Single Tank Conveyor, Low Temp	20	11,384.0	0.5545	1	1	1	900	-	11,384	11,384	11,384
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Under Counter, High Temp	10	7,471.0	0.3639	1	1	1	600	-	7,471	7,471	7,471
C&I Prescriptive	ENERGY STAR Commercial Dishwasher - Under Counter, Low Temp	10	1,213.0	0.0591	1	1	1	100	-	1,213	1,213	1,213
C&I Prescriptive	ENERGY STAR Commercial Ice Machine >=1000 lb/day harvest rate	9	1,227.5	0.1898	1	1	1	250	-	1,227	1,227	1,227
C&I Prescriptive	ENERGY STAR Commercial Hot Holding Cabinets Half Size	12	1,795.8	0.2755	1	1	1	150	-	1,796	1,796	1,796
C&I Prescriptive	ENERGY STAR Commercial Hot Holding Cabinets Three Quarter Size	12	2,825.1	0.4334	1	1	1	230	-	2,825	2,825	2,825
C&I Prescriptive	ENERGY STAR Commercial Fryer	12	1,526.2	0.2195	1	1	1	80	-	1,526	1,526	1,526
C&I Prescriptive	ENERGY STAR Commercial Steam Cookers	12	2,200.0	0.4400	1	1	1	200	-	2,200	2,200	2,200
C&I Prescriptive	Air Source Heat Pump <65,000 Btu/h	15	555.3	0.0136	1	1	1	120	221.67	555	555	555
C&I Prescriptive	Air Source Heat Pump >=65,000 Btu/h and <135,000 Btu/h	15	492.0	-	1	1	1	240	-	492	492	492
C&I Prescriptive	Air Source Heat Pump >=135,000 Btu/h and <240,000 Btu/h	15	1,350.0	-	1	1	1	600	-	1,350	1,350	1,350
C&I Prescriptive	Air Source Heat Pump >=240,000 Btu/h and <760,000 Btu/h	15	6,949.0	-	1	1	1	1200	-	6,949	6,949	6,949
C&I Prescriptive	Water Source Heat Pump <17,000Btu/hr	15	160.0	0.0500	1	1	1	30	-	160	160	160
C&I Prescriptive	Water Source Heat Pump >=17,000Btu/hr - 65,000Btu/hr	15	596.6	0.0475	1	1	1	120	-	597	597	597
C&I Prescriptive	Water Source Heat Pump >=65,000Btu/hr and <135,000Btu/hr	15	1,193.2	0.0463	1	1	1	240	-	1,193	1,193	1,193
C&I Prescriptive	Ground Source Heat Pump <135,000 Btu/hr	15	1,322.4	-	1	1	1	30	-	1,322	1,322	1,322
C&I Prescriptive	Ground Water Source Heat Pump <135,000 Btu/hr	15	41,712.0	0.0350	1	1	1	240	-	41,712	41,712	41,712
C&I Prescriptive	High Bay HID to LED <175W	16	303.5	0.0067	1	1	1	35	-	303	303	303
C&I Prescriptive	T12 or T8 1-Lamp 8-Foot to LED Panel or Kit	15	118.0	0.0228	1	1	1	40	-	118	118	118
C&I Prescriptive	T12/T8 Lamp 8' to LED Tube	15	210.0	-	1	1	1	10	-	210	210	210
C&I Prescriptive	Clothes Washer ENERGY STAR/CEE Tier 1	11	541.5	-	1	1	1	50	-	542	542	542
C&I Prescriptive	Pellet Dryers duct insulation	5	297.7	0.0450	1	1	1	30	-	298	298	298
C&I Prescriptive	Clothes Washer CEE Tier 2	11	541.5	-	1	1	1	60	-	542	542	542
C&I Prescriptive	Clothes Washer CEE Tier 3	11	541.5	-	1	1	1	70	-	542	542	542
C&I Prescriptive	Smart Strip Plug Outlet	8	23.6	-	1	1	1	8	-	24	24	24
C&I Prescriptive	Plug Load Occupancy sensor with Smart Strip	8	169.0	-	1	1	1	20	-	169	169	169
C&I Prescriptive	Compressed Air Engineered Nozzles (1/8")	15	429.8	0.1631	1	1	1	5	-	430	430	430
C&I Prescriptive	Compressed Air Engineered Nozzles (1/4")	15	1,346.6	0.5111	1	1	1	8	-	1,347	1,347	1,347
C&I Prescriptive	VFD compressor	15	31,875.0	0.0011	1	1	1	5625	-	31,875	31,875	31,875
C&I Prescriptive	Barrel Wraps (Inj Mold Only)	5	983.3	0.0306	1	1	1	30	-	983	983	983

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C&I Prescriptive	Electric Chiller Tune-up - Water Cooled, Centrifugal	5	21,430.9	0.0002	1	1	1	1600	-	21,431	21,431	21,431
C&I Prescriptive	T12/T8 96" 1 Lamp To Delamp	11	157.2	0.0684	1	1	1	10	-	157	157	157
C&I Prescriptive	Incandescent Traffic Signal To LED Traffic Signal Round 8" Red	10	298.7	0.0341	1	1	1	30	-	299	299	299
C&I Prescriptive	Incandescent Traffic Signal To LED Traffic Signal Pedestrian 12"	10	946.1	0.1080	1	1	1	50	-	946	946	946
C&I Prescriptive	Packaged Terminal Air Conditioner (PTAC) <7000 BtuH	15	138.0	0.2284	1	1	1	35	-	138	138	138
C&I Prescriptive	Packaged Terminal Air Conditioner (PTAC) 7,000-15,000 BtuH	15	1,702.4	0.9600	1	1	1	70	35.00	1,702	1,702	1,702
C&I Prescriptive	Packaged Terminal Air Conditioner (PTAC) >15,000 BtuH	15	506.0	0.7715	1	1	1	105	-	506	506	506
C&I Prescriptive	Packaged Terminal Heat Pump (PTHP) <7,000 BtuH	15	395.4	0.3945	1	1	1	35	48.97	395	395	395
C&I Prescriptive	Packaged Terminal Heat Pump (PTHP) 7,000 - 15,000 BtuH	15	385.0	0.1000	1	1	1	70	-	385	385	385
C&I Prescriptive	Packaged Terminal Heat Pump (PTHP) > 15,000 BtuH	15	639.8	0.1133	1	1	1	105	-	640	640	640
C&I Prescriptive	Cooler <15 vol	12	3,671.3	0.0593	1	1	1	375	-	3,671	3,671	3,671
C&I Prescriptive	T12 6' To Refrigerated Display Case Lighting 6' LED - Cooler With Connected Motion Sensor	8.1	825.7	0.0856	1	1	1	45	-	826	826	826
C&I Prescriptive	T12 6' To Refrigerated Display Case Lighting 6' LED - Freezer	8.1	622.5	0.0923	1	1	1	30	-	622	622	622
C&I Prescriptive	T12 6' To Refrigerated Display Case Lighting 6' LED - Freezer With Connected Motion Sensor	8.1	890.2	0.0923	1	1	1	45	-	890	890	890
C&I Prescriptive	T8 5' To Refrigerated Display Case Lighting 5' LED - Cooler With Connected Motion Sensor	8.1	475.4	0.0493	1	1	1	25	-	475	475	475
C&I Prescriptive	T8 5' To Refrigerated Display Case Lighting 5' LED - Freezer	8.1	358.4	0.0531	1	1	1	15	-	358	358	358
C&I Prescriptive	T8 5' To Refrigerated Display Case Lighting 5' LED - Freezer With Connected Motion Sensor	8.1	512.5	0.0531	1	1	1	25	-	513	513	513
C&I Prescriptive	Cooler - Reach-In Electronically Commutated (EC) Motor	15	328.0	0.0330	1	1	1	35	-	328	328	328
C&I Prescriptive	Freezer - Reach-In Electronically Commutated (EC) Motor	15	411.0	0.0350	1	1	1	45	-	411	411	411
C&I Prescriptive	Cooler 15-30 vol	12	14,411.1	0.0500	1	1	1	1650	164.00	14,411	14,411	14,411
C&I Prescriptive	Freezer - Walk-In Electronically Commutated (EC) Motor	15	532.0	0.0360	1	1	1	45	-	532	532	532
C&I Prescriptive	Cooler Anti-Sweat Heater Controls	12	614.5	-	1	1	1	50	-	615	615	615
C&I Prescriptive	Freezer Anti-Sweat Heater Controls	12	1,302.5	-	1	1	1	100	-	1,303	1,303	1,303
C&I Prescriptive	Refrigerated Case Covers	5	157.5	-	1	1	1	10	-	158	158	158
C&I Prescriptive	Cooler - Glass Door 30-50 vol	12	38,943.5	0.0800	1	1	1	3000	164.00	38,944	38,944	38,944
C&I Prescriptive	Cooler - Glass Door >50 vol	12	91,487.5	0.1000	1	1	1	7000	249.00	91,488	91,488	91,488
C&I Prescriptive	Freezer - Glass Door <15 vol	12	5,837.7	0.0800	1	1	1	750	142.00	5,838	5,838	5,838
C&I Prescriptive	Freezer - Glass Door 15-30 vol	12	26,061.0	0.0900	1	1	1	4500	166.00	26,061	26,061	26,061
C&I Prescriptive	Freezer - Glass Door 30-50 vol	12	164,834.0	0.4400	1	1	1	8000	166.00	164,834	164,834	164,834
C&I Prescriptive	Freezer - Glass Door >50 vol	12	715,400.0	0.7667	1	1	1	35000	407.00	715,400	715,400	715,400
C&I Prescriptive	T12 48" 1 Lamp To T5 46" 1 Lamp	15	25.3	0.0100	1	1	1	4	-	25	25	25
C&I Prescriptive	175 - 250W HID To T5 46" 2 Lamp HO	15	377.7	0.1049	1	1	1	45	-	378	378	378
C&I Prescriptive	175 - 250W HID To T5 46" 3 Lamp HO	15	167.5	0.0465	1	1	1	40	-	168	168	168
C&I Prescriptive	400W HID To T5 46" 4 Lamp HO	15	702.9	0.1952	1	1	1	85	-	703	703	703
C&I Prescriptive	400W HID To T5 46" 6 Lamp HO	15	318.6	0.0885	1	1	1	50	-	319	319	319
C&I Prescriptive	1000W HID To T5 46" 10 Lamp HO	15	1,652.2	0.4587	1	1	1	115	-	1,652	1,652	1,652
C&I Prescriptive	1000W HID To T5 46" 12 Lamp HO	15	1,215.3	0.3374	1	1	1	105	-	1,215	1,215	1,215
C&I Prescriptive	T12 48" 2 Lamp To T5 46" 2 Lamp	15	18.4	0.0073	1	1	1	6	-	18	18	18
C&I Prescriptive	T12 48" 3 Lamp To T5 46" 3 Lamp	15	43.7	0.0173	1	1	1	8	-	44	44	44
C&I Prescriptive	T12 48" 4 Lamp To T5 46" 4 Lamp	15	36.8	0.0146	1	1	1	12	-	37	37	37
C&I Prescriptive	HID 75W-100W To T5 Garage 1 Lamp	15	301.7	0.1104	1	1	1	8	-	302	302	302
C&I Prescriptive	HID 101W-175W To T5 Garage 2 Lamp	15	275.4	0.1008	1	1	1	12	-	275	275	275
C&I Prescriptive	HID 176W+ To T5 Garage 3 Lamp	15	367.2	0.1344	1	1	1	16	-	367	367	367
C&I Prescriptive	Up to 175W HID To T5 46" 2 Lamp HO	15	239.8	0.0666	1	1	1	35	-	240	240	240
C&I Prescriptive	Up to 175W HID To T5 46" 3 Lamp HO	15	88.7	0.0246	1	1	1	30	-	89	89	89
C&I Prescriptive	Up to 175W HID To T8VHO 48" 3 Lamp	15	197.1	0.0547	1	1	1	35	-	197	197	197
C&I Prescriptive	T12 48" 1 Lamp To T8 48" 25W 1 Lamp	15	48.3	0.0192	1	1	1	8	-	48	48	48
C&I Prescriptive	T12 48" 2 Lamp To T8 48" 25W 2 Lamp	15	71.3	0.0283	1	1	1	10	-	71	71	71
C&I Prescriptive	T12 48" 3 Lamp To T8 48" 25W 3 Lamp	15	123.5	0.0490	1	1	1	12	-	123	123	123
C&I Prescriptive	T12 48" 4 Lamp To T8 48" 25W 4 Lamp	15	146.0	0.0579	1	1	1	16	-	146	146	146
C&I Prescriptive	1 Lamp 4ft T12 to 1 Lamp 4ft HPT8	15	41.4	0.0164	1	1	1	4	-	41	41	41
C&I Prescriptive	3 Lamp 4ft T12 to 3 Lamp 4ft HPT8	15	96.6	0.0383	1	1	1	8	-	97	97	97
C&I Prescriptive	4 Lamp 4ft T12 to 4 Lamp 4ft HPT8	15	110.4	0.0438	1	1	1	12	-	110	110	110
C&I Prescriptive	T12 96" 1 Lamp To T8 96" 1 Lamp	15	39.1	0.0155	1	1	1	6	-	39	39	39
C&I Prescriptive	T12 96" 2 Lamp To T8 96" 2 Lamp	15	32.2	0.0128	1	1	1	8	-	32	32	32
C&I Prescriptive	176-250W HID To T8VHO 48" 4 Lamp	15	266.1	0.0739	1	1	1	50	-	266	266	266
C&I Prescriptive	1 Lamp 8ft T12 to 2 Lamp 4ft HPT8	15	62.1	0.0246	1	1	1	20	-	62	62	62

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
C&I Prescriptive	Electric Chiller Tune-up - Water Cooled, Centrifugal	5	21,430.9	0.0002	1	1	1	1600	-	21,431	21,431	21,431
C&I Prescriptive	T12/T8 96" 1 Lamp To Delamp	11	157.2	0.0684	1	1	1	10	-	157	157	157
C&I Prescriptive	400W HID to T8VHO 4ft 6 Lamp	15	762.0	0.2116	1	1	1	85	-	762	762	762
C&I Prescriptive	400W HID to T8VHO 4ft 8 Lamp	15	558.4	0.1550	1	1	1	60	-	558	558	558
C&I Prescriptive	MH 1000W To T8VHO 48" 8 Lamp (2 fixtures)	15	1,655.5	0.4596	1	1	1	125	-	1,655	1,655	1,655
C&I Prescriptive	T12 48" 1 Lamp To T8 48" 28W 1 Lamp	15	45.3	0.0180	1	1	1	6	-	45	45	45
C&I Prescriptive	T12 48" 2 Lamp To T8 48" 28W 2 Lamp	15	57.5	0.0228	1	1	1	8	-	57	57	57
C&I Prescriptive	T12 48" 3 Lamp To T8 48" 28W 3 Lamp	15	103.7	0.0411	1	1	1	10	-	104	104	104
C&I Prescriptive	Vending Machine Occ Sensor - Refrigerated Beverage	5	1,611.8	-	1	1	1	50	-	1,612	1,612	1,612
C&I Prescriptive	Snack Machine Controller (Non-refrigerated vending)	5	342.5	-	1	1	1	25	-	343	343	343
C&I Prescriptive	Vending Machine Occ Sensor - Refrigerated Glass Front Cooler	5	1,208.9	-	1	1	1	50	-	1,209	1,209	1,209
C&I Prescriptive	VFD Return Fan <100hp	15	60,000.0	-	1	1	1	900	-	60,000	60,000	60,000
C&I Prescriptive	VFD Tower Fan <100hp	15	19,220.0	-	1	1	1	900	-	19,220	19,220	19,220
C&I Prescriptive	VFD CW Pump <100hp	15	26,800.0	-	1	1	1	900	-	26,800	26,800	26,800
C&I Prescriptive	VFD HW Pump <100hp	15	88,620.0	0.9790	1	1	1	900	-	88,620	88,620	88,620
C&I Prescriptive	VFD CHW Pump <100hp	15	74,020.0	0.3900	1	1	1	900	-	74,020	74,020	74,020
C&I Prescriptive	Heat Pump Water Heater 10-50 MBH	10	3,534.0	0.5000	1	1	1	500	-	3,534	3,534	3,534
C&I Prescriptive	Window Film	10	3.7	0.0010	1	1	1	1	-	4	4	4
C&I Prescriptive	Pre-Rinse Sprayer - Electric	5	3,727.2	-	1	1	1	50	-	3,727	3,727	3,727
C&I Prescriptive	Livestock Waterer	10	266.1	0.5250	1	1	1	110	787.50	266	266	266
C&I Prescriptive	Agriculture - Poultry Farm LED Lighting	7	292.0	0.0500	1	1	1	10	30.00	292	292	292
C&I Prescriptive	VSD Milk Pump	15	33.9	0.0116	1	1	1	5	4,000.00	34	34	34
C&I Prescriptive	High Volume Low Speed Fans	10	8,543.0	3.1000	1	1	1	1,000	4,180.00	8,543	8,543	8,543
C&I Prescriptive	High Speed Fans (Ventilation and Circulation)	7	625.0	0.1980	1	1	1	50	150.00	625	625	625
C&I Prescriptive	Dairy Plate Cooler	15	76.2	0.0163	1	1	1	8	-	76	76	76
C&I Prescriptive	Heat Mat (Single, "14x60")	5	657.0	-	1	1	1	65	225.00	657	657	657
C&I Prescriptive	Automatic Milker Take Off	15	556.0	0.1165	1	1	1	5	-	556	556	556
C&I Prescriptive	HE Dairy Scroll Compressor	12	279.5	0.0689	1	1	1	250	-	279	279	279
C&I Prescriptive	Heat Reclaimer (No Precooler Installed)	14	152.7	-	1	1	1	5	-	153	153	153
C&I Prescriptive	Prescriptive Other	15								132,109	99,082	132,110
Total C&I Prescriptive					7,024	5,981	6,856			4,999,125	4,501,186	5,002,621
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 1-Lamp 4' T12 to HP, 28W or 25W T8	15	64.0	0.0171	80	77	68	12	51	5,122	4,930	4,353
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 2-Lamp 4' T12 to HP, 28W or 25W T8	15	85.4	0.0228	119	116	102	15	56	10,158	9,902	8,707
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 3-Lamp 4' T12 to HP, 28W or 25W T8	15	104.1	0.0383	2	2	1	20	70	208	208	104
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 4-Lamp 4' T12 to HP, 28W or 25W T8	15	116.5	0.0390	159	154	136	24	78	18,523	17,940	15,843
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 1-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8 w/ reflector	15	153.9	0.0246	2	2	1	20	93	308	308	154
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 2-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8 w/ reflector	15	59.3	0.0230	192	185	164	25	108	11,381	10,966	9,721
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 1-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8	15	110.7	0.0246	2	2	1	22	88	221	221	111
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 2-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	41.6	0.0208	256	248	218	27	103	10,653	10,320	9,072
Small Business Direct Install (SBDI)	400W HID to High Bay Fluorescent 6-Lamp 4' HP, 28W or 25W T8	7	703.4	0.2116	2	2	1	125	300	1,407	1,407	703
Small Business Direct Install (SBDI)	250W HID to High Bay Fluorescent 4-Lamp 4' HP, 28W or 25W T8	7	519.9	0.1778	2	2	1	90	255	1,040	1,040	520
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 1-Lamp 4' T12 to 3-Lamp 4' HP, 28W or 25W T8	15	211.2	0.0648	2	2	1	35	75	422	422	211
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 2-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	264.9	0.0876	2	2	1	45	75	530	530	265
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 3-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	199.8	0.0611	2	2	1	35	57	400	400	200
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 4-Lamp 4' T12 to 1-Lamp 4' HP, 28W or 25W T8	15	137.3	0.0246	2	2	1	25	50	275	275	137
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 1-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	360.0	0.1368	2	2	1	60	105	720	720	360
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 1-Lamp 4' T12 to 3-Lamp 4' HP, 28W or 25W T8	15	247.1	0.0716	2	2	1	35	90	494	494	247
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	341.5	0.0910	1152	1115	984	60	58.51	393,353	380,719	335,989
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 3-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	225.7	0.0675	2	2	1	40	88	451	451	226
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 4-Lamp 4' T12 to 1-Lamp 4' HP, 28W or 25W T8	15	149.2	0.0404	2	2	1	25	57	298	298	149
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8	15	275.9	0.0631	2	2	1	50	110	552	552	276
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 3-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	505.3	0.1368	2	2	1	90	140	1,011	1,011	505
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 1-Lamp 4' T12/T8 to 4' LED Tube	15	112.9	0.0232	80	77	68	18	80	9,036	8,697	7,680
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 2-Lamp 4' T12/T8 to 4' LED Tube	15	74.4	-	2	2	1	25	100	149	149	74
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 3-Lamp 4' T12/T8 to 4' LED Tube	15	81.8	-	2	2	1	25	120	164	164	82
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 4-Lamp 4' T12/T8 to 4' LED Tube	15	314.3	0.0645	437	423	374	50	140	137,340	132,940	117,541
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 1-Lamp 8' T12/T8 to 2-Lamp 4' or 1-Lamp 8' LED Tube	15	171.9	0.0353	675	654	577	30	132	116,013	112,404	99,170
Small Business Direct Install (SBDI)	Lamp & Ballast Retrofit: 2-Lamp 8' T12/T8 to 4-Lamp 4' or 2-Lamp 8' LED Tube	15	214.5	0.0433	40	39	34	40	175	8,580	8,366	7,293

Program	Measure	Measure Life	Average Savings per Unit (kW)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 1-Lamp 4' T12/T8 to 3-Lamp 4' LED Tube	15	190.4	-	2	2	1	30	130	381	381	190
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 1-Lamp 4' T12/T8 to 2-Lamp 4' LED Tube	15	354.6	0.0726	80	77	68	60	120	28,285	27,225	24,042
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 2-Lamp 4' T12/T8 to 2-Lamp 4' LED Tube	15	158.1	-	2	2	1	30	100	316	316	158
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 2-Lamp 4' T12/T8 to 1-Lamp 4' LED Tube	15	213.5	-	2	2	1	40	75	427	427	214
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit: 1-Lamp 8' T12/T8 to 4-Lamp 4' or 2-Lamp 8' LED Tube	15	364.8	-	2	2	1	65	250	730	730	365
Small Business Direct Install (SBDI)	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 2' T12 U-tube to 2-Lamp 2' HP, 28W or 25W T8	15	108.0	0.0329	2	2	1	19	89	216	216	108
Small Business Direct Install (SBDI)	400W HID to High Bay LED <=250W	15	589.9	0.1797	172	166	147	220	480	101,461	97,921	86,714
Small Business Direct Install (SBDI)	250W HID to High Bay LED <=100W	15	716.6	0.1778	2	2	1	160	460	1,433	1,433	717
Small Business Direct Install (SBDI)	LED Exit Sign Fixture with Battery Backup	16	87.2	0.0077	641	621	548	60	88	55,923	54,178	47,810
Small Business Direct Install (SBDI)	4-Lamp 4' T12/T8 to LED Panel	15	286.6	-	2	2	1	50	155	573	573	287
Small Business Direct Install (SBDI)	3-Lamp 4' T12/T8 to LED Panel	15	214.9	-	2	2	1	40	145	430	430	215
Small Business Direct Install (SBDI)	2-Lamp 4' T12/T8 to LED Panel	15	93.3	-	2	2	1	40	135	187	187	93
Small Business Direct Install (SBDI)	ENERGY STAR® LED lamps 40W Equivalent	15	64.3	0.0293	279	270	238	12	33	17,951	17,372	15,313
Small Business Direct Install (SBDI)	ENERGY STAR® LED lamps 60W Equivalent	15	120.8	0.0337	913	884	780	22	7.38	110,272	106,769	94,208
Small Business Direct Install (SBDI)	ENERGY STAR® LED lamps 75W+ Equivalent	15	179.2	0.0536	2	2	1	32	35	358	358	179
Small Business Direct Install (SBDI)	ENERGY STAR® LED downlights - 40W Equivalent	15	94.3	0.0285	2	2	1	18	52	189	189	94
Small Business Direct Install (SBDI)	ENERGY STAR® LED downlights - 60W Equivalent	15	132.3	0.0371	5	5	4	27	57	661	661	529
Small Business Direct Install (SBDI)	ENERGY STAR® LED downlights - 75W+ Equivalent	15	205.3	0.0412	398	385	340	35	39	81,698	79,029	69,792
Small Business Direct Install (SBDI)	Delamp 1 lamp 8ft T12 lamp and ballast	10	278.1	-	2	2	1	50	34	556	556	278
Small Business Direct Install (SBDI)	Delamp 2 lamp 8ft T12 lamp and ballast	10	417.2	-	2	2	1	75	36	834	834	417
Small Business Direct Install (SBDI)	Delamp 4 lamp 8ft T12 lamp and ballast	10	834.3	-	2	2	1	75	36	1,669	1,669	834
Small Business Direct Install (SBDI)	Vending Machine Occ Sensor - Refrigerated Glass Front Cooler	5	1,208.9	-	2	2	1	200	178	2,418	2,418	1,209
Small Business Direct Install (SBDI)	Vending Machine Occ Sensor - Refrigerated Beverage	5	1,602.5	-	2	2	1	250	208	3,205	3,205	1,602
Small Business Direct Install (SBDI)	Occupancy Sensors - Ceiling Mount (must control 350 watts)	8	299.3	0.0630	5	5	4	60	170	1,496	1,496	1,197
Small Business Direct Install (SBDI)	Occupancy Sensors - Wall Mount (must control at least 200 watts)	8	250.2	0.0108	2	2	1	40	115	500	500	250
Small Business Direct Install (SBDI)	Occupancy Sensors - Fixture Mount (must control at least 100 watts)	8	154.6	0.0054	2	2	1	25	37	309	309	155
Small Business Direct Install (SBDI)	Exterior Wallpack: 175W HID to LED	15	470.4	0.0251	972	941	830	100	225.5	457,246	442,663	390,447
Small Business Direct Install (SBDI)	Exterior Wallpack: 176 W-250 W HID to LED	15	639.2	0.1236	172	166	147	115	310	109,946	106,111	93,965
Small Business Direct Install (SBDI)	Exterior Wallpack: 251 W-400 W HID to LED	15	1,066.7	0.0900	2	2	1	185	600	2,133	2,133	1,067
Small Business Direct Install (SBDI)	Exterior Canopy: less than 175W HID to LED	15	470.4	0.0251	632	612	540	100	190.4	297,304	287,896	254,025
Small Business Direct Install (SBDI)	Exterior Canopy: 176 W-250 W HID to LED	15	639.2	0.1236	132	128	113	115	272	84,377	81,820	72,322
Small Business Direct Install (SBDI)	Exterior Canopy: 251 W-400 W HID to LED	15	1,066.7	0.0900	2	2	1	185	600	2,133	2,133	1,067
Small Business Direct Install (SBDI)	Exterior Flood: less than 175W HID to LED	15	470.4	0.0251	778	753	664	100	188.33	365,985	354,224	312,357
Small Business Direct Install (SBDI)	Exterior Flood: 176 W-250 W HID to LED	15	639.2	0.1236	146	141	125	115	310	93,326	90,130	79,903
Small Business Direct Install (SBDI)	Exterior Flood: 251 W-400 W HID to LED	15	1,066.7	0.0900	2	2	1	185	600	2,133	2,133	1,067
Small Business Direct Install (SBDI)	Exterior Pole Mount: less than 175W HID to LED	15	470.4	0.0251	680	658	581	100	187.5	319,884	309,535	273,313
Small Business Direct Install (SBDI)	Exterior Pole Mount: 176 W-250 W HID to LED	15	639.2	0.1236	146	141	125	115	310	93,326	90,130	79,903
Small Business Direct Install (SBDI)	Exterior Pole Mount: 251 W-400 W HID to LED	15	1,066.7	0.0900	2	2	1	185	600	2,133	2,133	1,067
Small Business Direct Install (SBDI)	Exterior Pole Mount: 1000W HID to LED	15	3,536.6	0.6745	2	2	1	500	615	7,073	7,073	3,537
Small Business Direct Install (SBDI)	Exterior Other: less than 175W HID to LED	15	470.4	0.0251	534	517	456	100	63.75	251,203	243,206	214,510
Small Business Direct Install (SBDI)	Exterior Other: 176 W-250 W HID to LED	15	639.2	0.1236	119	116	102	115	140	76,067	74,150	65,200
Small Business Direct Install (SBDI)	Exterior Other: 251 W-400 W HID to LED	15	1,066.7	0.0900	2	2	1	185	600	2,133	2,133	1,067
Small Business Direct Install (SBDI)	EC (electronically commutated) Motor, Reach-in Refrigerator	15	325.0	0.0320	2	2	1	70	159	650	650	325
Small Business Direct Install (SBDI)	EC (electronically commutated) Motor, Reach-in Freezer	15	409.0	0.0340	2	2	1	90	159	818	818	409
Small Business Direct Install (SBDI)	EC (electronically commutated) Motor, Walk-in Refrigerator	15	354.0	0.0486	355	343	303	70	137	125,670	121,422	107,262
Small Business Direct Install (SBDI)	EC (electronically commutated) Motor, Walk-in Freezer	15	528.0	0.0560	4	4	3	90	180	2,112	2,112	1,584
Small Business Direct Install (SBDI)	Anti-Sweat Heater Controls - Refrigerator	12	540.0	-	2	2	1	110	300	1,080	1,080	540
Small Business Direct Install (SBDI)	Anti-Sweat Heater Controls - Freezer	12	1,277.0	-	2	2	1	220	360	2,554	2,554	1,277
Small Business Direct Install (SBDI)	Strip Curtain - Walk in Refrigerator	6	13.2	0.0500	35	34	30	2.25	14.5	462	448	396
Small Business Direct Install (SBDI)	Strip Curtain - Walk in Freezer	6	92.9	0.3400	35	34	30	15	14.5	3,253	3,160	2,788
Small Business Direct Install (SBDI)	Refrigerated Display Case Lighting 5' T12/T8 to LED - Refrigerator	8.1	332.0	0.0493	2	2	1	55	180	664	664	332
Small Business Direct Install (SBDI)	Refrigerated Display Case Lighting 5' T12/T8 to LED - Freezer	8.1	358.0	0.0856	2	2	1	55	180	716	716	358
Small Business Direct Install (SBDI)	Refrigerated Display Case Lighting 6' T12/T8 to LED - Refrigerator	8.1	450.0	0.0531	2	2	1	70	200	900	900	450
Small Business Direct Install (SBDI)	Refrigerated Display Case Lighting 6' T12/T8 to LED - Freezer	8.1	498.0	0.0923	2	2	1	70	200	996	996	498
Small Business Direct Install (SBDI)	Programmable Thermostat - Single Point - Electric Only	15	2,037.5	-	272	263	464	250	5	554,200	535,863	945,400
Small Business Direct Install (SBDI)	Programmable Thermostat - Multi Point - Electric Only	15	4,658.0	-	2	2	2	325	10	9,316	9,316	9,316
Small Business Direct Install (SBDI)	"Smart" Wi-Fi Thermostat - Single Point - Electric Only	15	2,037.5	-	2	2	2	400	50	4,075	4,075	4,075
Small Business Direct Install (SBDI)	"Smart" Wi-Fi Programmable Thermostat - Multi Point - Electric Only	15	4,658.0	-	2	2	2	450	100	9,316	9,316	9,316
Small Business Direct Install (SBDI)	Pre-Rinse Sprayer - Electric	5	3,727.2	-	2	2	1	100	0	7,454	7,454	3,727
Small Business Direct Install (SBDI)	Faucet Aerator - Electric	10	391.0	-	0	0	0	50	0	-	-	-
Small Business Direct Install (SBDI)	2x2 Fluorescent Fixture to LED Panel	15	144.0	0.0377	7	7	6	20	45.82	1,008	1,008	864
Total SBDI					10,808	10,465	9,429			4,032,934	3,905,372	3,900,306

Program	Measure	Measure Life	Average Savings per Unit (kWh)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
Multifamily Retrofit	Pre-Rinse Sprayer - Electric	5	3,727.2	-	0	0	0	100	0	-	-	-
Multifamily Retrofit	Faucet Aerator - Electric	10	391.0	-	1	1	1	50	0	391	391	391
Multifamily Retrofit	Exterior Pole Mount: 1000W HID to LED	15	3,536.6	0.6745	1	1	1	500	615	3,537	3,537	3,537
Multifamily Retrofit	Exterior Wallpack: 251 W-400 W HID to LED	15	1,066.7	0.0900	1	1	1	185	600	1,067	1,067	1,067
Multifamily Retrofit	Exterior Canopy: 251 W-400 W HID to LED	15	1,066.7	0.0900	1	1	1	185	600	1,067	1,067	1,067
Multifamily Retrofit	Exterior Flood: 251 W-400 W HID to LED	15	1,066.7	0.0900	1	1	1	185	600	1,067	1,067	1,067
Multifamily Retrofit	Exterior Pole Mount: 251 W-400 W HID to LED	15	1,066.7	0.0900	1	1	1	185	600	1,067	1,067	1,067
Multifamily Retrofit	Exterior Other: 251 W-400 W HID to LED	15	1,066.7	0.0900	1	1	1	185	600	1,067	1,067	1,067
Multifamily Retrofit	400W HID to High Bay LED <=250W	15	589.9	0.1797	1	1	1	220	480	590	590	590
Multifamily Retrofit	250W HID to High Bay LED <=100W	15	716.6	0.1778	0	0	0	160	460	-	-	-
Multifamily Retrofit	Exterior Wallpack: 176 W-250 W HID to LED	15	639.2	0.1236	4	4	4	115	310	2,557	2,557	2,557
Multifamily Retrofit	Exterior Canopy: 176 W-250 W HID to LED	15	639.2	0.1236	4	4	4	115	272	2,557	2,557	2,557
Multifamily Retrofit	Exterior Flood: 176 W-250 W HID to LED	15	639.2	0.1236	4	4	4	115	310	2,557	2,557	2,557
Multifamily Retrofit	Exterior Pole Mount: 176 W-250 W HID to LED	15	639.2	0.1236	4	4	4	115	310	2,557	2,557	2,557
Multifamily Retrofit	Exterior Other: 176 W-250 W HID to LED	15	639.2	0.1236	4	4	4	115	140	2,557	2,557	2,557
Multifamily Retrofit	Anti-Sweat Heater Controls - Freezer	12	1,277.0	-	0	0	0	220	360	-	-	-
Multifamily Retrofit	Exterior Wallpack: 175W HID to LED	15	470.4	0.0251	14	14	14	100	225.5	6,586	6,586	6,586
Multifamily Retrofit	Exterior Canopy: less than 175W HID to LED	15	470.4	0.0251	14	14	14	100	190.4	6,586	6,586	6,586
Multifamily Retrofit	Exterior Flood: less than 175W HID to LED	15	470.4	0.0251	14	14	14	100	188.33	6,586	6,586	6,586
Multifamily Retrofit	Exterior Pole Mount: less than 175W HID to LED	15	470.4	0.0251	14	14	14	100	187.5	6,586	6,586	6,586
Multifamily Retrofit	Exterior Other: less than 175W HID to LED	15	470.4	0.0251	14	14	14	100	63.75	6,586	6,586	6,586
Multifamily Retrofit	400W HID to High Bay Fluorescent 6-Lamp 4' HP, 28W or 25W T8	7	703.4	0.2116	1	1	1	125	300	703	703	703
Multifamily Retrofit	Anti-Sweat Heater Controls - Refrigerator	12	540.0	-	0	0	0	110	300	-	-	-
Multifamily Retrofit	250W HID to High Bay Fluorescent 4-Lamp 4' HP, 28W or 25W T8	7	519.9	0.1778	0	0	0	90	255	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 4-Lamp 8' T12/T8 to 4-Lamp 4' or 2-Lamp 8' LED Tube	15	364.8	-	0	0	0	65	250	-	-	-
Multifamily Retrofit	Vending Machine Occ Sensor - Refrigerated Beverage	5	1,602.5	-	0	0	0	250	208	-	-	-
Multifamily Retrofit	Refrigerated Display Case Lighting 6' T12/T8 to LED - Refrigerator	8.1	450.0	0.0531	0	0	0	70	200	-	-	-
Multifamily Retrofit	Refrigerated Display Case Lighting 6' T12/T8 to LED - Freezer	8.1	498.0	0.0923	0	0	0	70	200	-	-	-
Multifamily Retrofit	EC (electronically commutated) Motor, Walk-in Refrigerator	15	354.0	0.0486	0	0	0	70	137	-	-	-
Multifamily Retrofit	EC (electronically commutated) Motor, Walk-in Freezer	15	528.0	0.0560	0	0	0	90	180	-	-	-
Multifamily Retrofit	Refrigerated Display Case Lighting 5' T12/T8 to LED - Refrigerator	8.1	332.0	0.0493	0	0	0	55	180	-	-	-
Multifamily Retrofit	Refrigerated Display Case Lighting 5' T12/T8 to LED - Freezer	8.1	358.0	0.0856	0	0	0	55	180	-	-	-
Multifamily Retrofit	Vending Machine Occ Sensor - Refrigerated Glass Front Cooler	5	1,208.9	-	0	0	0	200	178	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 2-Lamp 8' T12/T8 to 4-Lamp 4' or 2-Lamp 8' LED Tube	15	214.5	0.0433	2	2	2	40	175	429	429	429
Multifamily Retrofit	Occupancy Sensors - Ceiling Mount (must control 350 watts)	8	299.3	0.0630	1	1	1	60	170	299	299	299
Multifamily Retrofit	EC (electronically commutated) Motor, Reach-in Refrigerator	15	325.0	0.0320	0	0	0	70	159	-	-	-
Multifamily Retrofit	EC (electronically commutated) Motor, Reach-in Freezer	15	409.0	0.0340	0	0	0	90	159	-	-	-
Multifamily Retrofit	4-Lamp 4' T12/T8 to LED Panel	15	286.6	-	0	0	0	50	155	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 1-Lamp 8' T12/T8 to 2-Lamp 4' or 1-Lamp 8' LED Tube	15	171.9	0.0353	21	21	21	30	132	3,609	3,609	3,609
Multifamily Retrofit	3-Lamp 4' T12/T8 to LED Panel	15	214.9	-	0	0	0	40	145	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 4-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	505.3	0.1368	0	0	0	90	140	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 4-Lamp 4' T12/T8 to 4' LED Tube	15	314.3	0.0645	14	14	14	50	140	4,400	4,400	4,400
Multifamily Retrofit	2-Lamp 4' T12/T8 to LED Panel	15	93.3	-	0	0	0	40	135	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 4-Lamp 4' T12/T8 to 3-Lamp 4' LED Tube	15	190.4	-	0	0	0	30	130	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 3-Lamp 4' T12/T8 to 4' LED Tube	15	81.8	-	0	0	0	25	120	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 4-Lamp 4' T12/T8 to 2-Lamp 4' LED Tube	15	353.6	0.0726	3	3	3	60	120	1,061	1,061	1,061
Multifamily Retrofit	Occupancy Sensors - Wall Mount (must control at least 200 watts)	8	250.2	0.0108	0	0	0	40	115	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8	15	275.9	0.0631	1	1	1	50	110	276	276	276
Multifamily Retrofit	Lamp & Ballast Retrofit: 2-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8 w/ reflector	15	59.3	0.0230	1	1	1	25	108	59	59	59
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 4-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	360.0	0.1368	0	0	0	60	105	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 2-Lamp 8' T12 to 4-Lamp 4' or 2-Lamp 8' HP, 28W or 25W T8	15	41.6	0.0208	1	1	1	27	103	42	42	42
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 4-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	341.5	0.0910	35	35	35	60	58.51	11,951	11,951	11,951
Multifamily Retrofit	Lamp & Ballast Retrofit: 2-Lamp 4' T12/T8 to 4' LED Tube	15	74.4	-	0	0	0	25	100	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 4-Lamp 4' T12/T8 to 2-Lamp 4' LED Tube	15	158.1	-	0	0	0	30	100	-	-	-
Multifamily Retrofit	*Smart* Wi-Fi Programmable Thermostat - Multi Point - Electric Only	15	4,658.0	-	0	0	0	450	100	-	-	-

Program	Measure	Measure Life	Average Savings per Unit (kWh)	Demand per Unit (KW)	2018 Participation	2019 Participation	2020 Participation	Avg Incentive Paid Per Unit	Average Incremental Cost	2018 kWh Savings	2019 kWh Savings	2020 kWh Savings
Multifamily Retrofit	Lamp & Ballast Retrofit: 1-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8 w/ reflector	15	153.9	0.0246	1	1	1	20	93	154	154	154
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 1-Lamp 4' T12 to 3-Lamp 4' HP, 28W or 25W T8	15	247.1	0.0716	1	1	1	35	90	247	247	247
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 2' T12 U-tube to 2-Lamp 2' HP, 28W or 25W T8	15	108.0	0.0329	1	1	1	19	89	108	108	108
Multifamily Retrofit	Lamp & Ballast Retrofit: 1-Lamp 8' T12 to 2-Lamp 4' or 1-Lamp 8' HP, 28W or 25W T8	15	110.7	0.0246	0	0	0	22	88	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 3-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	225.7	0.0675	1	1	1	40	88	226	226	226
Multifamily Retrofit	LED Exit Sign Fixture with Battery Backup	16	87.2	0.0077	1	1	1	60	88	87	87	87
Multifamily Retrofit	Lamp & Ballast Retrofit: 1-Lamp 4' T12/T8 to 4' LED Tube	15	112.9	0.0232	3	3	3	18	80	339	339	339
Multifamily Retrofit	Lamp & Ballast Retrofit: 4-Lamp 4' T12 to HP, 28W or 25W T8	15	116.5	0.0390	1	1	1	24	78	116	116	116
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 1-Lamp 4' T12 to 3-Lamp 4' HP, 28W or 25W T8	15	211.2	0.0648	0	0	0	35	75	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 1-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	264.9	0.0876	0	0	0	45	75	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 2-Lamp 4' T12/T8 to 1-Lamp 4' LED Tube	15	213.5	-	0	0	0	40	75	-	-	-
Multifamily Retrofit	Lamp & Ballast Retrofit: 3-Lamp 4' T12 to HP, 28W or 25W T8	15	104.1	0.0383	0	0	0	20	70	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 3-Lamp 4' T12 to 2-Lamp 4' HP, 28W or 25W T8	15	199.8	0.0611	0	0	0	35	57	-	-	-
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit w/Reflector: 2-Lamp 4' T12 to 1-Lamp 4' HP, 28W or 25W T8	15	149.2	0.0404	1	1	1	25	57	149	149	149
Multifamily Retrofit	ENERGY STAR® LED downlights - 60W Equivalent	15	132.3	0.0371	1	1	1	27	57	132	132	132
Multifamily Retrofit	ENERGY STAR® LED downlights - 75W+ Equivalent	15	205.3	0.0412	12	12	12	35	39	2,463	2,463	2,463
Multifamily Retrofit	Lamp & Ballast Retrofit: 2-Lamp 4' T12 to HP, 28W or 25W T8	15	85.4	0.0228	4	4	4	15	56	341	341	341
Multifamily Retrofit	ENERGY STAR® LED downlights - 40W Equivalent	15	94.3	0.0285	1	1	1	18	52	94	94	94
Multifamily Retrofit	Lamp & Ballast Retrofit: 1-Lamp 4' T12 to HP, 28W or 25W T8	15	64.0	0.0171	3	3	3	12	51	192	192	192
Multifamily Retrofit	Delamping with Lamp & Ballast Retrofit: 2-Lamp 4' T12 to 1-Lamp 4' HP, 28W or 25W T8	15	137.3	0.0246	0	0	0	25	50	-	-	-
Multifamily Retrofit	"Smart" Wi-Fi Thermostat - Single Point - Electric Only	15	2,037.5	-	0	0	0	400	50	-	-	-
Multifamily Retrofit	2x2 Fluorescent Fixture to LED Panel	15	144.0	0.0377	1	1	1	20	45.82	144	144	144
Multifamily Retrofit	Delamp 4 lamp 8ft T12 lamp and ballast	10	834.3	-	0	0	0	75	38	-	-	-
Multifamily Retrofit	Occupancy Sensors - Fixture Mount (must control at least 100 watts)	8	154.6	0.0054	0	0	0	25	37	-	-	-
Multifamily Retrofit	Delamp 2 lamp 8ft T12 lamp and ballast	10	417.2	-	0	0	0	75	36	-	-	-
Multifamily Retrofit	ENERGY STAR® LED lamps 60W Equivalent	15	120.8	0.0337	28	28	28	22	7.38	3,382	3,382	3,382
Multifamily Retrofit	ENERGY STAR® LED lamps 75W+ Equivalent	15	179.2	0.0536	1	1	1	32	35	179	179	179
Multifamily Retrofit	Delamp 1 lamp 8ft T12 lamp and ballast	10	278.1	-	0	0	0	50	34	-	-	-
Multifamily Retrofit	ENERGY STAR® LED lamps 40W Equivalent	15	64.3	0.0293	9	9	9	12	33	579	579	579
Multifamily Retrofit	Strip Curtain - Walk in Refrigerator	6	13.2	0.0500	0	0	0	2.25	14.5	-	-	-
Multifamily Retrofit	Strip Curtain - Walk in Freezer	6	92.9	0.3400	0	0	0	15	14.5	-	-	-
Multifamily Retrofit	Programmable Thermostat - Multi Point - Electric Only	15	4,658.0	-	0	0	0	325	10	-	-	-
Multifamily Retrofit	Programmable Thermostat - Single Point - Electric Only	15	2,037.5	-	7	7	14	250	5	14,263	14,261.50	28,525
Total Multifamily Retrofit					255	255	262			101,590	101,589	115,853
CVR Commercial		15	1,850.6	0.3330				558				1,032,656
Total C&I										15,135,729	16,043,561	17,053,516
Portfolio Total										36,656,341	38,069,187	36,347,642