Santee Cooper DSM Market Potential Study

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1. Executive Summary

Santee Cooper retained Resource Innovations, Inc., to conduct a Market Potential Study (MPS) to determine the potential energy and demand savings that could be achieved by energy efficiency (EE) programs within its retail service territory. The main objective of the study is to estimate the quantity and source of energy savings potential over the next twenty years. Santee Cooper can use the results of this study to develop an EE program portfolio for 2023 through 2042.

1.1. Study Approach

Resource Innovations disaggregated the Santee Cooper (SC) load forecast into its constituent customer and end use components. We estimated end use consumption for the residential and commercial sectors, consistent with the SC's current load forecast for the period 2022 – 2042. Resource Innovations combined data provided by Santee Cooper with other third-party data sources to estimate baseline consumption by economic sector, customer segment, and type of end use. This baseline was calibrated to the Santee Cooper load forecast and includes existing trends in energy efficiency as captured by the forecast. Resource Innovations worked with Santee Cooper Conservation and Energy Efficiency (C&EE) program staff to ensure the forecast did not include projections of future EE program participation. The disaggregated forecast represents a projection of sales of electricity used by end-use products based on current market conditions and historic trends.

Our EE potential estimates result from applying EE measures to the baseline forecast and calculating the associated decrease in energy consumption. Resource Innovations analyzed a comprehensive set of energy efficiency measures (379 measures) and developed estimates of annual energy savings for typical residential and non-residential building types. Our estimates of measures' energy savings vary by customer class, segment, end use, equipment type, and construction vintage. Resource Innovations also developed cost estimates for energy efficiency measures and used Santee Cooper avoided marginal energy and capacity cost data to calculate the costs and benefits of each energy efficiency measure. Cost-effective measures were assigned a technology adoption curve that estimates the market penetration of each over the study's time horizon. The resulting annual incremental savings and cumulative savings provide insight on where opportunities lie for helping customers decrease their electricity consumption, and the results can be used by Santee Cooper C&EE program staff to design programs for 2023 – 2042.

This report describes our overall scope of work, the methods we employed in the study, baseline conditions in the Santee Cooper distribution retail service territory, and details around achievable EE potential estimates. Wherever possible, we include figures and tables to describe methods, baseline conditions, or to summarize our results.

1.2. Savings Potential

Resource Innovations incorporated EE program participation data specific to the Santee Cooper (SC) service territory to capture past EE savings achievements and to estimate the remaining market potential for EE savings. Our market potential studies include all commercially available energy efficiency measures available today; future technological developments or outside influences may alter market conditions and therefore EE savings potential. Nevertheless, this study applies the best currently available data to produce estimates for program planning purposes.

The participation data we were provided by SC includes program participation, measures, and energy savings from 2011-2020. This dataset and others provided by SC were used to establish the baseline condition for 2022. It may be that some historic program measures are no longer projected to be cost-effective within the context of current market prices. Table 1-1 is a summary of Resource Innovations' achievable potential estimates, as well as the levelized cost for each type of potential based on provisions specified in the participation dataset.

Table 1-1: Achievable Energy Efficiency Potential

Achievable Potential Scenario	Energy Efficiency Potential (2023-2042)				
	Energy (GWh)	% of 2042 Base Sales	Winter Demand (MW)	Summer Demand (MW)	Levelized Cost ($/kWh)[1]
Low (Base), cumulative savings	284	5.95%	40.04	55.77	$0.03
Medium, cumulative savings	458	9.59%	64.85	91.87	$0.05
High, cumulative savings	463	9.69%	59.93	105.19	$0.06

Resource Innovations developed three scenarios of achievable potential. The low (base) scenario is based on Santee Cooper's current program incentives (ranging from 25% to 30% of incremental cost of the energy efficient measure) and current program administration and outreach costs, expressed in terms of dollar per annual kWh saved. Measures were screened from the Utility Cost Test (UCT) perspective with a threshold of 1.0. The medium scenario increases incentives offered to a range of 50% of incremental measure costs and reduces the benefit-cost screening threshold for each measure to a UCT value of 0.7. This approach allows some marginally cost-effective measures to be included in the portfolio and potentially boosts savings while maintaining an overall portfolio that is cost-effective from the UCT perspective. The high scenario increases incentives to 75% of incremental measure costs to boost participation, and the avoided marginal energy costs were increased by 50% for this scenario.

[1] Levelized cost presented from the total Utility Cost (UCT) perspective, includes annual program incentives, program administration and outreach costs.

2. Introduction

Market potential studies quantify the expected magnitude of demand-side management savings available to a utility's customer base. They provide a basis for planning utility-sponsored market interventions or for developing a basic understanding of individual customer demands for energy. Market potential studies also provide details on the suite of energy efficiency measures available to energy consumers. The results of market potential studies can inform resource planning efforts if EE is viewed as a supply-side resource or customer service offering.

2.1. Objectives and Deliverables

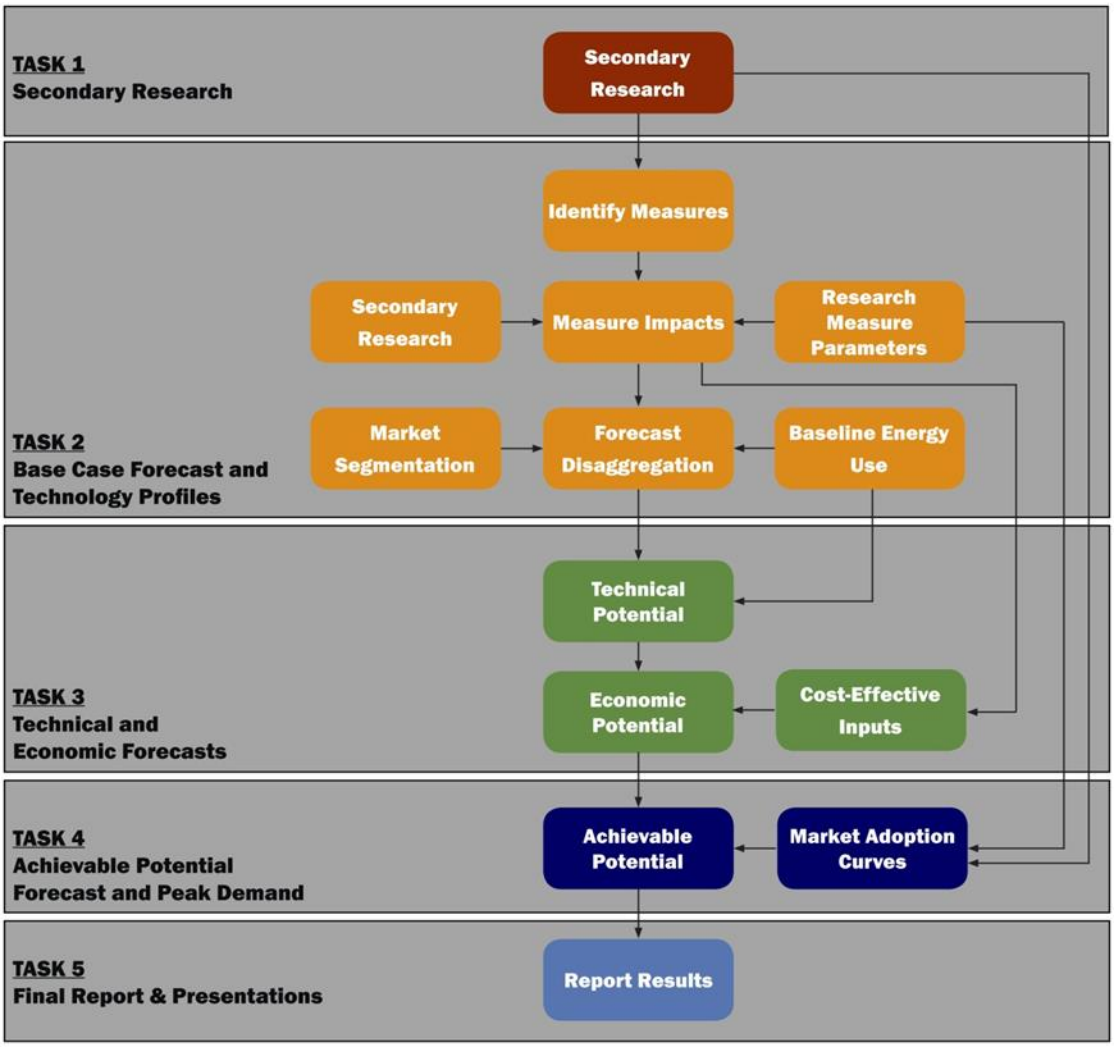
Santee Cooper retained Resource Innovations, Inc., to determine the potential energy and demand savings that could be achieved by EE programs in the Santee Cooper service territory. The main objectives of the study include:

- Estimating the realistic achievable market potential for energy and demand savings over the next twenty years
- Estimating costs and benefits associated with realistic achievable potential

2.2. Market Potential Study Overview

Energy efficiency market potential studies involve a number of analytical steps to produce estimates of each type of energy efficiency potential: technical, economic, and achievable. Resource Innovations used our Microsoft Excel-based modeling tool, TEAPot (Technical, Economic, and Achievable Potential) to calculate these estimates. This modeling tool was built on a platform that supplies the ability to calculate multiple scenarios and potential savings based on variable inputs such as sales/load forecasts, electricity prices, discount rates, and historic program savings.

Figure 2-1: Approach to Market Potential Modeling



As illustrated in Figure 2-1, the assessment started with Santee Cooper's current load forecast, which was then disaggregated into their constituent customer-class and end use components. Resource Innovations examined the effect of the range of energy efficiency measures and practices on each end use, considering fuel shares, current market saturations, technical feasibility, and costs. These unique impacts were aggregated to produce estimates of potential at the technology, end use, customer class, and system levels.

The market potential in the SC territory can be characterized by levels of opportunity. The ceiling or theoretical maximum energy efficiency savings is based on commercialized technologies and behavior measures, while the realistic savings that may be achieved in the market reflects real world constraints such as utility budgets, customer preferences, and policy. This analysis defines these levels of energy efficiency potential according to the Environmental Protection Agency's (EPA) National Action Plan for Energy Efficiency (NAPEE) as illustrated in Figure 2-2.

Figure 2-2: Description of Energy Efficiency Potential Scenarios

EPA – National Guide for Resource Planning

- Technical Potential is the theoretical maximum amount of energy and capacity that could be displaced by efficiency, regardless of cost and other barriers that may prevent the installation or adoption of an energy efficiency measure. Technical potential is only constrained by factors such as technical feasibility and applicability of measures.
- Economic Potential is the amount of energy and capacity that could be reduced by efficiency measures that pass a cost-effectiveness test. The Utility Cost Test (UCT) measures cost and benefits from the viewpoint of the utility
- Achievable Potential is the energy savings that can feasibly be achieved through program and policy interventions.
- Program potential reflects the application of utility program spending, the estimated impacts of incentives, and resulting customer response to specific EE program offerings. **Program potential is not included in this scope of work.**

This study estimates achievable potential over the period 2023 through 2042. Quantifying these levels of energy efficiency potential is an iterative process, each of which reflects different assumptions on cost effectiveness. Each successive level of EE potential narrows the opportunity from the theoretical maximum (i.e. technical potential) to realistic estimates of what may be achievable in terms of EE savings for a market that features utility-supported EE education and programs (i.e. achievable or program potential). The California Standard Practice Manual (SPM) provides the method for estimating cost effectiveness of energy efficiency measures, bundles, programs, or portfolios based on a series of tests representing the perspectives of the utility, customers, and societal stakeholders. In this potential study, individual measures were screened for cost-effectiveness using the Utility Cost Test (UCT) from the Standard Practice Manual.

Resource Innovations estimated EE savings potential based on a combination of market research, analysis, and a review of Santee Cooper's existing EE program performance. The remainder of the report describes our approaches and results for overall market assessment, EE measures, and achievable potential estimates.

3. Market Assessment

A description of baseline market conditions is a precursor to estimating achievable potential. Current energy consumption patterns and customer characteristics provide the starting point for understanding how EE measures can be applied to the market. Our first task in setting up the TEAPot model and estimating achievable potential was to disaggregate the utility forecast into its constituent components.

The 2022 SC load forecast is the baseline for determining EE savings potential for 2023 to 2042. The baseline is informed by relevant SC data, such as the 2017 Baseline Assessment Report provided to SC by Resource Innovations, SC billing and consumption data, and historic SC program participation data. Resource Innovations examined this information to determine customer segments, end use market shares, and equipment shares. This section describes the SC customer base and energy consumption patterns, while the subsequent sections address EE measures and market potential scenarios.

3.1. Customer Segmentation

Resource Innovations segmented the load forecast using customer characteristics. Resource Innovations' goal was to develop an understanding of how EE measures would apply to SC customers. Since electricity consumption patterns and appropriate EE measures vary by customer type, Resource Innovations segmented customers into similar groups to describe how these groups may adopt specific energy efficiency technologies over the study horizon. We divided the baseline energy load forecast according to the following:

1. By Sector – estimate how much of the Santee Cooper's energy load forecast is attributable to the residential and non-residential sectors
2. By Segment – estimate the proportion of annual load to each customer segment
3. By End Use – within a home or business, apportion the types of equipment typically present and associated energy consumption

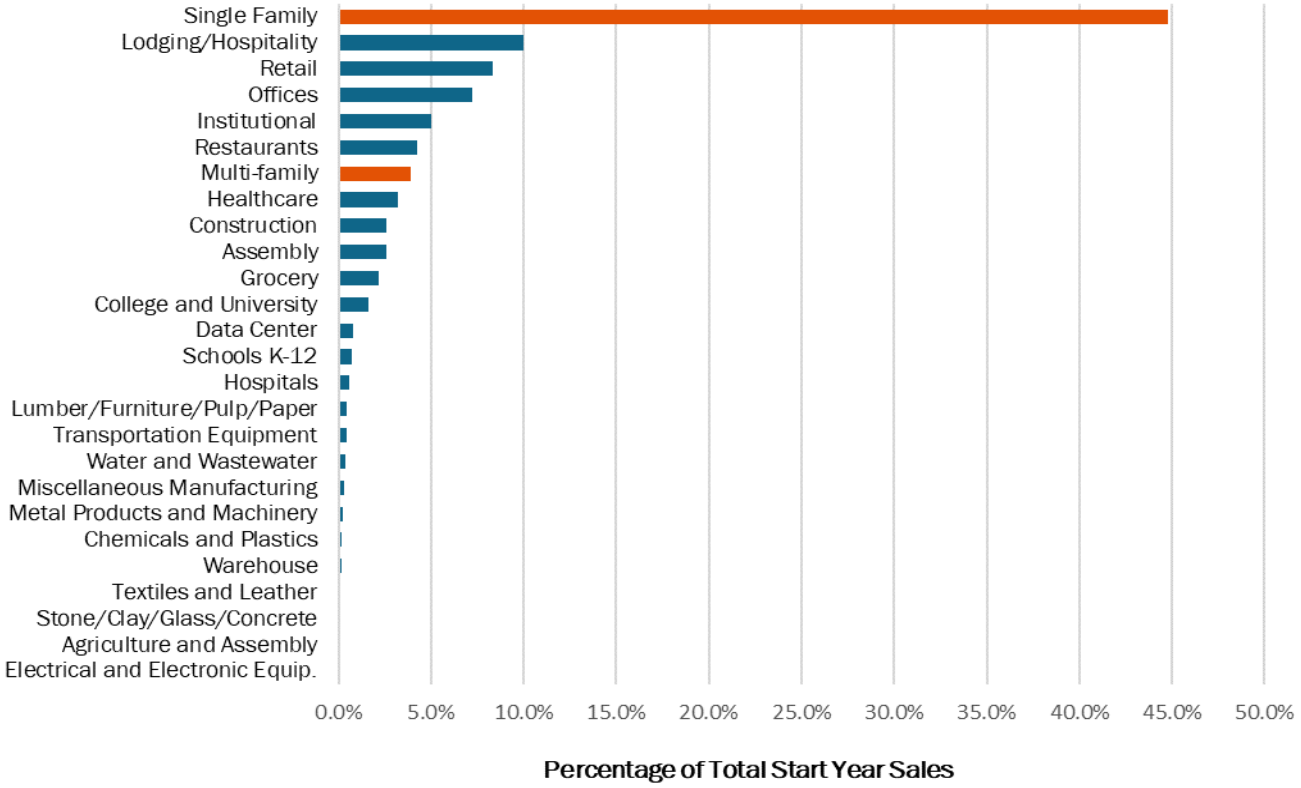
SC consumption forecasts indicate retail loads are roughly split between residential and commercial customers, with residential load taking approximately 49%-54% of retail load over the time horizon. Overall load for both sectors are projected to grow at approximately zero to one percent per year over the study horizon.

Resource Innovations examined Santee Cooper customer care and billing data (CC&B) to establish each segment's share of total billed consumption for the most recent year of available data (2021).

We noted a large share of non-residential accounts were not classified according to customer segment (this study and the CC&B data use North American Industrial Classification, or NAICS codes). While these unclassified customers represent approximately twenty percent of Santee Cooper non-residential accounts, they consumed approximately 321 GWh of energy in 2021 (19% of 2021 commercial load). Resource Innovations examined billed consumption for these customers and determined that the proportion of customer segments within this group can be reasonably assumed to mimic the segment proportions of the overall commercial population.

Figure 3-1 illustrates the share of start-year load by customer segment. This figure combines residential and commercial segments to indicate the overall predominance of each customer segment in terms of 2023 billed consumption.

Figure 3-1: Start-Year Distribution Load by Customer Segment



From an equipment and energy use perspective, each economic sector is expected to show variation across building types. For example, the varieties of energy consuming equipment in an office differ from those found in a supermarket. To account for this variation, Resource Innovations selected end uses that are consistent with those typically described in national or regional surveys. These end uses are listed in Table 3-1.

Table 3-1: End Uses

Residential End Uses	Non-Residential End Uses
Residential Space Heating	Space Heating
Residential Space Cooling	Space Cooling
Residential Domestic Hot Water	Domestic Hot Water
Residential Ventilation and Circulation	Ventilation and Circulation
Lighting	Interior lighting
Residential Cooking	Exterior lighting
Refrigerators	Cooking
Freezers	Refrigeration
Clothes Washers	Office Equipment
Clothes Dryers	Miscellaneous
Dishwashers	Transportation
Plug Load	Process Heating
Residential Miscellaneous	Process Cooling
Residential Transportation	Compressed Air
	Motors Pumps
	Motors Fans Blowers
	Process Specific
	Exterior Lighting
	HVAC
	Other
	Interior Lighting High Bay
	Interior Lighting Linear Fluorescent
	Interior Lighting Other

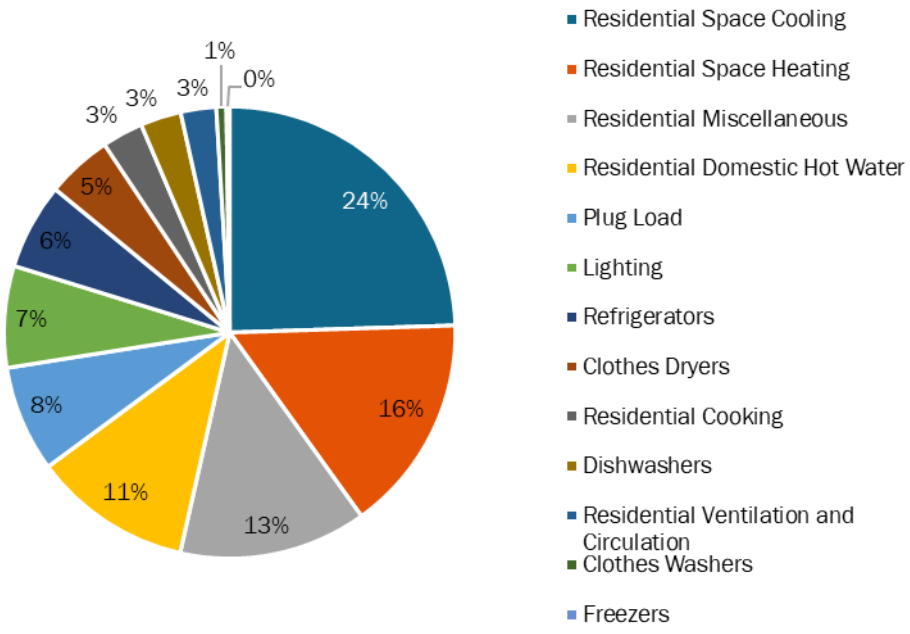
3.2. End Use Consumption Estimates

Resource Innovations segmented the SC load forecast into customer classes, segments, and end uses. We applied data from Santee Cooper and from the Energy Information Administration (EIA) to create these segments. Resource Innovations applied estimates of end use saturation, energy fuel share, and equipment type saturation to the average energy consumption in each sector to develop consumption estimates for each customer segment and end use. End use forecast disaggregation for the residential sector was based on residential unit energy consumption (UEC) values used in the SC forecast development process. Non-residential end use intensities were based on EIA's Commercial Buildings Energy Consumption Survey (CBECS) and Manufacturing Energy Consumption Survey (MECS). These figures are used to estimate each end use's share of total consumption for each segment.

3.3. Base Year 2022 Disaggregated Load

Resource Innovations combined the segmentation analysis with these estimates of end use consumption shares to describe total sector consumption by end use for the residential and non-residential customer types. Estimates of base year end use consumption for the residential sector follow patterns typical of the Southeastern United States. The largest end uses in terms of total residential system consumption is residential space cooling, residential space heating, and residential miscellaneous. The disaggregated residential load for the base year 2022 are presented in Figure 3-2.

Figure 3-2: SC Residential Baseline Load Shares



The non-residential sector end use shares are based on EIA's CBECS data and MECS data, which are representative samples of non-residential end use intensities for the South Atlantic Census Division. The data provide a description of end use intensities and total consumption shares for each non-residential customer segment. As with the residential sector, Resource Innovations combined end use consumption shares with the segmentation analysis to produce an estimate of baseline consumption for all non-residential customers'end uses. Figure 3-3 shows the relative distribution shares of total Santee Cooper commercial load by end use. In the base year 2022, the top load share categories for commercial accounts are miscellaneous, space cooling and refrigeration.

Figure 3-3: SC Commercial Baseline Load Shares

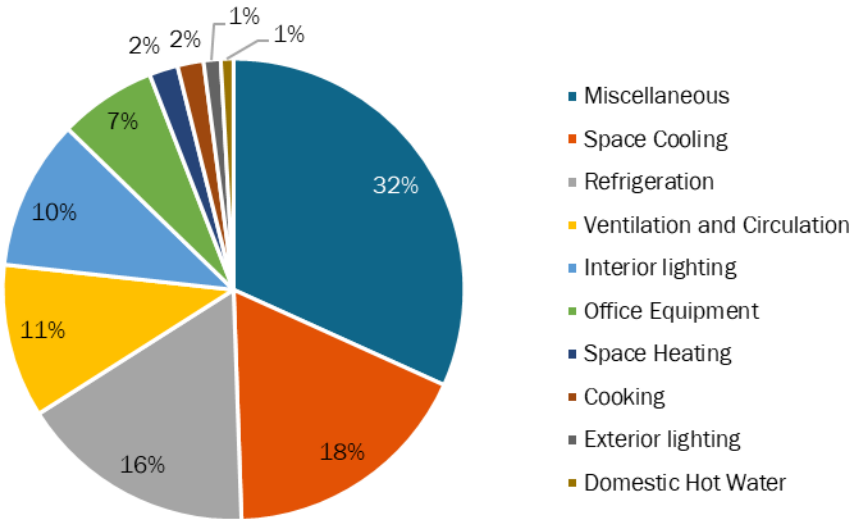
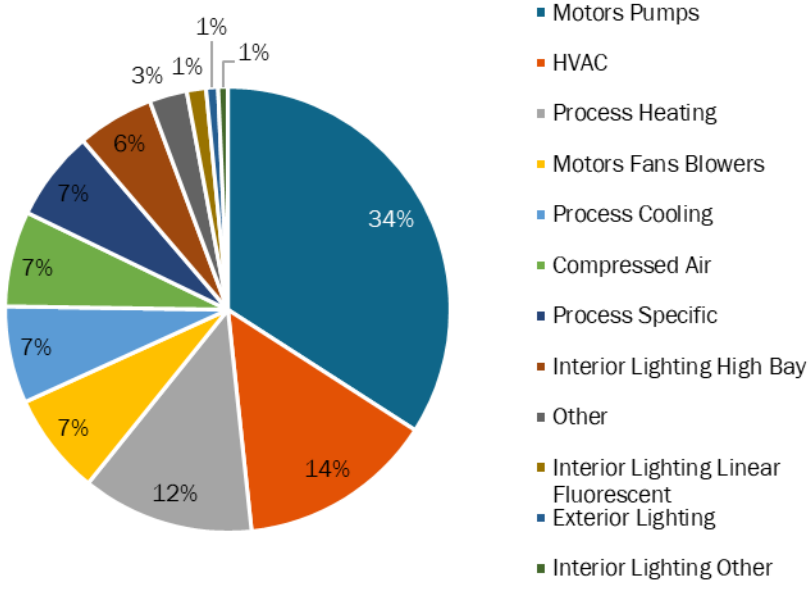


Figure 3-4 shows the relative distribution shares of total Santee Cooper large commercial load by end use. In the base year 2022, the top load share categories for large commercial accounts are motors pumps, HVAC, and process heating.

Figure 3-4: SC Large Commercial Baseline Load Share



4. EE Measure List

Determining the list of EE measures to include in the MPS is fundamental to estimating EE savings potential. This section describes the approach Resource Innovations used to develop the measure list and discusses the energy efficiency services and products.

4.1. Approach

Resource Innovations identified EE measures for consideration in the MPS by reviewing a list of EE measures we developed for previous market potential studies. The measure list was revised to be consistent with measures currently included in Santee Cooper's EE programs as well as additional commercially available and relevant measures for Santee Cooper's residential and non-residential customers. See Appendix A for the final measure list with annual per-unit energy and peak demand savings impacts.

4.2. Energy Efficiency Measures

Resource Innovations' measure list contains EE measures that generally represent savings opportunities for all equipment types and efficiency levels. Our measure list does not provide detailed measure offerings; for example, linear fluorescent lighting is represented generally, but specific details about fixture configuration (e.g., 4 lamp fixtures vs. 2 lamp fixtures) are not necessary to estimate overall EE market opportunities. Data are not available to segment equipment shares to this level of detail, nor is such detail required to estimate EE potential; nevertheless, these distinctions may be important during program delivery when crafting specific EE program offerings.

Resource Innovations uses an online measure database to support this study. The database contains the following information of the measures:

- Classification of measure by type, end use, and subsector
- Measure life
- Description of the base-case scenario, and the primary- and secondary-efficiency cases
- Input values for measure savings algorithms
- Savings algorithms and calculations per subsector, taking weather zones and subsectors into consideration
- Measure cost estimates
- Sources and supporting information
- Output to be used as input in Resource Innovations' TEAPot model

As shown in Table 4-1, the study included 379 unique energy-efficiency measures. Expanding the measures to account for all appropriate combinations of segments, end uses, and construction types results in 10,398 measure permutations. Appendix B includes the final measure list used for the study.

Table 4-1: EE Measure Counts by Sector

Sector	Unique Measures	Permutations
Residential	98	774
Non-Residential (Commercial)	168	6,358
Non-Residential (Large Commercial/Manufacturing)	113	3,318
Total	**379**	**10,450**

5. Achievable Potential

Achievable potential represented the expected energy savings from cost-effective EE measures, inclusive of expected participation rates for existing energy efficiency programs. This section describes our approach to producing these estimates. Resource Innovations analyzed achievable potential according to three scenarios that drive how measures were applied to the Santee Cooper market.

5.1. Achievable Potential Scenarios

Resource Innovations developed three achievable potential scenarios for this study. The cost-effectiveness of each offering was analyzed from the UCT perspective. The first scenario, achievable low (base), is intended to describe the expected market potential from cost-effective measures that could be delivered through the existing Santee Cooper's program portfolio. This scenario is based on current incentives that are offered by programs, which range from 25% to 30% of measure incremental cost and current Santee Cooper program administration and outreach costs. The benefit-cost screening threshold is 1.0 from the UCT perspective for each measure. We refer to the second scenario as the achievable medium scenario, which increased the incentives to 50% of incremental measure costs and reduced the benefit-cost screening threshold to 0.7. The third scenario is achievable high scenario, which increases the incentives to 75% of the measure incremental cost in order to boost participation. The avoided marginal energy costs were increased by 50% for this scenario.

5.2. EE Achievable Potential Methodology

Utility-sponsored DSM programs offer incentives for energy efficiency measures that are designed to lower customers' costs and increase the rate at which the market adopts energy efficiency technologies. To estimate the adoption rate of energy efficiency based on the proposed program offerings described above, Resource Innovations incorporated historic Santee Cooper program performance data as well as secondary data from other utility sponsored DSM initiatives. Table 5-1 presents a summary of historic program achievements by year and sector.

Table 5-1: Summary of Santee Cooper's Distribution Customers'Cumulative EE savings

Year	Commercial kWh	Residential kWh
2009	11,685,912	719,151
2010	13,223,231	2,904,009
2011	8,853,783	8,086,961
2012	11,254,033	1,982,547
2013	20,992,732	2,439,435
2014	17,584,615	5,436,251
2015	21,869,838	4,599,209
2016	25,368,148	3,552,013
2017	29,810,642	4,156,998
2018	15,617,434	3,551,882
2019	13,687,000	3,865,000
2020	11,097,030	3,150,220
2021	6,163,918	3,882,103
Total	**207,208,316**	**48,325,779**

Resource Innovations used historic program participation data and secondary research to estimate the current market penetration for each measure. Resource Innovations developed estimates of future program participation by analyzing historic Santee Cooper program participation trends and by applying standard economic theories on product diffusion. Forecasting future market penetration beyond the current program participation rate provides estimates of the ultimate market penetration for a given program or set of measures, and information on the expected rate of market diffusion or uptake.

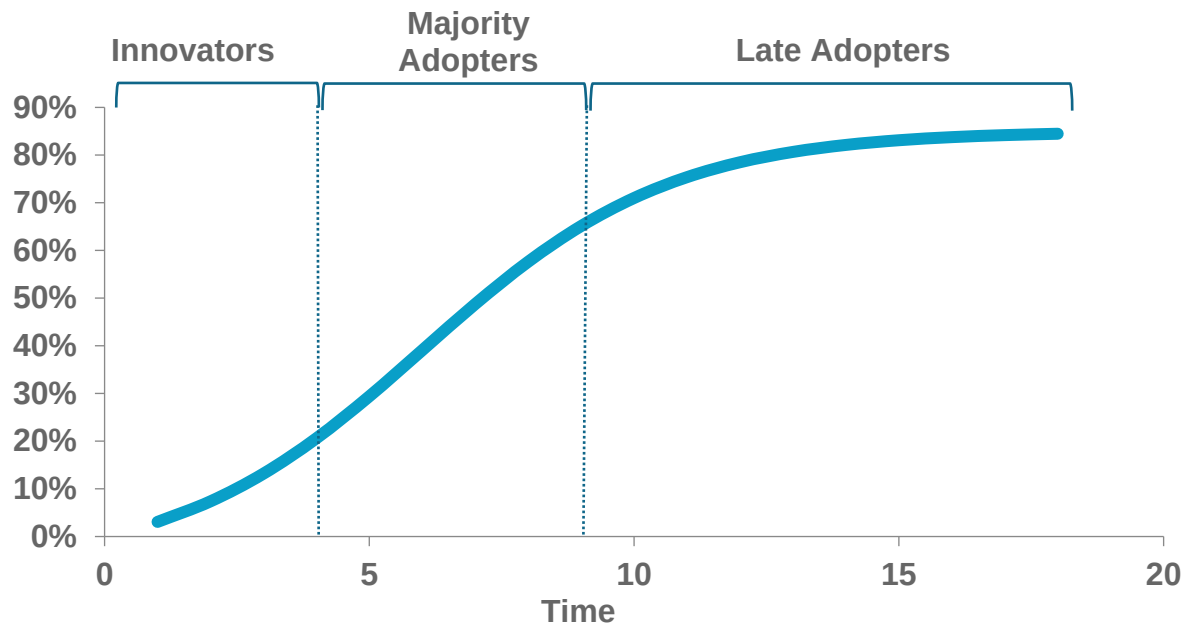
Resource Innovations considered a number of secondary data sources to develop market adoption parameters. These sources include EPA ENERGY STAR data on qualified product shipments, empirically derived market penetration curves from other utility-sponsored programs, and primary research conducted in other markets. The use of secondary data for estimating market penetration is based on aligning energy efficiency measures with program concepts designed to address specific market segments and the varieties of DSM measures widely available in and suitable for the Santee Cooper market.

Technical and economic potential are theoretical constructs that assume 100% adoption of energy efficiency technologies over an extended period of time. In contrast, the achievable potential incorporates Resource Innovations' market penetration estimates, which follow accepted theories of product diffusion. This theoretical model of market adoption, referred to as the Bass diffusion model, is a widely accepted mathematical description of how new products and innovations spread through an economy over time. The Bass diffusion model was originally published in 1969, and in 2004 was voted one of the top 10 most influential papers published in the 50-year history of the peer-reviewed publication *Management Science*[2]. More recent publications by Lawrence Berkeley National Laboratories have illustrated the application of this model to EE programs in the energy industry[3]. Resource Innovations applied the secondary data and research collected to develop and apply Bass model diffusion parameters in the SC retail jurisdiction.

According to product diffusion theory, the rate of market adoption for a product changes over time. When the product is introduced, there is a slow rate of adoption while customers become familiar with the product. When the market accepts a product, the adoption rate accelerates to relative stability in the middle of the product cycle. The end of the product cycle is characterized by a low adoption rate because fewer customers remain that have yet to adopt the product. This concept is illustrated in Figure 5-1.

[2] Bass, F. 2004. Comments on "A New Product Growth for Model Consumer Durables the Bass Model" (sic). *Management Science* 50 (12_supplement): 1833-1840. http://pubsonline.informs.org/doi/abs/10.1287/mnsc.1040.0300. Accessed 01/08/2016.
[3] Buskirk, R. 2014. Estimating Energy Efficiency Technology Adoption Curve Elasticity with Respect to Government and Utility Deployment Program Indicators. LBNL Paper 6542E. Sustainable Energy Systems Group, Environmental Energy Technologies Division. Ernest Orlando Lawrence Berkeley National Laboratory. http://escholarship.org/uc/item/2vp2b7cm#page-1. Accessed 01/14/2016.

Figure 5-1: Bass Model Market Penetration with Respect to Time



The Bass diffusion model is a mathematical description of how the rate of new product diffusion in a market changes over time. Figure 5-1 depicts the cumulative market adoption with respect to time, S(t). The rate of adoption in a discrete time period is determined by external influences on the market, internal market conditions, and the number of previous adopters. The following equation describes this relationship:

$$S(t) = \left(p + \frac{q}{m} * S(t-1)\right) * \left(m - S(t-1)\right)$$

Where:

S(t)= the rate of adoption for any discrete time period, t

p= external influences on market adoption

q= internal influences on market adoption

m= the maximum market share for the product

S(t-1) = the cumulative market share of the product, from product introduction to time period t-1

Marketing is the quintessential external influence. The internal influences are characteristics of the product and market; for example: the underlying market demand for the product, word of mouth, product features, market structure, and other factors that determine the product's market performance. Resource Innovations' approach applied literature reviews and analysis of secondary data sources to estimate the Bass model parameters. We then extrapolated the model to future years; the historic participation and predicted future market evolution serve as the program adoption curve applied to each proposed offering.

5.3. Achievable Potential Estimates

This section provides the results of the energy efficiency achievable potential for the residential and non-residential (commercial & large commercial) sectors. The results represent the expected potential from applying market adoption curves to the set of cost-effective EE measures.

Table 5-2 summarizes the portfolio EE achievable potential for the low, medium, and high scenarios. Impacts are presented as both cumulative impacts and the sum of annual impacts, which represent the total annual incremental savings achieved over the stated time horizon. Cumulative savings are lower than the sum of annual incremental due to some measures reaching the end of their effective useful lives by the end of the study period.

Table 5-2: EE Achievable Potential (2023 – 2042)

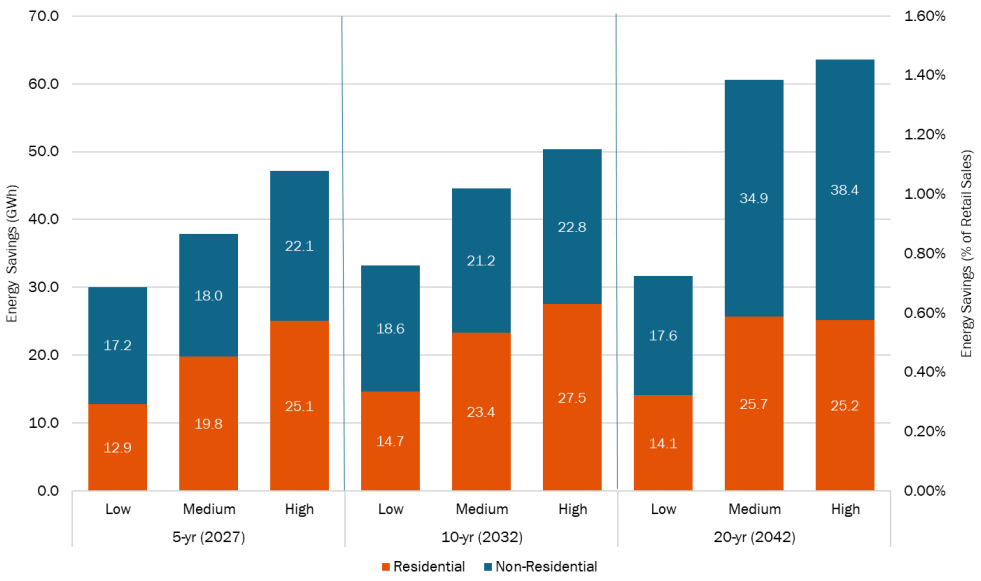
	Low Scenario		Medium Scenario		High Scenario	
	Total Potential	% of Load[4]	Total Potential	% of Load	Total Potential	% of Load
Cumulative MWh	284,490	5.95%	458,202	9.59%	462,977	9.69%
Cumulative MW (Winter)	40.04		64.85		59.93	
Cumulative MW (Summer)	55.77		91.87		105.19	
Sum of Annual MWh	584,897	12.24%	888,005	18.58%	996,188	20.84%
Sum of Annual MW (Winter)	83.69		130.15		139.74	
Sum of Annual MW (Summer)	118.24		181.34		224.67	

[4] Based on baseline sales forecast in 2042 for a 20-year impact.

In the low scenario, the non-residential sector accounts for 67% of the cumulative energy savings potential, 55% of the cumulative winter peak demand savings potential, and 68% of the cumulative summer peak demand savings potential. The residential sector has 33% cumulative energy savings potential, 45% of the cumulative winter peak demand savings potential, and 32% of the cumulative summer peak demand savings potential.

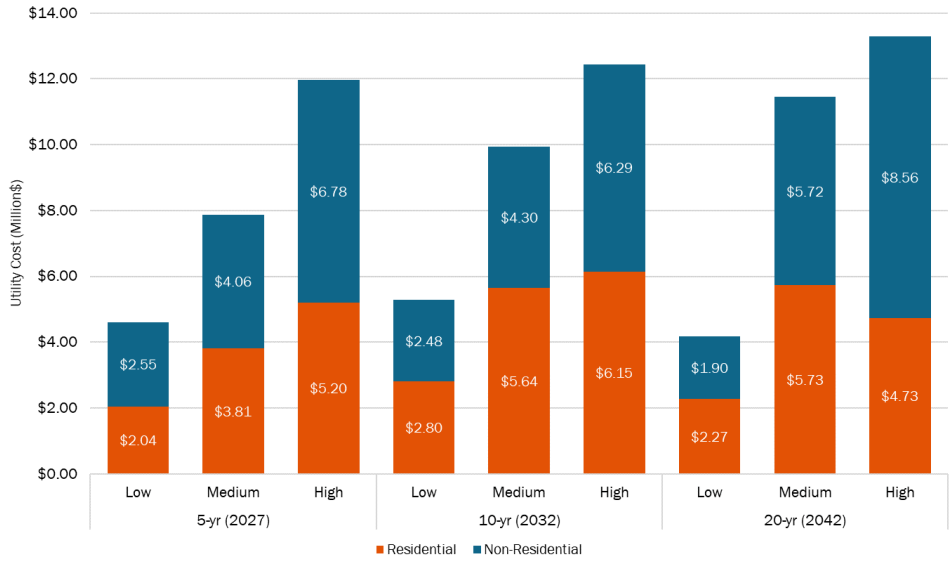
Figure 5-2 summarizes the short term (5-year), medium term (10-year) and long term (20-year) annual incremental EE achievable potential for each scenario. Impacts are presented as both total energy savings and as a percentage of retail energy sales.

Figure 5-2: EE Annual Incremental Energy Savings (5-yr, 10-yr, 20-yr)



Error! Not a valid bookmark self-reference. summarizes the estimated annual utility costs (program incentives, program administration and outreach costs) to achieve the estimated annual incremental savings in each year.

Figure 5-3: EE Annual Incremental Utility Costs[5] (5-yr, 10-yr, 20-yr)



5.3.1. Residential Achievable Potential Details

Table 5-3 summarizes the twenty-year cumulative and sum of annual residential achievable potential for the low, medium, and high scenarios.

Table 5-3: EE Residential Achievable Potential (2023 – 2042)

	Low Scenario		Medium Scenario		High Scenario	
	Total Potential	% of Residential Load[6]	Total Potential	% of Residential Load	Total Potential	% of Residential Load
Cumulative MWh	93,838	3.61%	157,039	6.04%	140,562	5.40%
Cumulative MW (Winter)	18.07		29.49		22.84	
Cumulative MW (Summer)	18.02		33.87		41.58	
Sum of Annual MWh	264,262	10.16%	440,795	16.95%	499,259	19.19%
Sum of Annual MW (Winter)	47.20		77.39		83.03	
Sum of Annual MW (Summer)	54.17		96.14		125.90	

[5] Costs are presented in real dollars.
[6] Based on residential baseline sales forecast in 2042 for a 20-year impact.

Figure 5-4, Figure 5-5, and Figure 5-6 illustrate the relative contributions to the overall residential achievable potential by end use for the low, medium, and high scenarios. The residential domestic hot water category makes up the largest proportion of potential in the medium scenario. This category includes the addition of the following cost-effective residential measures: heat pump water heater 50 gallons, heat pump water heater 80 gallons, 1.60 GPM low-flow showerhead, behavior modification home energy reports, and 1.5 GPM kitchen faucet aerators.

Figure 5-4: Residential Cumulative Potential by End Use – Low Scenario

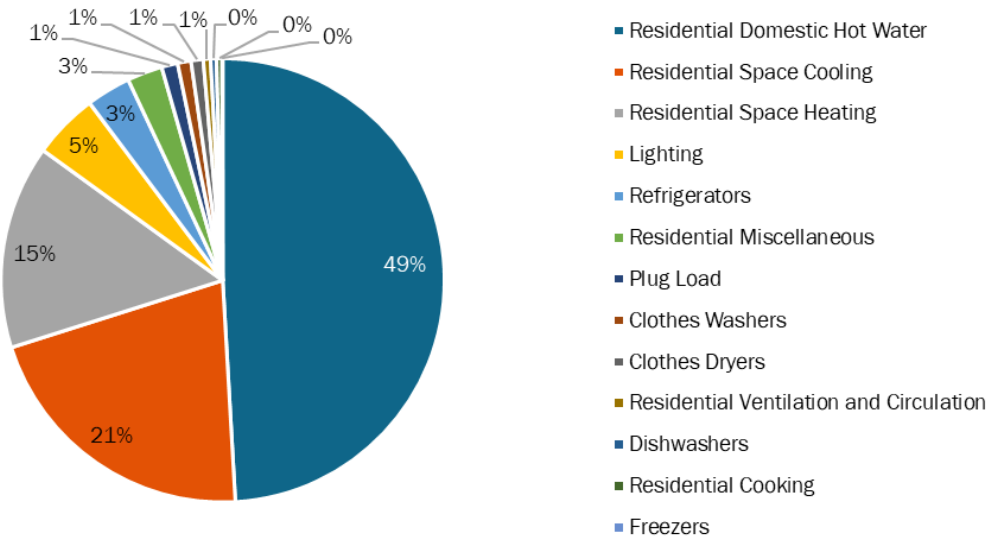


Figure 5-5: Residential Cumulative Potential by End Use – Medium Scenario

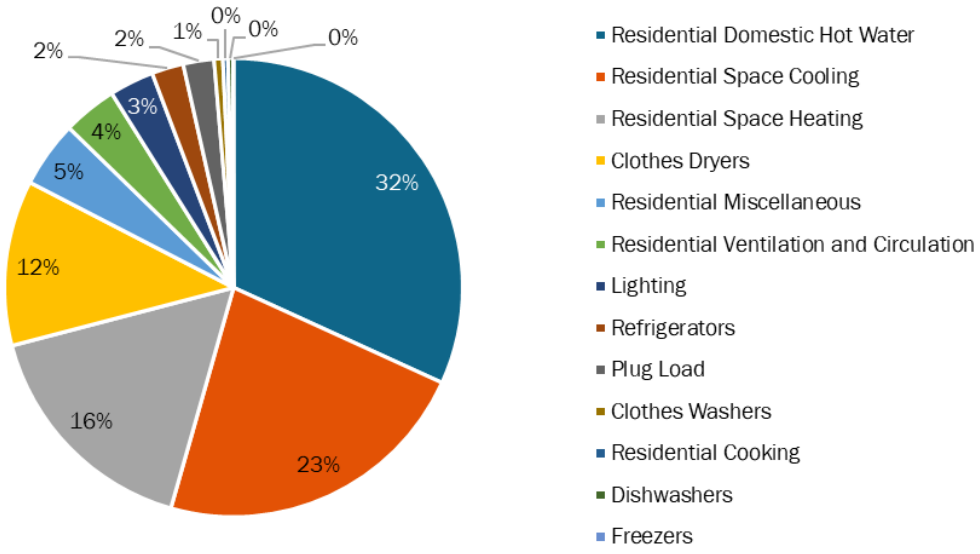
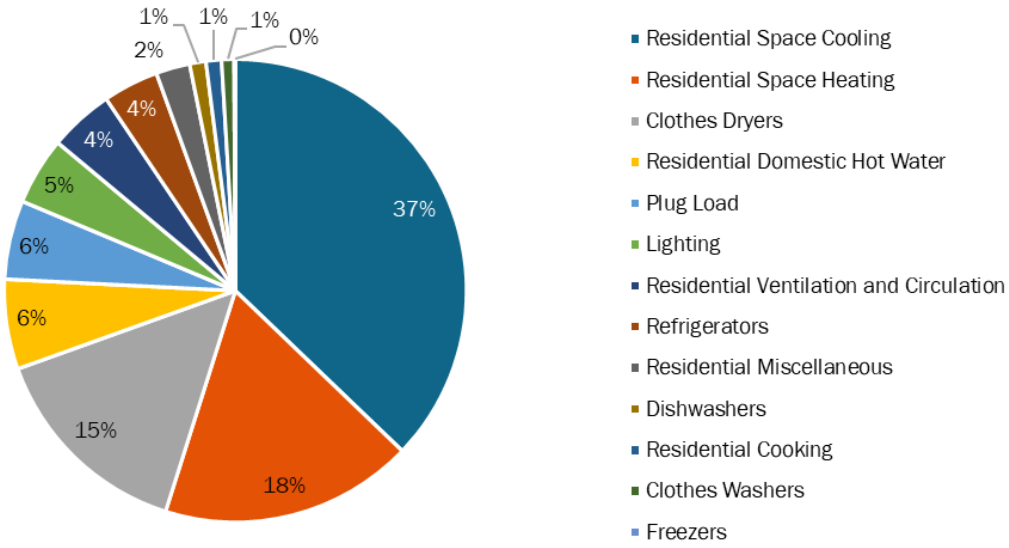


Figure 5-6: Residential Cumulative Potential by End Use - High Scenario



Detailed end use results for the residential achievable potential are provided in Table 5-4.

Table 5-4: EE Res Potential by End Use (cumulative through 2042)

End Use	MWh savings (cumulative)	MW savings (cumulative)_Winter	MW savings (cumulative)_Summer	UCT Net Benefits ($M)	UCT benefit-cost ratio	Levelized Cost ($/kWh)
2042 impacts – Low scenario						
Clothes Dryers	829	0.08	0.12	$0.00	1.00	$0.04
Clothes Washers	921	0.12	0.15	$0.04	1.10	$0.06
Dishwashers	399	0.04	0.04	$0.00	1.01	$0.04
Freezers	30	0.00	0.00	$0.00	1.00	$0.04
Lighting	4,486	0.50	0.45	$0.09	1.11	$0.02
Plug Load	1,103	0.14	0.12	($0.11)	0.74	$0.04
Refrigerators	3,042	0.28	0.40	$0.13	1.11	$0.05
Residential Cooking	393	0.08	0.08	($0.00)	0.99	$0.04
Residential Domestic Hot Water	46,067	8.00	4.09	($0.40)	0.98	$0.05
Residential Miscellaneous	2,409	0.24	0.33	($0.10)	0.89	$0.04
Residential Space Cooling	19,720	0.01	12.03	$2.79	1.33	$0.05
Residential Space Heating	13,947	8.50	0.00	$1.91	1.32	$0.05
Residential Ventilation and Circulation	492	0.08	0.20	($0.02)	0.91	$0.05
2042 impacts – Medium scenario						
Clothes Dryers	18,298	1.69	2.73	($0.95)	0.90	$0.08
Clothes Washers	973	0.12	0.16	($0.07)	0.85	$0.08
Dishwashers	558	0.06	0.06	($0.04)	0.78	$0.04
Freezers	45	0.00	0.01	($0.00)	0.76	$0.04
Lighting	4,927	0.55	0.50	($0.01)	0.99	$0.02
Plug Load	3,411	0.42	0.38	($0.68)	0.56	$0.06
Refrigerators	3,527	0.32	0.47	($0.21)	0.87	$0.06
Residential Cooking	567	0.12	0.12	($0.05)	0.75	$0.04
Residential Domestic Hot Water	49,948	8.67	4.43	($6.49)	0.75	$0.07
Residential Miscellaneous	7,347	0.74	0.99	($2.52)	0.44	$0.07
Residential Space Cooling	35,503	0.03	21.62	$0.25	1.01	$0.07
Residential Space Heating	25,934	15.82	0.00	($0.48)	0.96	$0.07
Residential Ventilation and Circulation	6,001	0.95	2.42	($1.35)	0.73	$0.09
2042 impacts – High scenario						
Clothes Dryers	20,576	1.90	3.07	$1.10	1.08	$0.10
Clothes Washers	1,228	0.15	0.20	$0.14	1.20	$0.09
Dishwashers	1,596	0.16	0.17	$0.23	1.26	$0.07

Table 5-4: EE Res Potential by End Use (cumulative through 2042)

End Use	MWh savings (cumulative)	MW savings (cumulative)_Winter	MW savings (cumulative)_Summer	UCT Net Benefits ($M)	UCT benefit-cost ratio	Levelized Cost ($/kWh)
Freezers	116	0.01	0.02	$0.01	1.21	$0.07
Lighting	6,659	0.75	0.67	$0.42	1.17	$0.04
Plug Load	7,749	0.96	0.86	($2.02)	0.65	$0.09
Refrigerators	5,468	0.50	0.72	$0.76	1.25	$0.07
Residential Cooking	1,526	0.32	0.31	$0.20	1.24	$0.07
Residential Domestic Hot Water	8,825	1.53	0.78	$1.22	1.47	$0.02
Residential Miscellaneous	3,339	0.33	0.46	($0.68)	0.65	$0.07
Residential Space Cooling	52,236	0.04	31.76	$10.29	1.31	$0.08
Residential Space Heating	24,912	15.18	0.00	$8.29	1.62	$0.06
Residential Ventilation and Circulation	6,330	1.00	2.55	($0.37)	0.94	$0.10

5.3.2. Non-Residential Achievable Potential Details

Table 5-5 summarizes cumulative and sum of annual non-residential achievable potential for the low, medium, and high scenarios.

Table 5-5: EE Non-Residential Achievable Potential (2023-2042)

	Low Scenario		Medium Scenario		High Scenario	
	Total Potential	% of Non-Res Load[7]	Total Potential	% of Non-Res Load	Total Potential	% of Non-Res Load
Cumulative MWh	190,653	8.75%	301,163	13.83%	322,415	14.80%
Cumulative MW (Winter)	21.98		35.36		37.09	
Cumulative MW (Summer)	37.75		58.00		63.61	
Sum of Annual MWh	320,635	14.72%	447,210	20.53%	496,929	22.81%
Sum of Annual MW (Winter)	36.49		52.76		56.71	
Sum of Annual MW (Summer)	64.08		85.20		98.76	

[7] Based on non-residential baseline sales forecast in 2042 for 20-year impacts.

Figure 5-7, Figure 5-8, and Figure 5-9 illustrate the relative contributions to the overall non-residential program potential by program for the low, medium, and high scenarios.

Figure 5-7: EE Non-Residential 20-Yr Cumulative Potential by End Use – Low Scenario

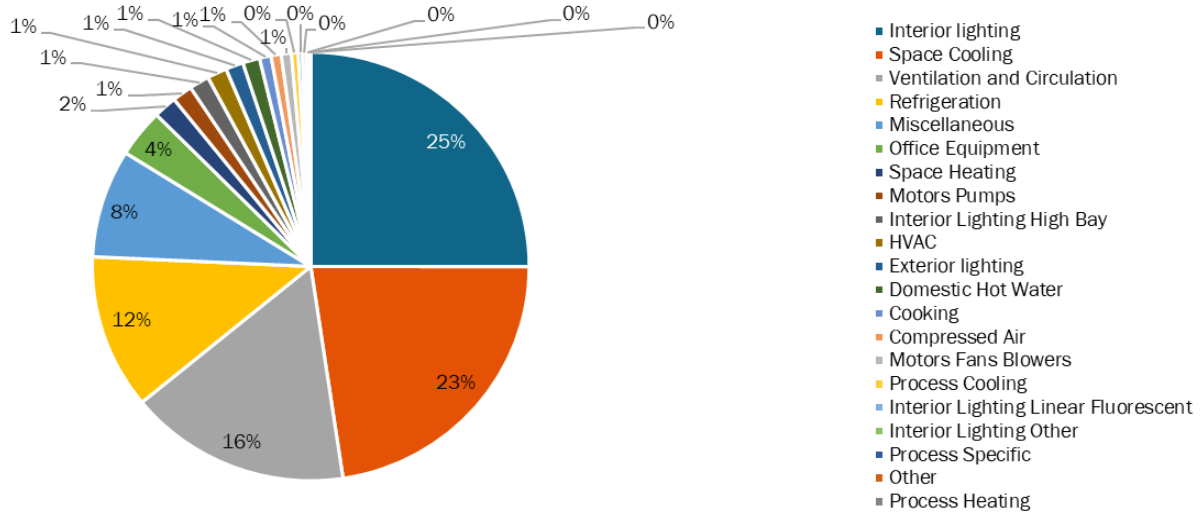


Figure 5-8: EE Non-Residential 20-Yr Cumulative Potential by End Use – Medium Scenario

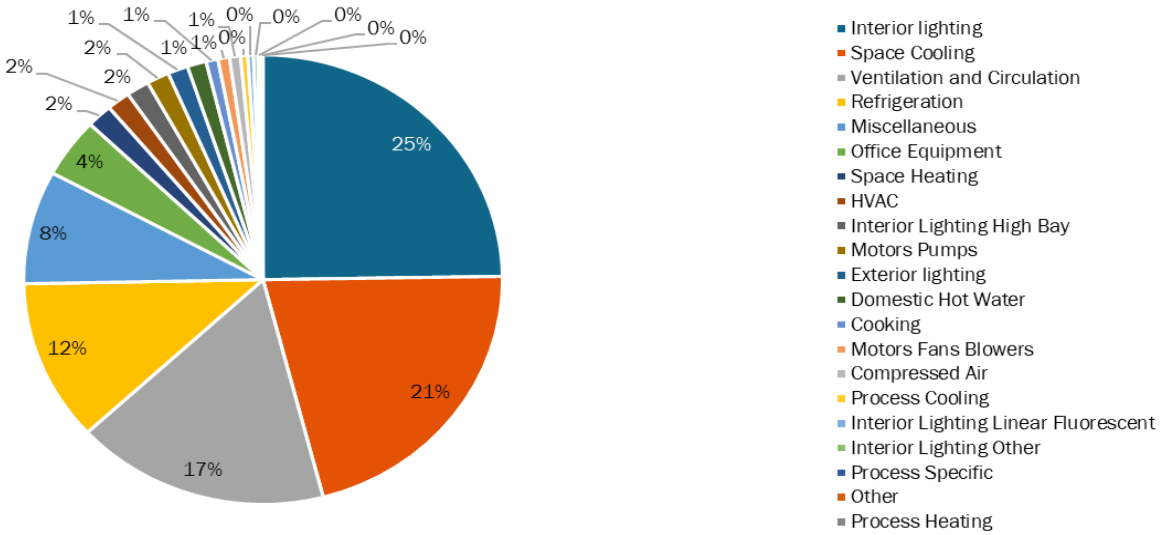
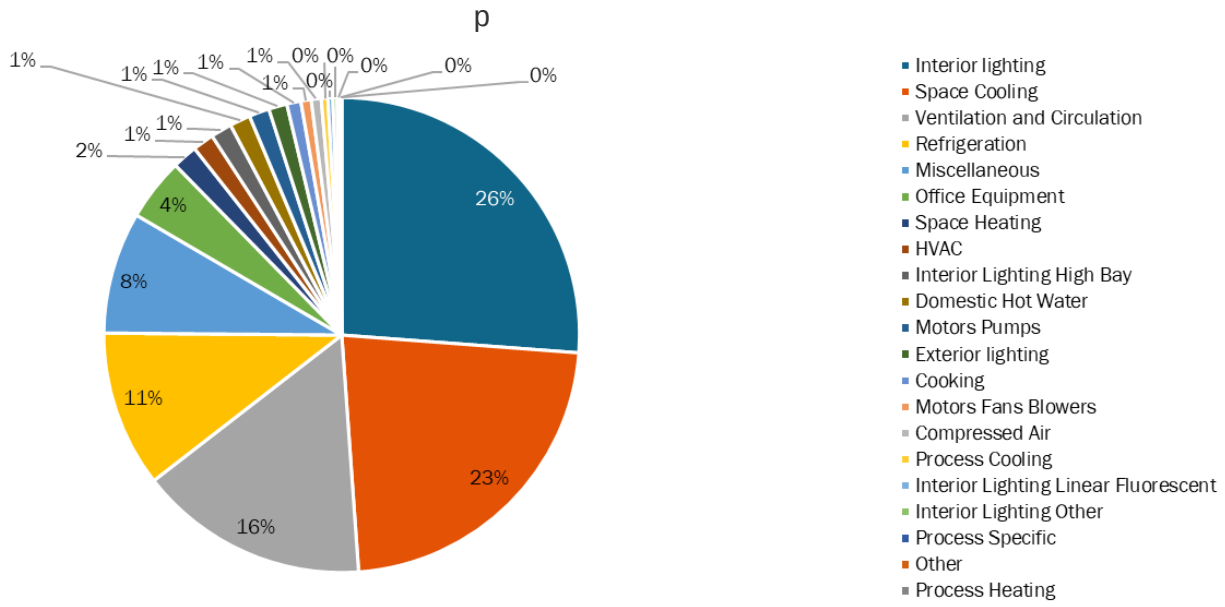


Figure 5-9: EE Non-Residential 20-Yr Cumulative Potential by End Use - High Scenario



Detailed achievable potential results for the non-residential, by end use, are provided in Table 5-6.

Table 5-6: EE Non-Residential Potential by End Use (cumulative through 2042)

End Use	MWh savings (cumulative)	MW savings (cumulative)_Winter	MW savings (cumulative)_Summer	UCT Net Benefits ($M)	UCT benefit-cost ratio	Levelized Cost ($/kWh)
2042 impacts – Low scenario						
Compressed Air	1,434	0.16	0.16	$0.29	2.12	$0.02
Cooking	1,627	0.12	0.20	$0.35	2.54	$0.02
Domestic Hot Water	2,402	0.31	0.28	$0.36	1.79	$0.03
Exterior lighting	2,485	0.28	0.00	$0.47	2.18	$0.02
HVAC	2,790	0.31	0.36	$0.45	1.86	$0.02
Interior lighting	47,700	6.12	5.52	$9.10	2.23	$0.02
Interior Lighting High Bay	2,813	0.59	0.59	$0.69	2.59	$0.02
Interior Lighting Linear Fluorescent	620	0.13	0.13	$0.16	2.83	$0.02
Interior Lighting Other	527	0.11	0.11	$0.09	1.92	$0.02
Miscellaneous	15,577	1.79	1.76	$3.15	2.17	$0.02
Motors Fans Blowers	1,432	0.16	0.16	$0.26	2.14	$0.02
Motors Pumps	2,840	0.32	0.32	$0.53	2.10	$0.02
Office Equipment	6,910	0.82	0.79	($0.62)	0.73	$0.04
Other	232	0.03	0.03	$0.06	2.53	$0.02
Process Cooling	938	0.11	0.11	$0.17	1.99	$0.03
Process Heating	12	0.00	0.00	$0.00	1.46	$0.03
Process Specific	367	0.04	0.04	$0.08	2.29	$0.02
Refrigeration	22,216	2.46	3.42	$3.23	1.78	$0.02
Space Cooling	43,130	0.84	18.76	$5.86	1.69	$0.03
Space Heating	3,276	2.48	0.07	$0.97	2.52	$0.03
Ventilation and Circulation	31,322	4.79	4.93	$5.86	2.09	$0.02

Table 5-6: EE Non-Residential Potential by End Use (cumulative through 2042) Continued

End Use	MWh savings (cumulative)	MW savings (cumulative)_Winter	MW savings (cumulative)_Summer	UCT Net Benefits ($M)	UCT benefit-cost ratio	Levelized Cost ($/kWh)
2042 impacts – Medium scenario						
Compressed Air	2,232	0.25	0.25	$0.12	1.17	$0.05
Cooking	2,438	0.19	0.30	$0.39	1.82	$0.03
Domestic Hot Water	3,860	0.50	0.45	$0.28	1.28	$0.04
Exterior lighting	4,122	0.46	0.00	$0.56	1.63	$0.03
HVAC	4,728	0.52	0.60	$0.24	1.18	$0.04
Interior lighting	74,581	9.58	8.59	$10.68	1.72	$0.03
Interior Lighting High Bay	4,650	0.98	0.98	$1.02	2.26	$0.03
Interior Lighting Linear Fluorescent	1,136	0.24	0.24	$0.30	2.89	$0.02
Interior Lighting Other	917	0.19	0.19	$0.15	1.84	$0.03
Miscellaneous	24,588	2.83	2.76	$2.72	1.43	$0.04
Motors Fans Blowers	2,341	0.27	0.27	$0.15	1.23	$0.04
Motors Pumps	4,577	0.52	0.52	$0.21	1.15	$0.05
Office Equipment	12,896	1.53	1.47	($1.76)	0.63	$0.06
Other	405	0.05	0.05	$0.04	1.26	$0.04
Process Cooling	1,473	0.17	0.17	$0.04	1.08	$0.05
Process Heating	16	0.00	0.00	$0.00	1.16	$0.05
Process Specific	572	0.07	0.07	$0.03	1.17	$0.05
Refrigeration	34,931	3.87	5.38	$4.29	1.57	$0.03
Space Cooling	63,813	1.30	27.44	$5.07	1.31	$0.04
Space Heating	5,204	3.93	0.11	$0.85	1.51	$0.05
Ventilation and Circulation	51,681	7.91	8.14	$4.87	1.37	$0.04

Table 5-6: EE Non-Residential Potential by End Use (cumulative through 2042) Continued

End Use	MWh savings (cumulative)	MW savings (cumulative)_Winter	MW savings (cumulative)_Summer	UCT Net Benefits ($M)	UCT benefit-cost ratio	Levelized Cost ($/kWh)
2042 impacts – High scenario						
Compressed Air	2,173	0.25	0.25	$0.21	1.20	$0.07
Cooking	3,080	0.24	0.38	$0.86	2.10	$0.04
Domestic Hot Water	4,530	0.59	0.53	$0.89	1.61	$0.05
Exterior lighting	4,021	0.45	0.00	$0.95	1.82	$0.04
HVAC	4,656	0.51	0.59	$0.48	1.26	$0.06
Interior lighting	84,449	10.83	9.74	$21.57	1.99	$0.04
Interior Lighting High Bay	4,631	0.98	0.98	$1.64	2.49	$0.03
Interior Lighting Linear Fluorescent	1,103	0.23	0.23	$0.46	3.21	$0.03
Interior Lighting Other	906	0.19	0.19	$0.24	2.02	$0.04
Miscellaneous	26,733	3.07	3.00	$4.64	1.47	$0.05
Motors Fans Blowers	2,272	0.26	0.26	$0.26	1.28	$0.06
Motors Pumps	4,439	0.51	0.51	$0.37	1.19	$0.06
Office Equipment	13,717	1.63	1.56	($1.82)	0.72	$0.07
Other	416	0.05	0.05	$0.06	1.28	$0.06
Process Cooling	1,433	0.16	0.16	$0.08	1.11	$0.07
Process Heating	16	0.00	0.00	$0.00	1.22	$0.07
Process Specific	557	0.06	0.06	$0.05	1.20	$0.07
Refrigeration	34,282	3.80	5.28	$7.26	1.71	$0.04
Space Cooling	73,105	1.42	31.78	$6.57	1.22	$0.06
Space Heating	5,491	4.14	0.12	$1.43	1.57	$0.07
Ventilation and Circulation	50,406	7.72	7.94	$8.13	1.44	$0.05

Appendix A MPS Energy Efficiency Measures

For information on how Resource Innovations developed this list, please see Section 4

A.1 Residential Measures

Residential Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
1.5 GPM Bathroom Faucet Aerators	Per End Use Consumption	112.14	0.0195	0.0100
1.5 GPM Kitchen Faucet Aerators	Per End Use Consumption	112.14	0.0195	0.0100
1.60 GPM Low-Flow Showerhead	Per End Use Consumption	399.84	0.0694	0.0355
2x4 Residential LED Common Areas	Per Fixture	309.40	0.0351	0.0307
Air Sealing	Per End Use Consumption	361.59	0.0924	0.1292
Air Source Heat Pump Maintenance	Per End Use Consumption	382.79	0.0129	0.2229
Air-to-Water Heat Pump	Per System	1,725.08	0.6227	0.4322
ASHP 16 SEER from Electric Resistance	Per Unit	4,686.00	2.7831	0.0678
ASHP 23.5 SEER from Electric Resistance	Per Unit	5,539.95	2.9837	0.3909
ASHP, 18 SEER, 9.5 HSPF	Per Unit	603.59	0.1894	0.1801
Basement or Crawlspace Wall Insulation R-15	Per Home	172.83	0.0671	0.0385
Behavior Modification Home Energy Reports	Per Home	122.40	0.0197	0.0236
Behavior Modification Home Energy Reports - Active Engagement	Per Home	229.39	0.0369	0.0442
Behavior Modification Pre-pay plan	Per Home	1,437.49	0.2311	0.2770
CEE Advanced Tier Clothes Washer	Per Appliance	389.49	0.0490	0.0630
CEE Tier 2 Clothes Washer	Per Appliance	364.85	0.0459	0.0590
CEE Tier 2 Refrigerator	Per Appliance	269.13	0.0246	0.0355
Ceiling Insulation R-49	Per End Use Consumption	699.51	0.2222	0.2059
Central AC Maintenance	Per End Use Consumption	131.13	0.0001	0.0808
Dehumidifier Recycling	Per Appliance	628.28	0.0780	0.0699
Drain Water Heat Recovery	Per End Use Consumption	590.55	0.1025	0.0524
Dual Speed Pool Pump Motors	Per Pool	1,809.53	0.1818	0.2393
Duct Insulation	Per End Use Consumption	90.39	0.0231	0.0323
Duct Sealing	Per End Use Consumption	542.37	0.1386	0.1938

Residential Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Ductless Mini-Split HP, 17 SEER, 9.5 HSPF	Per Unit	517.59	0.1894	0.1271
ECM Circulator Pump	Per pump	22.00	0.0035	0.0089
ECM Motor	Per End Use Consumption	666.00	0.1069	0.2705
Electric Vehicle Supply Equipment (EVSE)	Per charging system	188.37	0.0189	0.0249
Energy Star Air Purifier	Per Air Cleaner	624.20	0.0775	0.0695
Energy Star ASHP, 16 SEER, 9.0 HSPF	Per System	273.89	0.0999	0.0675
Energy Star ASHP, 18.5 SEER, 10.2 HSPF	Per System	824.62	0.2998	0.2044
Energy Star ASHP, 20 SEER, 10.2 HSPF	Per System	931.31	0.2999	0.2701
Energy Star ASHP, 23.5 SEER, 10.2 HSPF	Per System	1,127.28	0.3000	0.3908
Energy Star Ceiling Fan	Per Fan	21.48	0.0022	0.0028
Energy Star Central AC - 16 SEER	Per System	109.65	0.0001	0.0675
Energy Star Central AC - 18 SEER	Per System	292.40	0.0001	0.1801
Energy Star Central AC - 20 SEER	Per System	438.60	0.0002	0.2701
Energy Star Central AC - 24 SEER	Per System	657.90	0.0003	0.4051
Energy Star Clothes Dryer	Per Appliance	152.42	0.0141	0.0227
Energy Star Clothes Washer	Per Appliance	340.26	0.0428	0.0550
Energy Star Dehumidifier	Per Appliance	95.19	0.0118	0.0106
Energy Star Desktop Computer	Per Appliance	118.19	0.0147	0.0132
Energy Star Dishwasher (Electric Water Heating)	Per Appliance	37.00	0.0037	0.0039
Energy Star Dishwasher (Gas Water Heating)	Per Appliance	16.00	0.0016	0.0017
Energy Star Doors	Per 100 S.F.	276.04	0.0909	0.0780
Energy Star DVD Blu-Ray Player	Per Device	80.30	0.0100	0.0089
Energy Star GSHP, 17.1 SEER, 12 HSPF	Per Unit	1,077.69	0.5245	0.1327
Energy Star LED Directional Lamp	Per lamp	31.83	0.0036	0.0032
ENERGY STAR LED, 19W (Exterior)_CFL Baseline	Per Lamp	38.39	0.0043	0.0039
Energy Star LED, 19W (Exterior)_Halogen Incandescent Baseline	Per Lamp	218.64	0.0245	0.0220
Energy Star Monitor	Per Unit	7.51	0.0009	0.0008
Energy Star Qualified Airtight Can Lights	Per Fixture	44.61	0.0050	0.0045
Energy Star Qualified LED, Recessed Lighting	Per Fixture	52.74	0.0059	0.0053
Energy Star Refrigerator	Per Appliance	133.50	0.0122	0.0176
Energy Star Room AC - 12 SEER	Per Unit	73.77	0.0000	0.0454
Energy Star Television	Per Appliance	50.00	0.0062	0.0056
Energy Star Windows	Per 100 S.F.	128.36	0.0423	0.0363

Residential Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Exterior Wall Insulation on Wall Above Grade R-13	Per Home	50.30	0.0178	0.0130
Filter Whistle	Per Valve	26.31	0.0042	0.0107
Floor Insulation R-30	Per Pool	79.78	0.0310	0.0178
Freezer Recycling	Per Unit	1,084.09	0.0993	0.1430
Green Roof	Per End Use Consumption	662.15	0.1692	0.2366
Heat Pump Clothes Dryer	Per End Use Consumption	512.04	0.0472	0.0762
Heat Pump Pool Heater	Per End Use Consumption	2,823.53	0.2836	0.3734
Heat Pump Water Heater 50Gallons	Per End Use Consumption	2,259.55	0.3921	0.2006
Heat Pump Water Heater 80 Gallons	Per Fixture	675.38	0.1172	0.0600
High Efficiency Bathroom Exhaust Fan	Per End Use Consumption	10.11	0.0016	0.0041
Holiday Lights	Per End Use Consumption	6.00	0.0007	0.0006
Home Energy Management System	Per System	1,070.48	0.1721	0.2063
Hot Water Pipe Insulation	Per Unit	70.87	0.0123	0.0063
Indoor Daylight Sensor	Per Unit	131.85	0.0148	0.0133
Insulating Tank Wrap on Water Heater	Per Unit	186.81	0.0324	0.0166
LED Nightlight	Per Home	28.03	0.0031	0.0028
Occupancy Sensors Switch Mounted	Per Home	113.01	0.0127	0.0114
Outdoor Lighting Timer	Per Home	47.81	0.0054	0.0048
Outdoor Motion Sensor	Per Home	51.23	0.0057	0.0052
Ozone Laundry	Per Appliance	226.94	0.0286	0.0367
Programmable Thermostat	Per Appliance	162.71	0.0416	0.0581
Properly Sized CAC	Per Appliance	305.78	0.0002	0.1883
RealTime Information Monitoring	Per End Use Consumption	871.67	0.1402	0.1680
Refrigerator Recycling	Per End Use Consumption	1,052.30	0.0963	0.1388
Residential New Construction Tier 1 (10% more efficient)	Per Appliance	1,529.25	0.2459	0.2947
Residential New Construction Tier 2 (20% more efficient)	Per End Use Consumption	3,058.50	0.4918	0.5894
Residential New Construction Tier 3 (30% more efficient)	Per Pool	4,587.75	0.7376	0.8841
Residential Whole House Fan	Per End Use Consumption	199.97	0.0001	0.1231

Residential Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Room AC Recycling	Per End Use Consumption	804.77	0.0004	0.4956
Smart Electric Panel	Per Unit	1,070.48	0.1721	0.2063
Smart Meter Usage App	Per pump	305.85	0.0492	0.0589
Smart Strip Entertainment	Per End Use Consumption	65.70	0.0082	0.0073
Smart Strip Home Office	Per charging system	36.50	0.0045	0.0041
Smart Thermostat	Per Air Cleaner	628.25	0.1606	0.2245
Solar Attic Fan	Per System	157.36	0.0001	0.0969
Solar Thermal Water Heating System	Per System	1,925.89	0.3342	0.1710
Specialty Behavior Modification Home Energy Reports	Per System	157.51	0.0253	0.0304
Thermostatic Shower Restriction Valve	Per System	124.28	0.0216	0.0110
Variable Speed Pool Pump Motors	Per Fan	1,885.05	0.1894	0.2493
Water Heater Thermostat Setback	Per System	54.56	0.0095	0.0048
Window Shade Film	Per System	87.72	0.0000	0.0540

A.2 Commercial Measures

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
1.5 GPM Faucet Aerators	Per Unit	154.02	0.0177	0.0251
1.5HP Open Drip-Proof(ODP) Motor	Per Unit	15.13	0.0020	0.0026
1.75 GPM Low-Flow Showerhead	Per Unit	43.77	0.0050	0.0071
10HP Open Drip-Proof (ODP) Motor	Per Unit	155.72	0.0203	0.0272
20HP Open Drip-Proof (ODP) Motor	Per Unit	174.74	0.0228	0.0305
2x4 LED Troffer	Per Fixture	143.98	0.0128	0.0241
4'4-Lamp High Bay T5 Fixture (28W)	Per Fixture	257.86	0.0230	0.0431
Advanced Rooftop Controller	Per End Use Consumption	16,523.77	2.1549	2.8875
Air Compressor Optimization	Per End Use Consumption	5,472.66	0.4110	0.8479
Anti-Sweat Heater Controls (Cooler)	Per Refrigerated Case	276.38	0.0310	0.0436
Auto Closer on Refrigerator Door	Per Refrigerated Case	39.03	0.0044	0.0062
Auto Off Time Switch	Per 500W Controlled	440.16	0.0392	0.0736
Beverage Vending Machine Controls	Per Unit	525.74	0.0590	0.0829
Bi-Level Lighting Control	Per 500W Controlled	568.54	0.0506	0.0951
Business Energy Report	Per End Use Consumption	1,794.73	0.1636	0.4227
Business Energy Report - Active Engagement	Per End Use Consumption	2,692.09	0.2454	0.6341
Ceiling Insulation R49	Per End Use Consumption	1,546.55	0.5208	0.5714
Chilled Water Reset	Per End Use Consumption	3,571.60	0.0029	2.1956
CO Sensors for Parking Garage Exhaust	Per HP	1,658.87	0.1246	0.2570
Commercial Duct Sealing	Per End Use	8,250.40	0.5033	4.7093
Commercial Strategic Energy Management	per facility	5,743.13	0.5236	1.3528
Data Center Hot Cold Aisle	per server room	90.00	0.0107	0.0100
Data Center Server Consolidation	Per Server Removed	89,921.40	6.7538	13.9316
Dedicated Outside Air System (DOAS)	Per Unit	20,625.99	1.2584	11.7732
Demand Controlled Circulating Systems	Per Hot Water Circulation Pump	1,071.48	0.1228	0.1748
Demand Controlled Ventilation	Per End Use Consumption	8,055.07	1.0505	1.4076

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Demand Defrost	Per End Use Consumption	57,127.54	6.4160	9.0129
Door Gasket (Cooler)	Per Door	156.11	0.0175	0.0246
Door Gasket (Freezer)	Per Door	156.11	0.0175	0.0246
Drain water heat recovery	Per End Use Consumption	1,664.84	0.1908	0.2716
Dual Enthalpy Economizer	Per End Use Consumption	184.35	0.0240	0.0322
Dual Speed Pool Pump Motors	Per Pool	1,809.53	0.1359	0.2804
Ductless Mini-Split AC, 4 Ton, 16 SEER	Per Unit	478.29	0.0004	0.2940
Ductless Mini-Split HP, 4 Ton, 16 SEER, 9 HSPF	Per Unit	780.60	0.2509	0.2972
DX Coil Cleaning	Per Unit	92.15	0.0001	0.0566
Efficient New Construction Lighting	Per Premise	20,830.00	1.8543	3.4835
Electric Resistance Water Heater	Per Unit	101.93	0.0117	0.0166
Energy Recovery Ventilation System	Per End Use Consumption	4,662.00	0.6080	0.8147
Energy Star Combination Oven	Per Unit	6,368.00	0.2475	0.8556
Energy Star Commercial Clothes Washer	Per Appliance	1,060.16	0.0796	0.1643
Energy Star convection oven	Per Unit	1,937.00	0.0753	0.2603
Energy Star Copiers	Per Unit	167.76	0.0126	0.0260
Energy Star dishwasher	Per Appliance	23,709.94	2.7172	3.8678
Energy Star Fax	Per Unit	26.05	0.0020	0.0040
Energy Star Fryer	Per Unit	951.00	0.0370	0.1278
Energy Star Glass-Door Freezer	Per Unit	4,708.50	0.5288	0.7429
Energy Star Glass-Door Refrigerator	Per Unit	876.00	0.0984	0.1382
Energy Star Griddle	Per Unit	1,910.00	0.0742	0.2566
Energy Star Hot Food Holding Cabinet	Per Unit	1,730.10	0.0672	0.2325
Energy Star Ice Machines (Self Contained Units)	Per Unit	108.00	0.0121	0.0170
Energy Star LED Directional Lamp	Per Lamp	123.98	0.0110	0.0207
Energy Star LED Lamp, 13W_CFL Baseline	Per Lamp	319.12	0.0284	0.0534
Energy Star LED Lamp, 13W_Halogen Baseline	Per Lamp	216.42	0.0193	0.0362
Energy Star LED, 13W_Incandescent Baseline	Per Lamp	319.12	0.0284	0.0534
Energy Star LED, 9W_CFL Baseline	Per Lamp	18.34	0.0016	0.0031
Energy Star LED, 9W_Halogen Baseline	Per Lamp	124.71	0.0111	0.0209
Energy Star LED, 9W_Incandescent Baseline	Per Lamp	187.07	0.0167	0.0313
Energy Star Monitors	Per Unit	8.00	0.0006	0.0012
Energy Star PCs-Desktop	Per Unit	123.52	0.0093	0.0191

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Energy Star Printers	Per Unit	46.89	0.0035	0.0073
Energy Star Qualified LED Shelf-Mounted Task Lighting	Per Fixture	304.45	0.0271	0.0509
Energy Star Qualified LED, recessed lighting	Per Fixture	205.41	0.0183	0.0344
Energy Star room ac - 12 SEER	Per Unit	112.62	0.0001	0.0692
Energy Star Scanners	Per Unit	2.62	0.0002	0.0004
Energy Star Servers	Per Unit	1,140.78	0.0857	0.1767
Energy Star Solid-Door Freezer	Per Unit	2,117.00	0.2378	0.3340
Energy Star Solid-Door Refrigerator	Per Unit	803.00	0.0902	0.1267
Energy Star Steamer	Per Unit	12,160.50	0.4727	1.6339
Energy Star Uninterruptable Power Supply	Per Unit	5.70	0.0004	0.0009
Energy Star Vending Machine	Per Unit	525.74	0.0590	0.0829
Energy Star Water Coolers	Per Appliance	547.50	0.0411	0.0848
Energy Star windows	Per 100 S.F.	473.66	0.0795	0.2334
Escalator Motor Efficiency Controller	Per Unit	11,250.00	0.8450	1.7430
Evaporator Fan Motor Control	Per End Use Consumption	57,127.54	6.4160	9.0129
Exterior Bi-Level Lighting Control	Per 500W Controlled	558.62	0.0522	0.0000
Facility Commissioning_SC	Per End Use Consumption	10,200.49	0.0083	6.2707
Facility Commissioning_SH	Per End Use Consumption	800.04	0.6628	0.0084
Facility Commissioning_VT	Per End Use Consumption	8,600.41	1.1216	1.5029
Facility Energy Management System_SC	Per End Use	9,562.96	0.0078	5.8788
Facility Energy Management System_SH	Per End Use	750.04	0.6214	0.0078
Facility Energy Management System_VT	Per End Use	8,062.89	1.0515	1.4090
Fan Thermostat Controller	Per End Use Consumption	6,875.33	0.4194	3.9244
Floating Head Pressure Controller	Per End Use Consumption	2,820.00	0.3167	0.4449
Green roof	Per Building	10,072.36	0.6145	5.7492
HE Air Cooled Chiller - All Compressor Types - 100 Tons	Per Unit	9,384.18	0.0076	5.7689
HE DX 11.25-20.0 Tons Elec Heat	Per Unit	1,084.25	0.2411	0.4911
HE DX 11.25-20.0 Tons Other Heat	Per Unit	793.99	0.0006	0.4881
HE DX 5.4-11.25 Tons Elect Heat	Per Unit	734.45	0.1137	0.3690
HE DX 5.4-11.25 Tons Other Heat	Per Unit	597.86	0.0005	0.3675

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
HE DX Less than 5.4 Tons Elect Heat	Per Unit	958.93	0.3534	0.3320
HE DX Less than 5.4 Tons Other Heat	Per Unit	532.84	0.0004	0.3276
HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons	Per Unit	20,534.40	0.0167	12.6234
HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons	Per Unit	44,640.00	0.0363	27.4421
HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons	Per Unit	15,624.00	0.0127	9.6047
HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons	Per Unit	3,348.00	0.0027	2.0582
Heat Pump Pool Heater	Per Unit	2,823.53	0.2121	0.4375
Heat pump water heater 50gallon	Per Water Heater	13,304.05	1.5246	2.1703
High Efficiency Air Compressor	Per Unit	12,904.52	0.9692	1.9993
High Efficiency CRAC Unit	Per End Use Consumption	13,494.00	0.0110	8.2953
High Efficiency Refrigeration Compressor - Discus	Per Unit	135.50	0.0152	0.0214
High Efficiency Refrigeration Compressor - Scroll	Per Unit	135.70	0.0152	0.0214
High Performance Medium Bay T8 Fixture	Per Fixture	56.03	0.0050	0.0094
High Speed Fans	Per Unit	508.56	0.0663	0.0889
Hot water pipe insulation	Per End Use Consumption	133.94	0.0153	0.0218
Hotel Key Card Room Energy Control System	Per End Use Consumption	1,007.29	0.1342	0.5218
Indoor daylight sensor	Per 500W Controlled	513.52	0.0457	0.0859
Induction High Bay Lighting	Per Fixture	41.82	0.0037	0.0070
Insulating tank wrap on water heater	Per End Use Consumption	219.28	0.0251	0.0358
LED Canopy Lighting (Exterior)	Per Fixture	474.65	0.0443	0.0000
LED Display Lighting	Per Fixture	3,447.92	0.3069	0.5766
LED Exit Sign	Per Exit Sign	35.04	0.0031	0.0059
LED Exterior Wall Packs	Per Fixture	504.56	0.0471	0.0000
LED High Bay_HID Baseline	Per Fixture	946.34	0.0842	0.1583
LED High Bay_LF Baseline	Per Fixture	564.87	0.0503	0.0945
LED Linear - Lamp Replacement	Per Fixture	45.34	0.0040	0.0076
LEED New Construction Whole Building	Per End Use Consumption	125,631.03	11.4541	29.5915
Light Tube	Per Lamp	358.80	0.0319	0.0600
Low-Flow Pre-Rinse Sprayers	Per End Use Consumption	198.07	0.0227	0.0323

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Network PC Power Management	Per Computer Connected	161.00	0.0121	0.0249
Networked Lighting Controls	Per 500W Controlled	917.00	0.0816	0.1534
Occupancy Sensors, Ceiling Mounted	Per 500W Controlled	440.16	0.0392	0.0736
Occupancy Sensors, Switch Mounted	Per 500W Controlled	440.16	0.0392	0.0736
Outdoor motion sensor	Per 500W Controlled	432.48	0.0404	0.0000
Ozone Laundry	Per Ozone Laundry System	746.00	0.0560	0.1156
Packaged Terminal AC	Per Unit	408.08	0.0003	0.2509
Packaged Terminal HP	Per Unit	763.23	0.2805	0.2649
Photocell Dimming Control (Exterior)	Per 500W Controlled	472.61	0.0441	0.0000
Photocell Dimming Control (Interior)	Per 500W Controlled	513.52	0.0457	0.0859
Programmable thermostat	Per End Use Consumption	1,455.07	0.1502	0.7857
PSC to ECM Evaporator Fan Motor (Reach-In)	Per Unit	559.92	0.0629	0.0883
PSC to ECM Evaporator Fan Motor (Walk-In, Refrigerator)	Per Unit	346.30	0.0389	0.0546
Q-Sync Evaporator Fan Motor	Per Unit	211.12	0.0237	0.0333
RealTime information monitoring	Per End Use Consumption	20,459.91	0.0166	12.5776
Reduced Wattage (25W) T8 Fixture	Per Fixture	64.40	0.0057	0.0108
Reduced Wattage (28W) T8 Fixture	Per Fixture	36.80	0.0033	0.0062
Reduced Wattage (28W) T8 Relamping	Per Fixture	36.80	0.0033	0.0062
Reflective Roof Treatment	Per End Use Consumption	36,645.65	0.0298	22.5276
Refrigerated Display Case LED Lighting	Per Unit	151.66	0.0170	0.0239
Refrigerated Display Case Lighting Controls	Per End Use Consumption	57.87	0.0065	0.0091
Refrigeration Commissioning	Per End Use Consumption	23,041.44	2.5878	3.6352
Refrigeration Economizer	Per Ton	2,152.00	0.2417	0.3395
Retro-Commissioning (Existing Construction)_SC	Per End Use Consumption	10,200.49	0.0083	6.2707
Retro-Commissioning (Existing Construction)_SH	Per End Use Consumption	800.04	0.6628	0.0084
Retro-Commissioning (Existing Construction)_VT	Per End Use Consumption	8,600.41	1.1216	1.5029

Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Small Buildings Retro-Commissioning_SC	Per End Use Consumption	10,200.49	0.0083	6.2707
Small Buildings Retro-Commissioning_SH	Per End Use Consumption	800.04	0.6628	0.0084
Small Buildings Retro-Commissioning_VT	Per End Use Consumption	8,600.41	1.1216	1.5029
Smart Strip Plug Outlet	Per End Use Consumption	129.30	0.0097	0.0200
Smart thermostat	Per End Use Consumption	6,875.33	0.4194	3.9244
Solar Thermal Water Heating System	Per Unit	2,122.35	0.2432	0.3462
Solid State Cooking Hood Controls	Per Unit	4,486.00	0.1744	0.6028
SP to ECM Evaporator Fan Motor (Walk-In, Refrigerator)	Per Unit	1,090.85	0.1225	0.1721
Strip Curtains - Freezers	Per End Use Consumption	567.00	0.0637	0.0895
Strip Curtains - Refrigerators	Per End Use Consumption	420.00	0.0472	0.0663
Suction Pipe Insulation - Freezers	Per End Use Consumption	1,914.57	0.2150	0.3021
Suction Pipe Insulation - Refrigerators	Per End Use Consumption	555.34	0.0624	0.0876
Time Clock Control	Per End Use Consumption	440.16	0.0392	0.0736
Variable Speed Pool Pump Motors	Per Unit	1,885.05	0.1416	0.2921
VAV System	Per End Use Consumption	64,645.96	8.4308	11.2966
Vertical Night Covers	Per End Use Consumption	110.08	0.0124	0.0174
VFD on Cooling Tower Fans	Per End Use Consumption	5,915.36	0.0048	3.6364
VFD on HVAC Fan	Per End Use Consumption	7,078.39	0.9231	1.2369
VFD on HVAC Pump	Per End Use Consumption	2,843.90	1.5649	0.6074
VSD Controlled Compressor	Per End Use Consumption	7,474.45	0.8395	1.1792
Water Heater Setback	Per End Use Consumption	176.52	0.0202	0.0288
Water source heat pump	Per End Use Consumption	724.52	0.0230	0.4291
Window shade film	Per Premise	907.59	0.0007	0.5579
Zero Energy Doors	Per Unit	1,879.70	0.2111	0.2966

A.3 Large Commercial Measures

Large Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
1.5HP Open Drip-Proof(ODP) Motor	Per Unit	15.13	0.0017	0.0017
10HP Open Drip-Proof (ODP) Motor	Per Unit	155.72	0.0178	0.0178
20HP Open Drip-Proof (ODP) Motor	Per Unit	174.74	0.0199	0.0199
2x4 LED Troffer	Per Fixture	167.60	0.0353	0.0353
3-phase High Frequency Battery Charger - 1 shift	Per Unit	3,850.00	0.4395	0.4395
4'4-Lamp High Bay T5 Fixture (28W)	Per Fixture	351.13	0.0740	0.0740
Advanced Rooftop Controller	Per End Use Consumption	169,047.84	18.5995	21.5750
Air Compressor Optimization	Per End Use Consumption	7,079.54	0.8082	0.8082
Auto Closer on Refrigerator Door	Per Refrigerated Case	39.03	0.0045	0.0045
Auto Off Time Switch	Per 500W Controlled	569.40	0.1200	0.1200
Bi-Level Lighting Control	Per 500W Controlled	735.48	0.1550	0.1550
Chilled Water Reset	Per End Use Consumption	23,279.35	2.5613	2.9711
Cogged Belt on 15HP ODP Motor	Per Unit	1,224.04	0.1397	0.1397
Cogged Belt on 40hp ODP Motor	Per Unit	3,869.04	0.4417	0.4417
Compressed Air Desiccant Dryer	Per Unit	30,249.37	3.4531	3.4531
Compressed Air No-Loss Condensate Drains	Per Unit	1,523.15	0.1739	0.1739
Compressed Air Storage Tank	Per End Use Consumption	5,522.05	0.6304	0.6304
Dairy Refrigeration Heat Recovery	Per unit	25,053.51	2.8600	2.8600
Dedicated Outside Air System (DOAS)	Per Unit	312,176.16	34.3471	39.8421
Demand Controlled Ventilation	Per End Use Consumption	52,502.22	5.7765	6.7007
Demand Defrost	Per End Use Consumption	329,984.87	37.6695	37.6695
Dew Point Sensor Control for Dessicant CA Dryer	Per End Use Consumption	332,150.00	37.9167	37.9167
Drip Irrigation Nozzles	Per Nozzle	4,600.00	0.5251	0.5251
Dual Enthalpy Economizer	Per End Use Consumption	2,693.76	0.3075	0.3075
DX Coil Cleaning	Per Unit	56.97	0.0063	0.0073
Efficient Compressed Air Nozzles	Per Unit	58,178.16	6.6413	6.6413
Efficient New Construction Lighting	Per Premise	107,699.03	22.6974	22.6974
Electric Actuators	Per Unit	1,107.72	0.1265	0.1265

Large Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Energy Efficient Laboratory Fume Hood	Per Unit	145,682.21	16.0287	18.5930
Energy Efficient Transformers	Per Unit	2,684.00	0.3064	0.3064
Energy Recovery Ventilation System	Per End Use Consumption	4,662.00	0.5129	0.5950
Energy Star LED Lamp, 13W_CFL Baseline	Per Lamp	412.82	0.0870	0.0870
Energy Star LED Lamp, 13W_Halogen Baseline	Per Lamp	279.96	0.0590	0.0590
Energy Star LED, 13W_Incandescent Baseline	Per Lamp	412.82	0.0870	0.0870
Energy Star Qualified LED Shelf-Mounted Task Lighting	Per Fixture	393.83	0.0830	0.0830
Energy Star Qualified LED, recessed lighting	Per Fixture	265.73	0.0560	0.0560
Energy Star room ac - 12 SEER	Per Unit	69.63	0.0077	0.0089
Energy Star windows	Per 100 S.F.	26,066.71	2.8680	3.3268
Engine Block Timer	Per Timer	576.42	0.0658	0.0658
Exterior Bi-Level Lighting Control	Per 500W Controlled	558.62	0.1246	0.0000
Facility Commissioning	Per End Use Consumption	166,493.95	18.3185	21.2491
Facility Energy Management System	Per End Use Consumption	156,088.08	17.1736	19.9210
Fan Thermostat Controller	Per End Use Consumption	104,058.72	11.4490	13.2807
Floating Head Pressure Controller	Per End Use Consumption	2,820.00	0.3219	0.3219
Grain Bin Aeration Control System	Per End Use Consumption	346,769.29	39.5855	39.5855
HE Air Cooled Chiller - All Compressor Types - 100 Tons	Per Unit	5,802.04	0.6384	0.7405
HE Air Cooled Chiller - All Compressor Types - 300 Tons	Per Unit	17,406.13	1.9151	2.2215
HE DX 11.25-20.0 Tons Elec Heat	Per Unit	1,046.93	0.1152	0.1336
HE DX 11.25-20.0 Tons Other Heat	Per Unit	490.91	0.0540	0.0627
HE DX 5.4-11.25 Tons Elect Heat	Per Unit	631.30	0.0695	0.0806
HE DX 5.4-11.25 Tons Other Heat	Per Unit	369.64	0.0407	0.0472
HE DX Less than 5.4 Tons Elect Heat	Per Unit	1,145.70	0.1261	0.1462
HE DX Less than 5.4 Tons Other Heat	Per Unit	329.45	0.0362	0.0420
HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons	Per Unit	6,348.00	0.6984	0.8102
HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons	Per Unit	13,800.00	1.5183	1.7613
HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons	Per Unit	4,830.00	0.5314	0.6164

Large Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons	Per Unit	1,035.00	0.1139	0.1321
High Bay Occupancy Sensors, Ceiling Mounted	Per End Use Consumption	911.04	0.1920	0.1920
High Efficiency Air Compressor	Per Unit	16,693.56	1.9057	1.9057
High Efficiency Refrigeration Compressor - Discus	Per Unit	135.50	0.0155	0.0155
High Efficiency Refrigeration Compressor - Scroll	Per Unit	135.70	0.0155	0.0155
High Efficiency Welder	Per Unit	23,939.65	2.7328	2.7328
High Performance Medium Bay T8 Fixture	Per Fixture	76.30	0.0161	0.0161
High Speed Fans	Per Unit	508.56	0.0560	0.0649
High Volume Low Speed Fan (HVLS)	Per Unit	21,898.17	2.4998	2.4998
Indoor daylight sensor	Per 500W Controlled	664.30	0.1400	0.1400
Induction High Bay Lighting	Per Fixture	56.94	0.0120	0.0120
Industrial Duct Sealing	Per End Use	124,870.46	13.7389	15.9368
Injection Mold and Extruder Barrel Wraps	Per End Use Consumption	6,899.23	0.7876	0.7876
Insulated Pellet Dryer Tanks and Ducts	Per Square Foot of Duct	7,117.50	0.8125	0.8125
LED Canopy Lighting (Exterior)	Per Fixture	474.65	0.1059	0.0000
LED Display Lighting	Per Fixture	4,460.30	0.9400	0.9400
LED Exit Sign	Per Exit Sign	35.04	0.0074	0.0074
LED Exterior Wall Packs	Per Fixture	504.56	0.1125	0.0000
LED High Bay_HID Baseline	Per Fixture	1,224.21	0.2580	0.2580
LED High Bay_LF Baseline	Per Fixture	730.73	0.1540	0.1540
LED Linear - Lamp Replacement	Per Fixture	58.65	0.0124	0.0124
LED Parking Area Lighting	Per lamp	576.60	0.1286	0.0000
LEED New Construction Whole Building	Per End Use Consumption	4,931,795.40	582.9801	584.0111
Low Energy Livestock Waterer	Per Unit	2,628.00	0.3000	0.3000
Low Pressure Sprinkler Nozzles	Per Nozzle	406.00	0.0463	0.0463
Low Pressure-drop Filters	Per Unit	3,539.77	0.4041	0.4041
Milk Pre-Cooler	Per Pre-cooler	8,742.54	0.9980	0.9980
Networked Lighting Controls	Per 500W Controlled	1,091.35	0.2300	0.2300
Occupancy Sensors, Ceiling Mounted	Per 500W Controlled	569.40	0.1200	0.1200
Outdoor motion sensor	Per 500W Controlled	432.48	0.0964	0.0000

Large Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Packaged Terminal AC	Per Unit	252.31	0.0278	0.0322
Photocell Dimming Control (Exterior)	Per 500W Controlled	472.61	0.1054	0.0000
Photocell Dimming Control (Interior)	Per 500W Controlled	664.30	0.1400	0.1400
Process Cooling Ventilation Reduction	Per End Use Consumption	82,694.21	9.4400	9.4400
Programmable thermostat	Per End Use Consumption	58,272.88	6.4115	7.4372
Reduced Wattage (25W) T8 Fixture	Per Fixture	87.69	0.0185	0.0185
Reduced Wattage (28W) T8 Fixture	Per Fixture	50.11	0.0106	0.0106
Reduced Wattage (28W) T8 Relamping	Per Fixture	50.11	0.0106	0.0106
Reflective Roof Treatment	Per End Use Consumption	32,213.63	3.5443	4.1113
Refrigeration Commissioning	Per End Use Consumption	133,093.90	15.1934	15.1934
Retro-Commissioning (Existing Construction)	Per End Use Consumption	166,493.95	18.3185	21.2491
Small Buildings Retro-Commissioning	Per End Use Consumption	166,493.95	18.3185	21.2491
Smart thermostat	Per End Use Consumption	104,058.72	11.4490	13.2807
Strategic Energy Management	per Facility	225,453.50	26.6505	26.6976
Synchronous Belt on 15HP ODP Motor	Per Unit	3,122.56	0.3565	0.3565
Synchronous Belt on 5HP ODP Motor	Per Unit	875.52	0.0999	0.0999
Synchronous Belt on 75HP ODP Motor	Per Unit	24,019.14	2.7419	2.7419
Time Clock Control	Per End Use Consumption	569.40	0.1200	0.1200
VAV System	Per End Use Consumption	421,356.35	46.3597	53.7764
VFD on Air Compressor	Per Unit	16,693.56	1.9057	1.9057
VFD on Cooling Tower Fans	Per End Use Consumption	199,114.02	22.7299	22.7299
VFD on HVAC Fan	Per End Use Consumption	8,959.22	1.0227	1.0227
VFD on HVAC Pump	Per End Use Consumption	2,795.38	0.3191	0.3191
VFD on Process Pump	Per End Use Consumption	40,893.86	4.6682	4.6682
VSD Controlled Compressor	Per End Use Consumption	7,474.44	0.8532	0.8532
Water source heat pump	Per End Use Consumption	483.02	0.0531	0.0616

Large Commercial Measures				
Name	Units	Annual Energy Savings (kWh)	Peak Demand Savings – Summer (kW)	Peak Demand Savings – Winter (kW)
Window shade film	Per End Use Consumption	475.25	0.0523	0.0607